RAMBOLL

ENVIRONMENT
& HEALTH

Mr. Josh Hesselbein
Enforcement and Inspection Branch
Hazardous Waste Division, ADEQ
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

RE: 2019 ANNUAL REPORT
Whirlpool Facility – Fort Smith, Arkansas

Dear Mr. Hesselbein:

Enclosed is the 2019 Annual Report (two volumes) for the former Whirlpool facility in Fort Smith, Arkansas. Also included on the enclosed zip drive is the PDF version of the report and Excel files for Table 6A [Summary of Monitoring Well Groundwater Analytical Results (Fourth Quarter 2019)] and Table 6B [Summary of ISCO Injection Well Groundwater Sampling Analytical Results (Fourth Quarter 2019)].

If you have any questions or comments, please contact me at your convenience.

February 13, 2020

Ramboll
1807 Park 270 Drive
Suite 450
St. Louis, MO 63146
USA

T +1 314 590 2950
F +1 314 590 2951
www.ramboll.com

Sincerely,



Michael F Ellis, PE
Principal

D +1 314 590 2967
mellis@ramboll.com

Enclosures:

VOLUME ONE

2019 Whirlpool Annual Report
Attachment A: Calibration Logs
Attachment B: 2019 Soil Vapor Monitoring and Vapor Intrusion Assessment Report
Attachment C: Laboratory Analytical Data
Attachment D: Data Validation Report
Attachment E: TCE Mass Estimate Calculations
Attachment F: Well and Hydropunch Construction Logs

VOLUME TWO

Attachment G: 2019 Area 1 Supplemental Investigation Report
Attachment H: 2019 ISCR Report
Attachment I: Investigation Derived Waste Manifests
Attachment J: 2019 Onsite Indoor Air and Sub-Slab Vapor Monitoring Report



2019 ANNUAL REPORT

Whirlpool Facility
Fort Smith, Arkansas

Prepared for:
Whirlpool Corporation

Prepared by:
Ramboll US Corporation

Date:
February 2020

Project Number:
1690015112

Author

STATE OF ARKANSAS
REGISTERED PROFESSIONAL GEOLOGIST
No. 1825
ANDREW A. GREMOS

Professional Geologist/Reviewer

RAMBOLL

Table of Contents

Page

1 Introduction 1

2 Site Setting 3

3 Groundwater Monitoring and Onsite Activities 4
3.1 Well Inspection/Rehabilitation and Static Water Level Measurements 4
3.2 Monitoring Well Sampling 5
3.3 Other Site Monitoring Activities 6

4 Annual Monitoring Event Results 8
4.1 Hydrogeology 8
4.2 Groundwater Analytical Results and Discussion 10
4.3 VOC Results 10
4.3.1 MNA Results 14
4.3.1.1 Chemical Lines of Evidence 15
4.3.1.2 Geochemical Lines of Evidence 16
4.3.1.3 Abiotic Degradation 17
4.3.2 Groundwater Data Quality Assessment 18
4.3.2.1 Field Data 18
4.3.2.2 Laboratory Analytical Data 18

5 Supplemental Southern Investigation 19

6 Plume Stability 23
6.1 Lines of Evidence 23
6.1.1 Statistical Analysis of Temporal Trends 23
6.1.2 Isoconcentration Maps 29
6.2 Summary of Plume Stability 30
6.3 TCE Mass Estimate 31

7 ISCR Remedial Effectiveness 34

8 Bench Scale Treatability Study Sampling 36

9 Summary and Conclusions 37

10 References 40

LIST OF TABLES

Table 1: Constituents of Concern and RADD Groundwater Remedial Action Levels
Table 2A: Groundwater Monitoring Well Network Sampled
Table 2B: Monitoring Well Inspection (October 2019)
Table 3: Summary of Monitoring Well Static Water Level Measurements
Table 4: Summary of Final Well Groundwater Field Parameter Measurements
Table 5: Summary of Vertical Hydraulic Gradient
Table 6A: Summary of Monitoring Well Groundwater Sampling Analytical Results (Fourth Quarter 2019)
Table 6B: Summary of ISCO Injection Well Groundwater Sampling Analytical Results (Fourth Quarter 2019)
Table 7A: Historical Summary of Groundwater Concentration for TCE and Daughter-Products Monitoring Wells
Table 7B: Historical Summary of Groundwater Concentration for TCE and Daughter-Products ISCO Injection Wells
Table 8: Summary of Statistical Temporal Trend Analysis (2009-2019)

LIST OF FIGURES

Figure 1: 2019 Monitoring Well Locations
Figure 2A: Annual Event Potentiometric Surface Map
Figure 2B: Vertical Groundwater Gradients Observed in Nested Wells
Figure 3A: Annual Event TCE Isoconcentration Map (North and Northeast Plumes)
Figure 3B: Annual Event TCE Isoconcentration Map (South Plume)
Figure 4: Southern Investigation Results
Figure 5: Top of Competent Shale
Figure 6: Cross Section A-A'
Figure 7: Cross Section B-B'

LIST OF ATTACHMENTS

Volume One

Attachment A: Calibration Logs
Attachment B: 2019 Soil Vapor Monitoring and Vapor Intrusion Assessment Report
Attachment C: Laboratory Analytical Data
Attachment D: Data Validation Report
Attachment E: TCE Mass Estimate Calculations
Attachment F: Well and Hydropunch Construction Logs

Volume Two

Attachment G: 2019 Area 1 Supplemental Investigation Report
Attachment H: 2019 In-Situ Chemical Reduction Report
Attachment I: Investigation Derived Waste Disposal Manifests
Attachment J: 2019 Onsite Indoor Air and Sub-Slab Vapor Monitoring Report

1 Introduction

On behalf of Whirlpool Corporation (Whirlpool), Ramboll US Corporation (Ramboll) has prepared this 2019 Annual Report (Report) for the former Whirlpool facility on Jenny Lind Road in Fort Smith, Arkansas (Site) (see Figure 1). This Report summarizes the investigation, maintenance and remediation efforts by Whirlpool under the oversight of the Arkansas Department of Environmental Quality (ADEQ) in 2019. The work performed in 2019 is summarized in this report. This report was prepared in accordance with the Revised Groundwater Monitoring Plan (RGWMP) approved by the ADEQ in September 2016; the Remedial Action Decision Document (RADD) issued by ADEQ on December 27, 2013, and revised in November 2015 (Revised RADD); and ADEQ comment letters and Ramboll/Whirlpool responses to previous quarterly monitoring reports.

The investigation, maintenance and remediation efforts performed at the Site in 2019 consisted of:

- North and south plume investigation in which TMW-35 was installed down-gradient of MW-55R and TMW-36 was installed down-gradient of MW-189 and cross-gradient from TMW-19 in June 2019;
- Well abandonments, replacement well installations and well maintenance in June 2019, September 2019 and November 2019 primarily due to pavement replacement projects performed by the current owner of the property [Phoenix Investors LLC (Phoenix)] along the north side of the former Whirlpool building;
- Semi-annual and annual groundwater and indoor air monitoring events in April and October 2019, respectively;
- Additional south plume groundwater investigation along the south property boundary based on the trichloroethylene (TCE) concentrations detected at TMW-36 consisting of hydropunch groundwater samples collected in November 2019;
- Recovery well installation (RW-1), free product assessment and aquifer testing within Area 1 at the location of a former large diameter boring (LDB-11) in November and December 2019;
- Treatability testing sample collection was performed in November 2019 and treatability testing to further assess pH modifications in groundwater and ISCR reagent effectiveness is underway; and
- In-situ chemical reduction (ISCR) injections were performed in December 2019 at the northeast corner of the Site in the vicinity of MW-91 and on the property immediately east of the northeast corner of the Site in the vicinity of MW-99 (6427 Jenny Lind Road).

The investigation in June 2019 (installation of TMW-35 and TMW-36) was discussed in the 2019 Action Plan, Former Whirlpool Facility, Fort Smith, Arkansas, October 23, 2019 (2019 Action Plan) and briefly summarized in the 2019 Semi-Annual Report. The findings from the installation of TMW-36 were used to conduct the November 2019 additional south plume

investigation proposed in the 2019 Action Plan. The well abandonments, replacement well installations and well maintenance are summarized in the 2019 Well Abandonment and Completion Report submitted to ADEQ on November 21, 2019. Recovery well installation, free product assessment and aquifer testing are discussed in Attachment G (2019 Area 1 Supplemental Investigation Report). The ISCR effort performed in December 2019 and post ISCR monitoring from the 2018 ISCR event is discussed in Attachment H of this report.

Monitoring at the site will continue in accordance with the RGWMP with the next groundwater monitoring event planned to occur in Spring 2020.

2 Site Setting

The former Whirlpool facility is located at 6400 Jenny Lind Road on the south side of Fort Smith, Sebastian County, Arkansas (Figure1). The Site formerly consisted of approximately 153 acres of which the developed portion of the property consists of the former manufacturing facility [approximately 1,175,000 square feet (ft^2)], a former warehouse (approximately 622,000 ft^2) and ancillary buildings north of the former manufacturing building including the boiler room and water treatment plant. Whirlpool sold the warehouse and surrounding property on the southern portion of the Site in September 2014 to Harmon Arkansas Properties, LLC (Harmon) and Whirlpool sold the former manufacturing building and surrounding property (approximately 93 acres) in February 2017 to Phoenix. Two tenants (Mars Petcare and MP Warehouse, Inc.) currently conduct warehousing operations within the former manufacturing facility.

A number of construction activities were completed on the northern portion of the Site during the summer and fall of 2019 (see Figure 1) to accommodate warehousing operations. Concrete pavement was placed in several locations in the vicinity of the northwest corner of the building to facilitate truck traffic for warehousing operations at the facility. New concrete paved access roads were installed from Ingersoll Avenue just east of MW-28 and immediately west of the electric substation including a concrete access adjacent to the southeast corner of the electric substation. The concrete access road immediately south of the electric substation included lowering the surface grade at this location to facilitate surface water drainage. Concrete pavement was placed at locations formerly occupied by the Boiler House (demolished June 2019) and other formerly unpaved areas to create an approximately 150 foot wide concrete-paved apron immediately north of the building to facilitate truck traffic and access to new dock doors installed along the north side of the building. Asphalt pavement was improved north of the concrete apron consisting of a veneer of new asphalt placed over the original asphalt pavement. A concrete pad was installed for tractor trailer landing gear to facilitate parking of tractor trailers in this area to support warehousing operations (i.e. the concrete pad was installed to preclude the tractor trailer landing legs from damaging the pavement).

Approximately 21 acres on the southwestern portion of the property consists of undeveloped vegetated areas (Figure 1). Onsite concrete driveways and concrete and asphalt parking areas are adjacent to the vegetated area to the south and east.

Residential areas are located to the north of the property beyond Ingersoll Avenue and commercial industrial properties are located to the south, east and west. Groundwater is not used as a potable source in the area. In addition, as of 2015, all the residential properties north of the Site where groundwater impacts have been characterized have groundwater use restrictions and access agreements in place.

3 Groundwater Monitoring and Onsite Activities

The annual groundwater monitoring event was performed during the week of October 21, 2019. This annual event included measuring water levels on October 22, 2019, from 124 wells followed by the collection of groundwater samples from 93 wells October 22 through October 25, 2019. The 93 wells sampled included 63 wells denoted as plume boundary, onsite or offsite wells according to the RADD and RGWMP or designated replacement wells (Table 2A), 19 temporary monitoring wells (TMW series of wells)[1] and four shallow wells (used for assessment of vapor intrusion).

Groundwater monitoring activities included collection of groundwater samples for analysis of volatile organic compounds (VOCs) via EPA Method 8260 in accordance with the RGWMP for all wells monitored and geochemical and monitored natural attenuation (MNA) parameters for select wells. Constituents of concern (COCs) monitored in groundwater are defined within the RGWMP. Table 1 of the plan lists the wells sampled during the annual event. The COCs and additional geochemical parameters were analyzed to assess previous and recent remediation activities as well as natural degradation of site-related chlorinated compounds in groundwater to continue to assess the effectiveness of MNA as the remedy for the groundwater impacts at the Site.

The following sections describe the groundwater monitoring activities completed during the annual event.

3.1 Well Inspection/Rehabilitation and Static Water Level Measurements

Well abandonment and replacement work to facilitate onsite construction work was conducted in June 2019 and September 2019 and is summarized in the 2019 Well Abandonment and Completion Report submitted to ADEQ on November 21, 2019. Other well rehabilitation work included flush mount concrete pad and protective cover repairs and replacements, flush mount protective cover bolt replacements, well cap (i.e. J-plug) and lock replacements and stick-up protective cover latch and hinge repairs. A summary of repairs is provided in Table 2B.

On October 22, 2019, monitoring wells were visually inspected and static water levels were measured in a total of 124 monitoring wells. Prior to taking water level measurements, monitoring wells were opened the day prior to gauging on October 21, 2019, to allow water levels to equilibrate to atmospheric conditions. Water levels were measured to the nearest 0.01 foot with an accuracy of 0.02 feet per the manufacturer's specification. The water level meter probe and tape (i.e. the only non-dedicated sampling equipment) were decontaminated prior to use at each well by spraying and scrubbing the probe and tape with Alconox detergent mixed with distilled water and then rinsing the probe and tape with distilled water prior to being wiped dry.

[1] TMW refers to temporary monitoring well. The temporary designation refers to ultimately re-designating wells in the RGWMP for future monitoring. The temporary wells were constructed and installed as permanent wells in accordance with ADEQ requirements.

The annual event static water level measurements are presented in Table 3 along with the previous four events of water level measurements recorded from project wells.

3.2 Monitoring Well Sampling

After static water level measurement activities were completed, low flow sampling was performed at each well via the use of a peristaltic pump and dedicated polyethylene tubing. The tubing was placed at a depth within the well approximately equal to the midpoint of the well screen. The wells were then purged, via the United States Environmental Protection Agency (USEPA) low stress (low flow) purging procedures (USEPA 1996), at a rate generally between 0.1 and 0.2 liters (L) per minute to minimize the amount of drawdown in the well and to reduce the likelihood of elevated turbidity. Flow rates and drawdown were checked continuously during purging. Purge water was then placed into a container prior to transfer to the onsite water holding tank for ultimate proper disposal.

Water quality parameters were measured via a water quality probe and flow thru cell. Instruments were calibrated daily prior to the start of sampling. All instruments were calibrated at a minimum of once per day. Calibration logs are included as Attachment A. Readings were recorded approximately every five minutes until the parameters stabilized. Stabilization was considered obtained when three consecutive rounds of parameter readings met the following:

- Turbidity: +/- 10% for values greater than 10 Nephelometric Turbidity Unit (NTU) or less than 10 NTU;
- Dissolved oxygen (DO): +/- 10% for values greater than 0.5 milligrams per liter (mg/L);
- Specific conductance: +/- 3%;
- Temperature: +/- 1°Celsius (C);
- pH: Within +/- 0.1 standard units; and
- Oxidation reduction potential (ORP): Within +/- 10 millivolts (mV).

Table 4 presents a summary of results for measured field parameters for the 2019 annual event.

The groundwater samples were obtained by directly filling the laboratory provided sampling bottles from the peristaltic pump discharge. VOCs were collected in three 40 milliliter (mL) glass vials that contained hydrochloric acid as a preservative per standard procedures. Samples for assessing quality assurance/quality control (QA/QC) metrics were collected by alternately filling investigative and QA/QC sample bottles for each parameter. VOC sample bottles for both the investigative and the QA/QC sample were completely filled, purged of headspace and sealed. Hach Test Kits (all verified with valid expiration dates) were used to measure ferrous iron in the field. Groundwater samples for analysis of dissolved hydrogen concentration were collected by the Microseeps gas stripping procedure (Microseeps 2014).

A total of 93 groundwater samples, 10 field duplicate samples, five matrix spike/matrix spike duplicate (MS/MSD) samples and six equipment blanks were collected during the 2019 annual event. Duplicate samples were taken at a frequency of one duplicate sample per 10

groundwater monitoring samples. Duplicate samples were collected from ITMW-9, ITMW-16, TMW-19, ITMW-20, MW-46R, MW-55R, MW-58R, MW-82, MW-85R and MW-189.

Because monitoring wells contain dedicated or new tubing, the only equipment transferred and used from well to well is the water level meter used to monitor well water levels during purging and stabilization prior to sampling and tube weights. Equipment rinsate blanks were collected after water level meters used during the monitoring event were decontaminated to evaluate field decontamination procedures. Equipment rinsate blanks were collected by pouring ASTM Type II deionized water over the decontaminated water level meter probe and tape into the appropriate sample containers. The rinsate blanks were collected after decontamination procedures at TMW-35 (EB-01-201910), TMW-19 (EB-02-201910), MW-82 (EB-03-201910), MW-179 (EB-04-201910), MW-37 (EB-05-201910) and MW-25R (EB-06-201910). The preservation and analysis of the equipment rinsate blanks was identical to those of the associated environmental samples.

Sample containers were labeled and packed on ice in insulated coolers before being shipped under chain-of-custody via overnight courier or FedEx to Pace Analytical Services in Lenexa, Kansas (VOC and MNA parameters), via FedEx to Microseeps in Pittsburg, Pennsylvania and via FedEx to Microbial Insights in Knoxville, Tennessee (microbial parameters). Chain-of-custody procedures were followed from the point of sample collection through completion of analysis. The laboratories used infrared thermometers to take sample temperatures upon sample receipt in accordance with USEPA Manual for the Certification of Laboratories Analyzing Drinking Water, Fifth Edition.

3.3 Other Site Monitoring Activities

In accordance with the RGWMP, groundwater monitoring was performed for shallow monitoring wells in the north plume consisting of MW-175, MW-176, MW-178 and MW-179. These wells are screened to monitor shallow perched water and this data is used to assist in evaluating the potential for vapor intrusion from groundwater. Due to slow recovery rates, low-flow sampling techniques were not used at the shallow wells. If excessive drawdown occurred, these wells were purged dry once then allowed to recover prior to collection of the sample within 24 hours of purging dry.

Samples for vapor intrusion assessment were collected on October 22-24, 2019, in accordance with the RGWMP Shallow Groundwater Monitoring for Vapor Intrusion Assessment and Table 1. Groundwater samples for vapor intrusion assessment were collected from monitoring wells MW-175, MW-176, MW-178 and MW-179. Soil vapor sampling was attempted at associated soil vapor monitoring points VP-7, VP-8, VP-9, VP-10 and VP-14. Water was encountered in all the soil vapor monitoring points. The sampling was performed following USEPA and industry standard methods.

The data from these shallow wells is presented in Attachment B, Annual 2019 Soil Vapor Monitoring and Vapor Intrusion Assessment Report.

Prior to the sale of the former manufacturing building, an assessment of indoor air quality was performed to determine if there was a complete exposure pathway for vapor intrusion inside the

building. Two sampling events were conducted in February 2016 and June 2016 while the former manufacturing building was still unoccupied. Both 2016 sampling events indicated that although VOC concentrations in indoor air were detected below their respective industrial air screening levels, there was a potential complete exposure pathway due to vapor intrusion in certain areas of the building when overhead doors were closed. Results of the 2016 indoor air investigations were provided to ADEQ in the Onsite Indoor Air and Sub-Slab Soil Vapor Data Report (April 2016) and Onsite Indoor Air and Sub-Slab Soil Vapor Data Report Second Monitoring Event (June 2016).

Since the 2016 indoor air investigation, the former manufacturing building was sold to Phoenix and underwent several renovations to facilitate warehousing operations. The building currently houses two tenants performing warehousing operations. In April and October 2019, indoor air and sub-slab vapor monitoring events were conducted to evaluate indoor air quality following building renovations.

The data from the April 2019 indoor air investigation was provided to ADEQ in the Onsite Indoor Air and Sub-Slab Vapor Monitoring Report (2019 Semi-Annual Report). The data from the October 2019 indoor air and sub-slab vapor monitoring event is provided in the Onsite Indoor Air and Sub-Slab Vapor Monitoring Report provided as Attachment J.

4 Annual Monitoring Event Results

The following sections present a discussion of the hydrogeology, analytical methods, the results of the laboratory analyses and an assessment of data quality and usability.

4.1 Hydrogeology

Gradient

Water levels from 124 wells at the Site were collected during the annual event (Table 3) as discussed in Section 3.1. These wells were gauged to provide a current potentiometric surface such that groundwater flow direction could be determined at the Site for the monitoring event.

Figure 2A shows the contours of the groundwater elevations based on the monitoring well static water level measurements completed on October 22, 2019. Based on the current potentiometric maps, the hydraulic gradient, as an indication of the likely direction of groundwater flow, is generally consistent with historical conditions. The groundwater gradient divide (hydraulic divide) trends west to east in the immediate vicinity north of the former manufacture facility building. In the vicinity of the hydraulic divide (i.e. north of the facility building), the hydraulic gradient is near zero. North of Jacobs Avenue the hydraulic gradient is directed to the north-northeast. South of the hydraulic divide and beneath the southern portion of the former manufacture facility building, the hydraulic gradient is directed to the south, southeast then begins to trend to the southwest along the south boundary of the property.

The installation of eight additional (sentinel) wells to the south in September 2015, subsequent additional investigations in 2016 through 2019 and the installation of TMW-36 in June 2019, have refined the understanding of the southern flow regime. The groundwater data collected since installation of the additional wells continues to indicate a second hydraulic gradient divide beneath the former manufacture facility, the axis of which trends from northwest to southeast. The gradient(s) steepen to the east, northeast east of the former manufacturing building and southwest beyond the extent of the former manufacturing building.

A linear interpolation of the gradient between six groups of wells was completed in order to assess the groundwater flow direction and gradients as follows:

- South plume southeast flow direction from MW-25R to MW-192 results in a gradient of 0.002 feet/foot;
- South plume southwest flow direction from MW-182 to MW-186 results in a gradient of 0.012 feet/foot;
- South plume southwest flow direction from ITMW-7 to MW-186 results in a gradient of 0.008 feet/foot;
- Northeast plume northeast flow direction from MW-87 to MW-183R results in a gradient of 0.011 feet/foot;
- North plume northeast flow direction from MW-58R to MW-61R results in a gradient of 0.019 feet/foot; and

- North plume easterly flow direction from MW-56R to MW-194 results in a gradient of 0.005 feet/foot.

Although the gradient remains relatively flat beneath the former manufacture building (i.e. 0.002 feet/foot), the gradient steepens somewhat towards the southwest at the southwest corner of the building and towards the northeast. The gradient increases from 0.008 feet/foot to 0.012 feet/foot towards the southwest based upon the October 2019 water level measurements. The northeast gradient(s) range from 0.005 feet/foot to 0.019 feet/foot based upon the October 2019 static water level measurements.

Shallow Monitoring Wells

Groundwater elevations from shallow groundwater wells (MW-174 through MW-177) located along the north side of Jacobs Avenue and MW-178 (located immediately south of Ingersoll Avenue) were used to evaluate the shallow horizontal gradient. Static water elevations along Jacobs Avenue decrease from west to east; from a high of 467.31 feet at MW-177 to a low of 460.32 feet at MW-174. The calculated shallow groundwater gradient west to east based on these two wells is 0.008 feet/foot. Static water elevations in the deeper Basal Transmissive Zone wells also generally decrease from west (MW-70, 464.06 feet) to east (MW-63R, 460.96 feet) with a resulting gradient of 0.004 feet/foot. The highest shallow groundwater elevations were measured in the most up-gradient shallow well MW-178 (470.99 feet). These results suggest that the shallow groundwater horizontal flow gradient generally mimics the deeper groundwater flow gradient to the east/northeast based on the number and location of shallow groundwater monitoring wells available.

Groundwater elevations from shallow groundwater wells MW-174 through MW-177 and MW-178 were also compared to groundwater elevations from nearby deeper monitoring wells to evaluate vertical gradient. MW-175 is located approximately at the midpoint between deeper groundwater monitoring wells MW-46R and MW-56R allowing the comparison of groundwater elevations at MW-175 to the average of the groundwater elevations at MW-46R and MW-56R. The vertical gradients are summarized in Table 5. Based on this evaluation, observations are as follows:

- Downward vertical gradient (-0.42 feet/foot) at the most up-gradient (southwestern) well grouping MW-178/MW-83;
- Slight downward gradient (-0.02 feet/foot) at MW-176/MW-46R;
- Downward (-0.30 feet/foot) at MW-175/MW-46R and MW-56R; and
- Upward gradient (0.12 feet/foot) at the eastern most well pairing, MW-174/MW-63.

A comparison of gradients based upon the April and October 2019 water level measurements is shown on Figure 2B. Vertical gradients were generally consistent with historical gradients. The difference in vertical gradient in MW-174/MW-63R increased from -0.27 feet/foot to 0.12 feet/foot representing the biggest difference in gradients from April to October 2019. The static water level elevations increased in all the deeper wells ranging from increases of 0.36 feet (MW-56R) to 2.02 feet (MW-63R).

4.2 Groundwater Analytical Results and Discussion

All VOC analytical data from all wells were subjected to data validation in accordance with the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Review (August 2014). The laboratory analytical reports for the samples are presented in Attachment C. Summaries of analytical results (i.e. detected compounds) for samples collected during the annual event are presented in Table 6A (monitoring wells) and Table 6B [in-situ chemical oxidation (ISCO) injection wells]. This table includes data qualifiers that may have been assigned from validation. A discussion of the field and laboratory analytical results for this event is presented below.

4.3 VOC Results

This section presents an evaluation of the VOC data that was collected from the Site during the annual event. TCE results for the annual event are presented on Figures 3A and 3B. Like the groundwater monitoring well classifications presented in the RADD, the groundwater monitoring wells included in the RGWMP have been organized into groups consisting of the plume boundary wells, offsite wells and onsite wells. Table 2A summarizes the wells in each group.

Plume Boundary Wells

Twenty-nine monitoring wells are identified as plume boundary wells to be sampled during the annual monitoring event (Table 2A) at the Site. VOC concentrations were detected above the RADD remedial action levels (RALs) (Table 1) in eight of the 29 samples collected from the plume boundary wells. Tabulated VOC concentrations measured in these wells during the annual event are presented in Table 6A and historical TCE concentrations and daughter products are presented on Table 7A.

Notable results from the annual sampling event for wells at or near the plume boundaries include:

North Plume

- MW-61R: TCE concentration of 20.8 micrograms per liter (µg/L) (vs. RAL of 5 µg/L) (MW-61R was redeveloped in December 2019 and resampled as discussed below; the TCE concentration was reported at 15 µg/L in December 2019);
- MW-63R: TCE concentration of 7.4 µg/L (vs. RAL of 5 µg/L); and
- MW-194: TCE concentration of 10.8 µg/L (vs. RAL of 5 µg/L).

Northeast Plume

- MW-99: TCE concentration of 72.6 µg/L (vs. RAL of 5 µg/L) (see further discussion below in Section 7 and Attachment H regarding ISCR injections performed at this location and proposed additional investigation at this location in the Northeast Supplemental Investigation Work Plan dated December 19, 2019, and approved by ADEQ on January 14, 2020);

South Plume

- ITMW-21: TCE concentration of 6 µg/L (vs. RAL of 5 µg/L);
- MW-186: Vinyl chloride (VC) concentration of 2.2 µg/L (vs. RAL of 2 µg/L); and
- MW-189: TCE concentrations of 510 and 506 µg/L (vs. RAL of 5 µg/L) in the investigative and duplicate samples.

Southeast Area

- TMW-34: TCE concentration of 17.6 µg/L (vs. RAL of 5 µg/L) (TMW-34 was redeveloped in December 2019 and resampled as discussed below; the TCE concentration was reported at 26.7 µg/L in December 2019).

ISCR injections were completed at several treatment areas in the summer of 2018 to address TCE impacts in groundwater at plume boundary wells located to the north (MW-61R and MW-194), southeast (MW-185) and southwest (MW-186). During the recent December 2019 ISCR event, MW-61R and TMW-34 (east and down-gradient of MW-185) were redeveloped and resampled to confirm representative water quality and VOC results at these plume boundaries. After sufficient volume was removed, the wells were resampled for VOCs only. Water quality and analytical data values from this effort are included in the 2019 In-Situ Chemical Reduction Event Report (2019 ISCR Report) in Attachment H.

MW-63R TCE concentrations have ranged from 2.9 µg/L to the current concentration of 7.4 µg/L. This is the first time TCE levels have exceeded the RAL since July 2015 at concentration of 5.6 µg/L. Monitoring will continue in accordance with the RGWMP.

TCE concentrations at MW-194 have ranged from 8.6 µg/L to 10.8 µg/L following the 2018 ISCR injections (slightly decreased from the pre-injection baseline concentration of 13.3 µg/L). Water quality data continues to indicate reducing conditions at this well with a slight increase in ORP and slight decrease in ferrous iron during the 2019 annual event. Further discussion on water quality data at this location is presented in the attached 2019 ISCR Report. In addition, since installation of this well in August 2016, seasonal fluctuations of TCE concentrations are observed with higher TCE concentrations consistently occurring during the fall events and lower TCE concentrations during the spring events. With continued reducing conditions and an anticipated decrease in TCE concentration during the 2020 Semi-Annual Monitoring Event, further monitoring is needed to evaluate trends at this location following the 2018 ISCR event.

The TCE concentration at MW-99 has ranged from below detection limits (less than 0.17 µg/L) to the current concentration of 72.6 µg/L (note that MW-99 was resampled in December 2019 for ISCR baseline and the TCE concentration was 59.3 µg/L). ISCR injections consisting of installation of treatment zones at MW-99 and up-gradient at MW-91. Further discussion of the ISCR remediation performed at this location is presented in the attached 2019 ISCR Report (Attachment H). A work plan for supplemental investigation in the area of MW-99 was submitted to ADEQ on December 19, 2019, and was approved in an ADEQ response letter dated January 14, 2020. The supplemental investigation at MW-99 is planned to occur during Spring 2020.

The TCE concentration at MW-189 has ranged from 2.4 µg/L (September 2015) to 670 µg/L (November 2018). A supplemental groundwater investigation was completed at the southern Site property boundary during November 2019 and is discussed in Section 5 of this report. In addition, ISCR injections are planned for Spring 2020 along the southern property boundary in the vicinity of TMW-36 (down-gradient of MW-189 and TMW-19) in accordance with the 2019 Action Plan. Modifications to the 2019 Action Plan are anticipated considering the results of the November 2019 supplemental investigation presented in Section 5.

Consistent with historical analytical results for the Site, all other plume boundary well VOC results were reported as non-detect or at concentrations less than RALs.

Offsite Wells

Eight monitoring wells and three injection wells are identified as offsite wells to be sampled during the annual monitoring event (Table 2A). The offsite wells include those installed at offsite properties to the north and northeast of the Whirlpool northern property boundary that are not otherwise identified as plume boundary wells. Tabulated VOC concentrations measured in the eleven offsite monitoring wells during the annual event are presented in Table 6A and Table 6B.

During the annual event, the highest concentration of TCE detected in groundwater samples from the offsite wells was 649 µg/L collected from MW-56R. This is a decrease from 803 µg/L at MW-56R in April 2019. TCE concentrations are lower up gradient at MW-46R at 560 µg/L. Variations are expected to continue in TCE concentrations within the north plume and monitoring will continue in MW-56R and in up-gradient (MW-46R) and down-gradient wells (TMW-14). There are sufficient down-gradient monitoring locations to evaluate conditions and there is a down-gradient treatment zone at the eastern extent of the north plume just west of Jenny Lind Road.

Onsite Wells

Twenty-three monitoring wells are identified as onsite wells to be sampled during the annual monitoring event (Table 2A). Onsite wells include certain wells that are located along the perimeter of the former Whirlpool manufacturing facility within the source area or south of the source area which includes wells immediately adjacent to the former Whirlpool manufacturing building. Tabulated VOC concentrations measured in onsite wells during the annual event are presented in Table 6A.

VOCs were detected above the RADD RALs in 19 of the 23 groundwater samples collected from onsite wells. VOCs detected at concentrations exceeding the respective RALs consist of:

- TCE in 16 wells;
- 1,1-dichloroethane (1,1-DCA) in ITMW-1R, ITMW-9, and MW-85R;
- 1,1-dichloroethene (1,1-DCE) in ITMW-5, ITMW-9, MW-25R, MW-38, MW-85R, MW-93 and MW-95;

- Cis-1,2-dichloroethene (cis-1,2-DCE) in ITMW-9, MW-25R, MW-38, MW-85R, MW-93 and MW-95;
- 1,1,2,2-tetrachloroethane (1,1,2,2-TCA) in ITMW-19, MW-25R, MW-85R and MW-95;
- Tetrachloroethene (PCE) in MW-85R and MW-95; and
- VC in MW-25R, MW-38, MW-85R, MW-93 and MW-95.

During the annual event, the maximum onsite TCE concentration measured was 74,500 µg/L at MW-85R. MW-85R is located slightly north of the former linear drainage feature within the source area and is currently the designated replacement well for abandoned MW-86. An additional well has been proposed for installation southeast of MW-86 (south of the former linear drainage feature) in between IW-147 and IW-155 in a response letter to ADEQ dated December 19, 2019.

Northeast Corner Wells

Nine wells were monitored during the annual event to delineate TCE impacts at or near the northeast corner of the Site (MW-96, MW-97, MW-98, MW-99 MW-183R and MW-184 are plume boundary wells and MW-87, MW-89 and MW-91 are onsite wells). Analytical results from these wells are included in Table 6A.

During this event, MW-91 exhibited a TCE concentration of 437 µg/L which is the lowest concentration since January 2016 (was also 437 µg/L in November 2018). Overall monitoring event concentrations have ranged from 317 µg/L (in January 2015) to 605 µg/L (in April 2017). Further discussion of the remediation performed at this location is presented in the attached 2019 ISCR Report (Attachment H).

MW-87 and MW-89 exhibited historical low concentrations of 315 µg/L and 9 µg/L, respectively.

TCE concentrations in MW-99 located east of Jenny Lind Blvd. increased to 72.6 µg/L as discussed above in the Plume Boundary Well discussion.

TCE concentrations in MW-96, MW-97 and MW-184 on the Boys and Girls Club property continue to be below detection limits (MW-184 since April 2017) and the result for MW-98 was slightly above the laboratory detection limit at 0.38 µg/L. The TCE concentration at MW-183R during the annual event was at 1.2 µg/L.

Temporary Wells

In accordance with the action plans presented in the 2016 Annual Report and subsequent revised action plans, 21 temporary monitoring wells (consisting of TMW-10, TMW-11, TMW-12, TMW-14, TMW-16, TMW-19, TMW-20, TMW-21, TMW-22, TMW-23, TMW-24, TMW-25, TMW-26, TMW-27, TMW-29, TMW-30, TMW-32, TMW-34, TMW-35, TMW-36 and TMW-36B) have been installed on the southern portion of the former Whirlpool property and in the north plume area.

As shown on Figure 3A, temporary wells in the north were installed to delineate the northeastern edge of the plume. TCE concentrations in north plume temporary wells TMW-10, TMW-11, TMW-12, TMW-14, TMW-20, TMW-21, TMW-22, TMW-23, TMW-24, TMW-29 and TMW-35 in the north plume area ranged from below detection limits (less than 0.17 µg/L) at TMW-20, TMW-35 and TMW-29 to 575 µg/L at TMW-24.

As shown on Figure 3B, temporary wells were installed southwest of the former manufacturing building to delineate the plume. TCE concentrations in temporary wells TWM-16, TMW-19, TMW-25, TMW-26, TMW-27, TMW-30 and TMW-32 ranged from below detection limits (less than 0.17 µg/L) at TMW-27 to 42.9 µg/L at TMW-26.

Temporary well TMW-34 was installed to the southeast to monitor concentrations at the property boundary at the southeast treatment zone down-gradient from MW-185. Concentrations at TMW-34 have ranged from 7.4 µg/L to 17.6 µg/L during monitoring events.

Temporary wells TMW-36 and TMW-36B on the southern portion of the former Whirlpool property ranged from below detection limits (less than 0.17 µg/L) at TMW-36B to 389 µg/L at TMW-36.

4.3.1 MNA Results

Thirteen wells were monitored for laboratory and field natural attenuation parameters in accordance with the RGWMP. This section presents the evaluation of the VOC results (Section 3.2.1) as they relate to MNA field and laboratory data collected from the Site during the 2019 annual sampling event. Tabulated results of the field parameters collected from 93 monitoring wells are presented in Table 4 (which includes the 20 temporary monitoring wells consisting of TMW-10, TMW-11, TMW-12, TMW-14, TMW-16, TMW-19 through TMW-27, TMW-29, TMW-30, TMW-32, TMW-34, TMW-35 and TMW-36).

The USEPA documents Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater (USEPA 1998) and An Approach for Evaluating the Progress of Natural Attenuation in Groundwater (USEPA 2011) provides a framework for presenting the lines of evidence that natural attenuation of chlorinated solvents is occurring. The three recognized lines of evidence include:

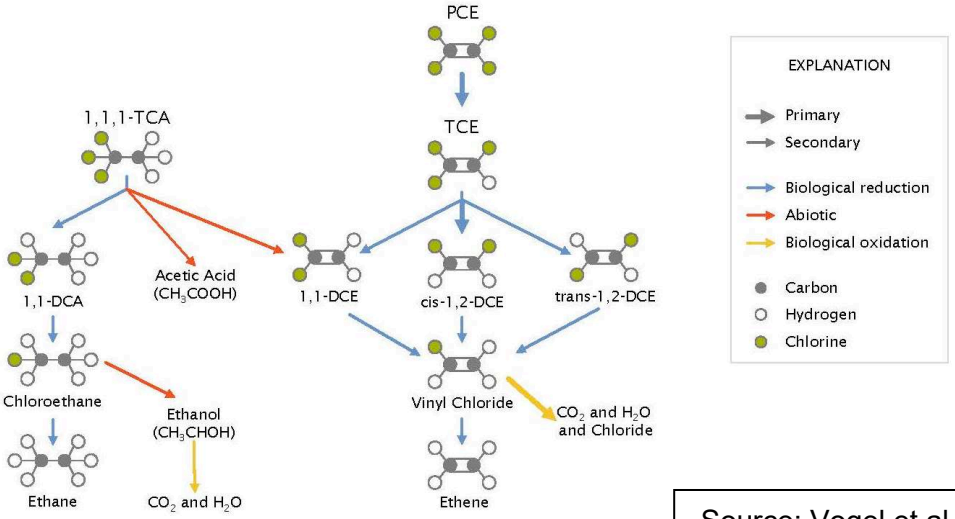
- Historical groundwater and/or soil chemistry data that clearly demonstrate a trend of decreasing contaminant mass and/or concentration over time at appropriate monitoring points (USEPA 1998);
- Hydrogeologic and geochemical data that can be used to establish indirectly the type(s) of natural attenuation processes occurring at the site and the rate at which the processes will reduce contaminant concentrations to the cleanup goal (USEPA 1998); and
- Data from field or microcosm studies which directly demonstrate the occurrence of a specific natural attenuation process at the site and its capacity to degrade the contaminants of concern (USEPA 1998).

The MNA assessment evaluates predominant electron acceptors, the variability of these electron acceptors, major nutrients, general groundwater quality, key microbial population and enzyme activities and dissolved gasses. The assessment uses this data to determine the types of organisms that will be able to effectively flourish in the aquifer, how the geochemistry and chemistry of the aquifer impacts MNA processes, how the indigenous microbial population is being supported, the availability of microbial populations and the presence of reductive dechlorination occurring in the aquifer. Although evidence of reductive dechlorination is present in the three plumes (north, northeast and south plumes), the microbial population is too low to support meaningful reductive dichlorination. The reductive dechlorination is essentially occurring via abiotic means.

4.3.1.1 Chemical Lines of Evidence

The occurrence and progress of natural attention in reducing COC concentrations is provided by evaluating the presence and effectiveness of the transformation pathways for chlorinated ethenes. Chlorinated ethenes are degraded by both biological and abiotic (non-biological) mechanisms. The graphic below shows the biological (anaerobic) and abiotic transformation pathways for chlorinated ethenes. This graphic does not include other chemically induced aerobic (e.g. ISCO) and anaerobic [e.g. zero-valent iron (ZVI)] pathways that can promote degradation of chlorinated compounds.

Abiotic and Biotic Pathways for Chlorinated Ethenes and Ethanes



Source: Vogel et al. 1987.

Tables 4, 6A and 6B present a summary of field parameters and analytical results for VOCs in groundwater, respectively. These data provide lines of evidence that natural attenuation of TCE is continuing to occur primarily via abiotic mechanisms in both onsite and offsite groundwater. Groundwater sample results continue to show elevated levels of cis-1,2-DCE in groundwater in each of the three plumes. Of all the monitoring wells sampled, only 18 wells exhibited TCE concentrations where the cis-1,2-DCE concentrations was below detection limits. The TCE concentrations in these 18 wells ranged from 0.38 µg/L to 55.9 µg/L and TCE concentrations

were less than 5 µg/L in eight of these 18 wells. The consistent detection of cis-1,2-DCE in groundwater provides evidence that degradation of TCE is occurring. Table 6A and Table 6B also includes the laboratory MNA analytical results and the microbial data (noting microbial populations are limited) with significant increases of dehalocaccoides (DHC), tceA reductase (TCR) and VC reductase (VCR) in TMW-10 and TMW-11 indicating increased biological activity from ISCR injections in this area.

Sampling MNA parameters at locations where TCE is below 5 µg/L does not typically provide valuable data when evaluating MNA processes. When TCE concentrations are below the 5 µg/L RAL, due to the low TCE concentration, further significant reduction in contaminant concentrations is not expected within the relatively brief timeframes between monitoring events.

4.3.1.2 Geochemical Lines of Evidence

The occurrence and progress of natural attenuation in reducing COC concentrations is provided by evaluating geochemical parameters along with the results of conventional chemical and microbial analyses. The detection of cis-1,2-DCE in groundwater samples from this Site is evidence that conditions likely are favorable for active reductive dechlorination processes. Key parameters used to assess the progress of reductive dechlorination include: temperature, concentration or presence of electron acceptors (DO, nitrate, iron, manganese and sulfate), presence and amount of nutrients (e.g. concentrations of nitrogen and phosphorus), bioavailable carbon source to sustain microbial population, concentrations of COCs and pH.

Tables 4 and 6 present the groundwater field parameters for MNA assessment for the annual event. A summary of the key items on Tables 4 and 6 are discussed below:

- The groundwater during this sampling event was generally considered to be under bulk anaerobic conditions with 76 of the 93 wells measured showing DO concentrations less than 1 mg/L (see Table 4). In addition, 83 of the 93 sampled wells displayed microaerophilic conditions with DO less than 2 mg/L. DO levels were relatively low in both the north and south plumes. DO levels in the northeast plume are relatively low onsite ranging from 0.08 mg/L to 0.21 mg/L but DO levels slightly increase in monitoring wells beyond the site boundary ranging from 0.21 mg/L to 0.65 mg/L with a more significant increase at the northeastern most well MW-97 with a DO level of 2.48 mg/L. Field water quality parameters at MW-91 and MW-99 in the vicinity of ISCR injection work in the northeast plume are further discussed in Attachment H.
- The ORP of the groundwater samples ranged from a low of -295.8 mV in TMW-23 to a high of 460.4 mV in ITMW-11. This is consistent with previous ORP readings at these locations. The measured ORP levels were less than 500 mV in all Site monitoring wells which indicates that the groundwater is under manganese to iron reducing conditions. In general, ORP readings are generally lower in areas impacted by ISCR ranging from -295.8 mV in TMW-23 to -53.5 mV in MW-194 (Section 7 and Attachment H for further discussion) and ORP readings are generally higher in areas where ISCO was performed in 2014 and 2015 ranging from -200 mV in IW-132 to 460.4 mV in ITMW-11 (i.e. Areas 1, 2 and 3 and the Neck Area).

- The pH of the groundwater ranged from a low of 3.4 in ITMW-11 to a high of 11.31 in MW-190 which is consistent with the prior sampling event. In general, pH levels are in the range of 5 to 7.
- The temperature of the groundwater ranged from about 15.7° to 28.4°C, with many of the temperatures around 15 to 19°C, which is a range that would support microbial growth in groundwater.

The chemical and geochemical data from the 2019 annual event are similar to the previous monitoring events from 2014 through 2019 with wells within zones of recent ISCR injections showing reducing environments. The VOC results demonstrate that reductive dechlorination is occurring in multiple locations within the plumes.

4.3.1.3 Abiotic Degradation

Abiotic reactions are non-biological (as described above) and provide significant contribution to natural attenuation processes for degradation of TCE at the Whirlpool site. Abiotic agents that may enhance the reductive dechlorination of chlorinated ethenes include zero-valent metals and sulfide minerals.

Sulfide and acetylene were retained for MNA evaluation purposes in the RGWMP. Sulfide results were below detection limits (i.e. less than 50 µg/L) in all samples.

Acetylene is a break down constituent from the abiotic degradation of cis-1,2-DCE (acetylene then degrades to ethylene or ethene). Acetylene results were below detection limits (i.e. less than 0.50 µg/L) in all samples except at IW-147 and MW-25R with concentrations of 3 µg/L and 2 µg/L, respectively. Since cis-1,2-DCE can degrade directly to VC without generating acetylene, the assessment of abiotic processes based upon acetylene concentrations is limited.

The presence of ethene suggests complete dechlorination of chlorinated constituents. As discussed above, dechlorination to ethene occurs via abiotic and/or biological processes. Ethene data is provided on Table 6A and Table 6B and data indicates ethene was detected at 16 of the 24 locations monitored[2] and relatively significant ethene concentrations were detected at MW-25R (48 µg/L), MW-38 (21 µg/L), TMW-10 (2.8 µg/L), TMW-16 (5.1 µg/L) and TMW-22R (4.1 µg/L). The ethene concentrations suggest abiotic processes are contributing to the complete dechlorination of TCE at various locations at the site.

Future monitoring will continue to assess abiotic processes.

4.3.1.4 Biological Degradation

Data from field and microcosm studies suggest limited occurrence of biological processes at the site to degrade the contaminants of concern; however, biological processes have been

[2] The detection of breakdown constituents is unlikely at monitoring locations where MNA analysis is performed where TCE concentrations are low (i.e. typically less than 5 µg/L to 100 µg/L) since the concentrations of breakdown constituents will be two to three orders of magnitude less than the TCE concentrations depending upon the rate of TCE degradation.

enhanced at locations where reducing conditions and pH conditions have been improved (i.e. reduced ORP and increased pH to achieve neutral conditions). For example, DHC populations have increased one to two orders of magnitude at TMW-10 and TMW-11 approximately one year after establishing an improved reducing environment (current ORP measurements in TMW-10 mV and TMW-11 mV are -166 and -124, respectively) and adjusting the pH closer to neutral (current pH measurements in TMW-10 mV and TMW-11 mV are 6.83 and 7.00, respectively).

As noted above, dechlorination to ethene occurs via abiotic and/or biological processes, and a relatively significant ethene concentration was detected at TMW-10 (2.8 µg/L) (considering the TCE concentration is 8.6 µg/L). The DHC population and reducing conditions suggest biological processes may be contributing to the complete dechlorination of TCE in the vicinity of TMW-10.

Treatability studies are underway to further assess establishing reducing conditions and pH adjustment to enhance biological processes. Future monitoring will continue to assess biological processes.

4.3.2 Groundwater Data Quality Assessment

All field and analytical data were reviewed by Ramboll. Validation findings are summarized in the following. The detailed validation report is included in Attachment D.

4.3.2.1 Field Data

Field data was collected and validated according to the RADD, work plan and associated standard operating procedures (SOPs) and USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Review (August 2014). The field data and documentation were evaluated against the following criteria, as appropriate.

Samples were collected at the specified locations identified in the RGWMP approved by ADEQ in September 2016:

- Field instrumentation calibration and QA/QC checks on equipment were conducted daily prior to field work; and
- Sample documentation protocol and chain-of-custody protocols were followed per Ramboll field procedures.

4.3.2.2 Laboratory Analytical Data

All VOC (SW846 5030B/8260B) analytical results for the plume boundary, onsite and offsite wells, received data validation by Ramboll. During the data validation process, data validation qualifiers were assigned to the results per USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (August 2014), as necessary, to indicate potential limitation on use of the data. In addition, data qualifier codes were added to the results to indicate the reason(s) for qualification and the associated bias direction if discernible.

5 Supplemental Southern Investigation

The 2019 Action Plan included a supplemental investigation which was completed in the vicinity of MW-189, TMW-19 and TMW-36 to assess the increase in TCE concentrations which has occurred at MW-189 at the south portion of the south plume during the last two years (i.e. TCE concentrations increasing from less than 5 µg/L in January 2016 to 670 µg/L in November 2018 and 510 µg/L in October 2019).

The supplemental investigation consisted of installation of groundwater monitoring well TMW-36B and seven hydropunch soil probes for collection of groundwater samples (hydropunch locations HP-09 through HP-15) (Figure 4). TMW-36B was installed within the shallow saturated soils observed during installation of TMW-36 from approximately 26 to 31 feet below ground surface (bgs) (the screened interval of TMW-36B was installed at 25 to 30 feet bgs) to assess TCE concentrations in potentially separate water bearing zones.TMW-36B was installed using hollow stem augers and constructed with 5 feet of 2 inch diameter, 0.01 inch slot PVC screen and 2 inch diameter and solid flush threaded schedule 40 PVC riser pipe to the surface. A sand filter pack was installed in the well annulus around the PVC screen to approximately 2 feet above the top of the screen followed by 2 feet of annular seal consisting of hydrated bentonite chips above the top of the sand pack. The remainder of the annular space was tremie grouted with a bentonite/cement grout mixture. The well was completed with an expandable locking well cap and covered with a steel cover flush with the ground surface. A well construction log is provided in Attachment F.

TMW-36B was developed approximately 24 hours after grout installation in accordance with ADEQ guidance. Purging was performed for groundwater sample collection on November 22, 2019, while monitoring pH, conductivity, DO, ORP and turbidity. After stabilization of these parameters to within 10%, a groundwater sample was collected and submitted to Pace Analytical for analysis for VOCs (EPA Method 8260). Groundwater laboratory results are provided below. Laboratory reports are provided as Attachment C.

TMW-36B was surveyed to enable collection of potentiometric surface levels for comparison to TMW-36 to assess vertical gradient. On December 5, 2019, static water levels were measured with an electronic water level meter to the nearest 0.01 foot in TMW-36 and TMW-36B to assess vertical gradient. The measured depth to water in TMW-36 was 24.97 feet below top of casing and 24.94 feet below top of casing in TMW-36B. The shallow and deep wells are approximately 5 feet apart. Both wells have surveyed top of casing elevations of 485.35 feet above mean seal level (amsl). The static water level elevation in TMW-36 was 460.38 feet amsl and 460.41 feet amsl in TMW-36B suggesting a slight downward vertical hydraulic gradient from the upper clayey sand to the lower clayey gravels of the basal transmissive zone at this location (potentiometric surface difference of -0.03 feet).

The hydropunch soil probes were advanced to total depths targeting the upper sandy layer of the Basal Transmissive Zone and the top of the shale at the base of the Basal Transmissive Zone at HP-09, HP-10, HP-11 and HP-12. Groundwater samples were collected from two depths in HP-09 through HP-12 as noted in the table below (i.e. shallow and deep). Hydropunch

soil probes HP-13, HP-14 and HP-15 were advanced to top of shale at the base of the Basal Transmissive Zone to facilitate delineating groundwater impacts in the deeper zone.

Hydropunch soil probes were advanced using a direct push drill rig. Each borehole was logged by a Ramboll geologist prior to advancing the hydropunches except at HP-15 (hydropunch advanced to refusal) (i.e. two adjacent soil probes completed at each location with the first soil probe performed to the log subsurface conditions and the second probe performed for collection of groundwater samples using the hydropunch). At sample depth, drilling rods were pulled up to expose the hydropunch 4 foot long stainless-steel screen or a 1 inch PVC screen and associated riser was installed if the respective hydropunch produced water poorly. Groundwater was purged and sampled using a peristaltic pump and dedicated tubing and a groundwater sample was collected after the turbidity in the purge water decreased if there was adequate volume. After groundwater sampling was completed, the soil probes for the hydropunch locations were abandoned using bentonite chips. Hydropunch construction logs are provided in Attachment F.

The hydropunch soil probes were surveyed for elevation and location following installation.

Groundwater samples from hydropunch locations were collected and submitted to Pace Analytical for analysis for VOCs (EPA Method 8260) with a same day laboratory turnaround time. Initial laboratory results from hydropunch groundwater samples provided timely VOC groundwater data to assess and adjust the locations of subsequent hydropunch soil probes as the investigation proceeded. Groundwater laboratory results are provided below. Laboratory reports are provided as Attachment C.

The investigation derived waste (IDW) soil cuttings generated from drilling activities were collected and containerized in 55 gallon drums and staged on the former Whirlpool manufacturing facility property. Water generated from decontamination, well development, purging and sampling activities was also be containerized for disposal. Disposal manifests are included in Attachment I.

Results

The supplemental southern investigation characterized VOC impacts in groundwater at the south property boundary. Historical information has indicated a shallow potentiometric surface gradient (0.002 feet/foot) and shale bedrock slope (stronger southwest grade) and did not suggest potential VOC migration in groundwater to the south southeast to the extent characterized during the investigation.

The shale bedrock surface elevation map was updated and modified to reflect the current understanding of the shale surface based upon soil borings advanced at the hydropunch locations (Figure 5). The shale surface elevation decreases from 445 feet amsl at TMW-36 to 443.75 feet amsl at HP-13 approximately 825 feet to the east (the easternmost hydropunch location) indicating a slight eastward downward slope in the shale surface of 0.0015 feet/foot. These additional shale surface elevation points combined with the existing elevations at MW-189, MW-190, MW-191 and MW-192 depict a shale surface with a slight downward gradient to

the southeast from MW-189. However, based on elevation data points northwest and southwest from MW-189 the shale surface is defined with a much greater downward slope to the west. West of TMW-36, the shale contact elevation at HP-11 confirms the shale slopes downward to the west northwest forming a trough which is consistent with previous investigations.

The southern portion of the potentiometric surface map at the south edge of the former Whirlpool building (Figure 2A) indicates localized hydraulic gradients trending southwest at MW-182, southeast from ITMW-5 and ITMW-10 to MW-189 and MW-190 and northeast from MW-185. The southeast trending potentiometric surface gradient from the south edge of the building to the area of MW-189 and MW-190 is very minimal (approximately 0.002 feet/foot). The bedrock surface map indicates higher elevations in the area of ITMW-8 and a low trending southwest at TMW-17. Based on the shale surface alone, a more westerly component in the potentiometric surface gradient would be expected. The upper clayey sand/silty sand portion of the basal transmissive zone was not encountered at HP-14 but has been encountered at every other location along the southern property boundary between MW-188 and HP-13 including TMW-19 and MW-189 north of the southern property boundary. A cross section along the southern property (Cross-Section A-A') is provided as Figure 6. The thickness of the Basal Transmissive Zone along the southern property boundary decreases from approximately 16 feet at HP-12 (note probe refusal occurred at HP-12 prior to advancing beyond the Basal Transmissive Zone) to approximately 7.5 feet at MW-188 to the west and to approximately 5.5 feet to east at HP-14 (note probe refusal occurred at HP-14 prior to advancing beyond the Basal Transmissive Zone). An increase to 14 feet of thickness was observed from HP-14 to HP-13 further east. A cross section north to south (Cross-Section B-B') is provided as Figure 7. The upper clayey sand/silty sand portion of the Basal Transmissive Zone is not present at ITMW-5 and ITMW-10 but was observed from ITMW-6 to the south to HP-10. The thickness of the lower clayey gravel Basal Transmissive Zone thins from ITMW-5 (approximately 6 feet) to ITMW-6 (approximately 5 feet) then thickens to MW-189 (approximately 10 feet) before becoming much thinner at HP-10 (approximately 4 feet) at the property boundary. There is very little north to south slope or grade change in the surface of the shale bedrock along the B-B` transect that would infer a strong potentiometric surface gradient control. The upper and lower portions of the Basal Transmissive Zone thicken to the south but neither the shale surface gradient nor the potentiometric surface gradient suggest significant southeasterly groundwater flow that would help explain the relatively rapid increase in TCE concentrations observed in MW-189 which is the basis for investigation along the south property boundary.

As shown on Figure 4, the extent of TCE impact along the southern property boundary has been delineated to the east between HP-12 and HP-14 and to the west between TMW-19 and MW-188. The following is a summary of groundwater VOC concentrations from the supplemental investigation:

SAMPLE LOCATION	SAMPLE DATE	SCREEN INTERVAL (feet)	ANALYTICAL RESULTS (µg/L)		
			TCE	cis-1,2,-DCE	VC
HP-09-Shallow	11/21/2019	20.5 - 30.5	< 8.5	< 8.5	< 5.5
HP-09-Deep	11/18/2019	36 – 39	147	6.7	0.26 J
HP-10-Shallow	11/19/2019	28 - 32	< 3.4	< 3.4	< 2.2
HP-10-Deep	11/19/2019	37.5 - 41.5	150	9.6	0.33 J
HP-11-Shallow	11/21/2019	27.5 - 31.5	0.20 J	< 1.0	0.12 J
HP-11-Deep	11/19/2019	38 - 42	< 3.4	< 3.4	< 2.2
HP-12-Shallow	11/21/2019	20 - 30	0.81 J	< 1.0	< 1.0
HP-12-Deep	11/19/2019	36 - 37.5	237	8.6	0.29 J
HP-13-Deep	11/20/2019	34 - 38	< 0.17	< 0.17	< 0.11
HP-14-Deep	11/20/2019	38 - 42	< 0.17	< 0.17	< 0.11
HP-15-Deep	11/22/2019	38.5 - 42.5	0.53 J	< 1.0	0.27 J
TMW-36	10/24/2019	36 - 41	389	8.4	0.31 J
TMW-36B	11/22/2019	25 - 30	< 0.17	< 0.17	< 0.11

<: Result less than reporting limit
J: Estimated Value

TCE concentrations from deep hydropunch samples ranged from 237 µg/L at HP-12 to non-detect (<0.17 µg/L at HP-13 and HP-14 and < 20 µg/L at HP-11). TCE concentrations from shallow hydropunch samples and TMW-36B ranged from non-detect (<0.17 µg/L to <8.5 µg/L) to an estimated concentration 0.81 µg/L indicating the shallow groundwater in the upper clayey sand/silty sand portion of the Basal Transmissive Zone exhibited little or no TCE impact.

Additional investigation is proposed on the Harmon property south of the Site boundary (i.e. south of TMW-36). Harmon has received notification of the potential for groundwater impact along the subject property boundary and discussions regarding access have commenced with Harmon. The subject area that is proposed for investigation consists of paved tractor trailer parking areas on the Phoenix and Harmon properties; therefore, there is no risk to human health and the environment regarding the TCE groundwater impacts currently being assessed. A work plan for the proposed investigation on the Harmon property will be submitted under separate cover after access is secured with Harmon.

An ISCR remediation effort along the south property boundary is anticipated to occur during Spring 2020.

6 Plume Stability

This section includes discussion of trends for individual wells, trends for groups of wells, plume boundaries, a summary of plume stability and estimates of the quantity of TCE in the respective plumes. The discussion and assessment of the plume area are based upon a macro-analysis of the entire plume versus a single well analysis to categorize the plume stability. Individual wells will inherently exhibit variability and fluctuations that will influence perception, inference or modeling of plume boundaries at the time of any given monitoring event. The macro-analysis of the entire data set minimizes the over weighting of any well or data set from a well. Monitoring wells installed after the 2013 RADD was issued by ADEQ are only included in this analysis if they have been sampled a sufficient number of times to establish temporal trends (statistical trend analysis typically requires data from at least four sampling events).

Table 7A and Table 7B presents a historical summary of TCE and degradation products, cis-1,2-DCE and VC concentrations in groundwater samples. These values are used for the analysis of trends described in the remainder of this section.

6.1 Lines of Evidence

Several analytical tools or lines of evidence were used to evaluate plume stability conditions including:

- **Statistical Methods**. Mann-Kendall non-parametric test (Gilbert 1987; USEPA 2000) to calculate the temporal trend in individual well analyte concentrations over time; and
- **Isoconcentration Maps.** Qualitative method to evaluate temporal trends by comparing representations of plume concentration and extent for certain periods over the duration of monitoring.

6.1.1 Statistical Analysis of Temporal Trends

The Mann-Kendall test (Gilbert 1987) is a non-parametric test for linear trend, based on the idea that a lack of trend would be represented by a time series plot fluctuating randomly about a constant mean level, with no visually apparent upward or downward pattern. Because Mann-Kendall is a non-parametric test, it is not dependent upon the magnitude of data, the distribution of the data (does not have to have a normal distribution), missing data from a sampling event or irregularly spaced monitoring events. Mann-Kendall assesses whether a time-ordered data set exhibits an increasing or decreasing trend, at a predetermined level of significance.

The Mann-Kendall statistic is computed by looking at all possible pairs of measurements in the data set and scoring each pair as follows:

- An earlier value lower in magnitude than a later one is assigned a value of 1;
- An earlier value higher in magnitude than a later sample is assigned a value of –1; and
- Two identical values are assigned 0.

The scores from all the pairs are added together to get the Mann-Kendall statistic (S), a positive value of S indicates that a majority of the differences between earlier and later measurements

are positive, which suggests an increasing trend over time. Conversely, a negative value for S implies that a majority of the differences between earlier and later values are negative indicating a decreasing trend. A value near zero indicates a roughly equal number of positive and negative results. This indicates the values have randomly fluctuated around a constant mean with no apparent trend. If the Mann-Kendall test indicates that there is not a statistically significant trend a second test, coefficient of variation (COV), is performed to determine if the trend is stable (COV is less than 1, little variation above and below the mean value) or if no trend exists (COV is greater than 1, high variation above and below the mean value).

The applicable outcomes of the temporal trend analysis are as follows:

- **Increasing**. Statistically significant increasing trend for concentrations (>90% confidence);
- **Stable.** No statistically significant trend for concentrations along with low variability for results (COV <1);
- **No Trend**. No statistically significant trend for concentrations along with high variability for results (COV >1);
- **Decreasing**. Statistically significant decreasing trend for concentrations (>90% confidence);
- **Practical Quantitation Limit (<PQL).** All sample results have a J qualifier (estimated result greater than the method detection limit but less than the reporting limit) or a mixture of non-detects and results with J qualifiers; and
- **Not Detected (ND).** Constituent has not been detected at the well during the time period analyzed.

Only monitoring wells included in the RGWMP or designated replacement wells are included in the temporal trend analysis[3]. The following is the list of wells in each category (this list is only presented for evaluation of plume stability):

- **Northern Plume Wells (28 wells)**. MW-24, MW-27, MW-28, MW-39/39R, MW-40/40R, MW-46R, MW-50/MW-50R, MW-55/55R, MW-56/MW-56R, MW-57/57R, MW-58/58R, MW-60/60R, MW-61/MW61R, MW-62/62R, MW-63/63R, MW-68, RW-69, IW-73, IW-77, IW-78, MW-82, MW-83, MW-84, MW-194, MW-195, MW-196, TMW-10 and TMW-11;
- **Northeast Corner Wells (nine wells)**. MW-87, MW-89, MW-91, MW-96, MW-97, MW-98, MW-99, MW-183/MW-183R and MW-184;
- **Southern Plume Wells (29 wells)**. ITMW-1/ITMW-1R, ITMW-2/ITMW-2R, ITMW-5, ITMW-7, ITMW-9, ITMW-10, ITMW-16, ITMW-18, ITMW-19, ITMW-20, ITMW-21, MW-22, MW-24, MW-25/MW-25R, MW-26, MW-29, MW-38, MW-85/MW-85R, MW-93, MW-

[3] Trend analysis was performed for the network of monitoring wells in the ADEQ approved RGWMP. Trend analysis utilizing old data from monitoring wells not in the ADEQ approved RGWMP is not appropriate. Monitoring wells not currently monitored as part of the ADEQ approved RGWMP still exist and could be utilized in the future, if warranted.

95, MW-182, MW-185, MW-186, MW-187, MW-188, MW-189, MW-190, MW-191 and MW-192; and

- **Source Area Wells (seven wells)**. ITMW-18, ITMW-19, MW-25/MW-25R, MW-38, MW-85/MW-85R, MW-93 and MW-95.

Contaminant concentration trends as established during the annual monitoring event are summarized below:

- **Northern Plume Wells (28 wells).** The Mann-Kendall trend analysis utilizes data from all wells associated with the 2019 annual groundwater monitoring event for the northern plume (Table 8). As described in more detail below, our determination that a majority of the wells exhibit little or no TCE or a decreasing or stable TCE concentration trend is based on the fact that 79% (22 of 28 wells) of these wells exhibit either little or no TCE or a decreasing or stable TCE concentration trend.

  The trend analysis for the 28 wells associated with monitoring the northern plume indicates the following:

  - Three wells exhibit a stable trend for TCE concentrations (MW-46R, IW-73 and MW-194).
  - Ten wells exhibit a decreasing trend for TCE concentrations (MW-24, MW-28, MW-58/58R, MW-63/63R, RW-69, IW-77, IW-78, MW-83, TMW-10 and TMW-11).
  - Seven wells exhibit no trend regarding TCE concentrations according to the statistical test (MW-27, MW-39R, MW-60R, MW-62R, MW-68, MW-82 and MW-84). TCE concentrations in six out of seven of these wells consisting of MW-27, MW-39R, MW-60R, MW-62R, MW-68 and MW-84 have been non-detect or TCE has been detected at very low concentrations (less than a concentration of 2.4 µg/L since September 2014). MW-82 is the seventh well exhibiting no trend and TCE concentrations have ranged from approximately 4 µg/L to 60 µg/L during the last five years of monitoring.
  - Three wells exhibit TCE concentrations below detection limits or below reporting limits (MW-40, MW-195 and MW-196).
  - Five wells exhibit an increasing trend for TCE concentrations (each of which is discussed below) (MW-50R, MW-55R, MW-56R, MW-57R and MW-61R). However, MW-50R exhibited a TCE concentration less than 1 µg/L.

  TCE concentrations in nine of the 28 northern plume wells (31%) have been non-detect or less than a concentration of 2.4 µg/L since September 2014 and 13 of the 28 wells (46%) have exhibited decreasing or stable trends; therefore, 22 of the 28 northern plume wells (79%) exhibit either little or no TCE or a decreasing or stable TCE concentration trend. We believe that this supports our plume stability conclusions.

  As noted, TCE concentration trends are increasing in five of 28 (18%) of the wells (MW-50R, MW-55R, MW-56R, MW-57R and MW-61R). Further, of the five wells located in the northern plume with increasing TCE concentration trends:

  - As noted above, the TCE concentration in MW-50R is less than 1 µg/L.
  - The TCE concentration at MW-55R increased to 27.7 µg/L. The occurrence of TCE concentrations exceeding the RAL at MW-55R are mitigated based on the analytical results for down-gradient wells (MW-50R and MW-60R) and side-gradient and boundary well TMW-35 which exhibit little or no TCE impact. TCE concentrations will continue to be monitored at this location due to the concentration variations observed since November 2010.
  - The TCE concentration of 20.8 µg/L at MW-61R is the highest historical concentration exceeding the previous high of 16.5 µg/L in November 2015. ISCR treatment areas were completed in the summer of 2018 to address TCE impacts in groundwater at plume boundary wells including MW-61R. During the recent December 2019 ISCR event MW-61R was redeveloped and resampled to confirm representative water quality and for VOC results. The water quality results were similar comparing the October and December 2019 monitoring events and the TCE concentration in the December 2019 sample decreased to 15 µg/L (the results from this sampling effort are provided in the 2019 ISCR Report in Attachment H). The data suggests the ISCR efforts in this area are beginning to reduce TCE concentrations particularly considering the significant TCE concentration reductions in up-gradient wells TMW-10 and TMW-11.
  - During the annual event, the highest concentration of TCE detected in groundwater samples from the offsite wells was 649 µg/L collected from MW-56R. This is a decrease from 803 µg/L at MW-56R in April 2019 and the lowest concentration since November 2016 (408 µg/L). Concentrations are lower up gradient at MW-46R at 560 µg/L. Variations are expected to continue in TCE concentrations within the north plume and monitoring will continue in MW-56R and in up-gradient (MW-46R) and down-gradient wells (TMW-14). There are sufficient down-gradient monitoring locations to evaluate conditions and there is a down-gradient treatment zone at the eastern extent of the north plume just west of Jenny Lind Road.
  - The TCE concentration at MW-57R of 317 µg/L is the second lowest concentration since April 2015. TCE concentrations and trends will continue to be monitored at this well.

- **Northeast Corner Wells (nine wells).** Three wells (MW-87, MW-89 and MW-91) located on Whirlpool property in the area of the northeast corner plume and six wells (MW-96 through MW-99, MW-183 and MW-184) located on Boys and Girls Club property further to the northeast have been sampled at least ten times between June 2014 and October 2019.
  - TCE concentrations in MW-87 and MW-89 are stable and decreasing, respectively. Although, the TCE concentrations in MW-87 are reported to be stable (according to the Mann-Kendall statistical test) the TCE concentrations have been consistently decreasing from 948 µg/L in November 2016 to the current 315 µg/L concentration.

- The overall TCE concentration trends are increasing at MW-91. During this event, MW-91 exhibited a TCE concentration of 437 µg/L which is the lowest concentration since January 2016 (was also 437 µg/L in November 2018). MW-91 was resampled in December 2019 for ISCR baseline and the TCE concentration was 331 µg/L, the lowest concentration since January 2015. Overall, monitoring event concentrations have ranged from 317 µg/L (in January 2015) to 605 µg/L (in April 2017). TCE concentration have been addressed with the installation of ISCR treatment zones up-gradient and down-gradient of MW-91. Further discussion of the remediation performed at this location is presented in the 2019 ISCR Report (Attachment H).
- TCE concentrations in MW-96 through MW-98 and MW-184 on the Boys and Girls Club property continue to be below detection limits (i.e. less than 0.17 µg/L) except low concentrations of 0.45 µg/L during April 2017 at MW-184.
- The overall TCE concentration trends are increasing at MW-98. However, the concentration continues to remain at low levels ranging from non-detect to and the current estimated concentration of 0.38 µg/L since January 2015. TCE concentrations and trends will continue to be monitored at this well.
- The TCE concentration during the 2019 annual event at MW-183R was 1.2 µg/L. The TCE concentration trend is decreasing at MW-183R with concentrations ranging from and estimated concentration of 0.54 µg/L in April 2019 event to 5.3 µg/L in November 2016 (first and only exceedance of 5 µg/L). TCE concentrations and trends will continued to be monitored at this well.
- The overall TCE concentration trends are increasing at MW-99. The TCE concentration at MW-99 has ranged from below detection limits (less than 0.17 µg/L) to the current concentration of 72.6 µg/L (note that MW-99 was resampled in December 2019 for ISCR baseline and the TCE concentration was 59.3 µg/L). This is the third consecutive event that TCE levels have exceeded the RAL in MW-99. This condition has been addressed with the installation of ISCR treatment zones at MW-99 and up-gradient at MW-91. Further discussion of the remediation performed at this location is presented in the 2019 ISCR Report (Attachment H). A work plan for supplemental investigation in the area of MW-99 was submitted to ADEQ on December 19, 2019, and approved in an ADEQ response letter dated January 14, 2020.

- **Southern Plume Wells (29 wells).** As described in more detail below, our determination that a majority of the wells exhibit little or no TCE or a decreasing or stable TCE concentration trend is based on the fact that 21 of 29 (72%) of the southern wells exhibit either little or no TCE or a decreasing or stable TCE concentration trend. The trend analysis for the 29 wells associated with monitoring the southern plume indicates the following:
  - Three wells exhibit a stable trend for TCE concentrations (ITMW-10, MW-38 and MW-95).

- Nine wells exhibit a decreasing trend for TCE concentrations (ITMW-1R, ITMW-7, ITMW-16, ITMW-18, ITMW-19, ITMW-21, MW-24, MW-93 and MW-182).
- Seven wells, consisting of ITMW-9, ITMW-20, MW-25R, MW-26, MW-85R, MW-191 and MW-192 exhibit no trend regarding TCE concentrations; although TCE concentrations at four of the wells (ITMW-20, MW-26, MW-191 and MW-192) have been non-detect or less than an estimated 1 µg/L since October 2011. The concentration of 2,810 µg/L at ITMW-9 is the third event of a substantial increase and a historical high concentration. TCE concentrations and trends will continue to be monitored at this well. MW-25R and MW-85R are source area wells and are discussed below.
- Five wells exhibit TCE concentrations below reporting limits (ITMW-2R, MW-22, MW-29, MW-188 and MW-190).
- Five wells (ITMW-5, MW-185, MW-186, MW-187 and MW-189) exhibit increasing TCE concentration trends (see further discussion below).

As noted, TCE concentration trends are statistically increasing in five of the 29 (17%) southern plume wells (ITMW-5, MW-185, MW-186, MW-187 and MW-189) and of these wells the following observations can be made:

- The TCE concentration at ITMW-5 of 3,700 µg/L is a historical high concentration. The previous historical high was 3,660 µg/L during April 2019. TCE concentrations and trends will continue to be monitored at this well.
- The TCE concentration at MW-185 of 52.7 µg/L is a historical high concentration. ISCR remediation was conducted approximately 60 feet down-gradient of this well in August 2018. TMW-34, located down-gradient east of the ISCR remediation provides further plume definition in this area. The TCE concentration at TMW-34 was 17.6 µg/L in October 2019. During the recent December 2019 ISCR event TMW-34 was redeveloped and resampled to confirm representative water quality and VOC results. The TCE concentration in the December 2019 sample increased to 26.7 µg/L. The water quality results were similar comparing the October and December 2019 monitoring events; although, the redox potential increased from -70.9 to -21 comparing the October and December 2019 data. Water quality and analytical data values from this effort are included in the 2019 In-Situ Chemical Reduction Event Report (2019 ISCR Report) in Attachment H. Further monitoring at this location is needed to fully evaluate ISCR effectiveness and to assess if the plume boundary is potentially at risk for expansion.
- The TCE concentration of 2.9 µg/L in MW-186 is the lowest concentration since 1.2 µg/L in October 2015. ISCR remediation was conducted in the vicinity of this well and is discussed in Attachment H.
- The TCE concentration at MW-187 of 3.5 µg/L is a historical high concentration and third consecutive monitoring event increase. TCE concentrations and trends will continue to be monitored at this well.

  - The TCE concentration at MW-189 has ranged from 2.4 µg/L (September 2015) to 670 µg/L (November 2018). A supplemental groundwater investigation was completed at the southern Site property boundary during November 2019 and is discussed in Section 5 of this report. In addition, ISCR injections will be performed along the southern property boundary in the vicinity of TMW-36 (down-gradient of MW-189 and TMW-19) in accordance with the 2019 Action Plan. Modifications to the 2019 Action Plan are anticipated following further evaluation of the results of the November 2019 supplemental investigation presented in Section 5.

- **Source Area Wells (seven wells).** The source area wells showed predominantly decreasing or stable concentration trends for TCE. Three wells (ITMW-18, ITMW-19 and MW-93) exhibited decreasing TCE concentrations and two wells (MW-38 and MW-95) exhibited stable TCE concentrations. Two wells exhibit no trend regarding TCE concentrations (MW-25/MW-25R, MW-85 and MW-85R). These wells were replaced in 2019 and the new well locations exhibited significantly different TCE concentrations from the previous monitoring events. The TCE concentration at MW-25 was 94,300 µg/L during the November 2018 monitoring event and the TCE concentration at MW-25R was 5,410 µg/L during the October 2019 monitoring event. The TCE concentration at MW-85 was 678 µg/L during the last monitoring event for this well in May 2016 and the TCE concentration at MW-85R was 68,300 µg/L (74,500 µg/L in the duplicate sample) during the October 2019 monitoring event. Continued monitoring at MW-25R and MW-85R is appropriate to continue to assess trends at these locations. In addition, a new monitoring well will be installed between IW-147 and IW-155 in a response letter to ADEQ dated December 19, 2019. MW-25R, MW-85R and the new well will each be in proximity.
- In addition, cis-1,2-DCE concentrations in three wells exhibited decreasing concentrations (ITMW-18, ITMW-19 and MW-93), two wells exhibited stable cis-1,2-DCE concentrations (MW-38 and MW-85R), no cis-1,2-DCE concentration trend in one well (MW-25R) and an increasing cis-1,2-DCE concentration in one well (MW-95).

6.1.2 Isoconcentration Maps

Figures 3A and 3B show isoconcentration lines at the north, northeast and southern plumes for the 2019 annual event. Notable changes in the north plume boundaries on Figure 3A consist of:

- TCE concentration of 20.8 µg/L in MW-61R causing the inferred 5 µg/L TCE isoconcentration line to extend slightly further north;
- TCE concentration of 7.4 µg/L in MW-63R (increase from 4.1 µg/L) causing the 5 µg/L TCE isoconcentration line to extend further south; and
- TCE concentration of 27.7 µg/L in MW-55R (increase from 10.9 µg/L) causing the 5 µg/L TCE isoconcentration line to extend slightly further west.

Notable changes in the northeast plume boundaries on Figure 3A consist of:

- TCE concentration of 72.6 µg/L at MW-99 (increase from 23.6 µg/L) causing the 5 µg/L TCE isoconcentration line to extend further east.

Notable changes in the south plume boundary on Figure 3B consist of:

- The TCE concentration of 42.9 µg/L at TMW-26 decreased from 128 µg/L in April 2019 which removed the 100 µg/L TCE isoconcentration line that was previously mapped and restricted the 5 µg/L TCE line. Section 7 discusses the ISCR treatment zone completed for the southwest plume in the vicinity of TMW-26 which impacted the TCE concentration at this location.
- The TCE concentration of 2.9 µg/L at MW-186 decreased from 5.6 µg/L in April 2019 which restricted the 5 µg/L TCE line. Section 7 discusses the ISCR treatment performed in the vicinity of MW-186 which impacted the TCE concentration at this location.
- Increased TCE concentrations at MW-189 and TMW-36 and TCE concentrations from the hydropunch samples detailed in Section 5 has moved the 100 µg/L and the inferred 5 TCE µg/L isoconcentration lines further east (Figure 4 presents the locations of the hydropunch samples). The ISCR injections detailed in the 2019 Action Plan and additional supplemental investigation being planned south of TMW-36 and the 2019 Hydropunch samples are currently being assessed. This area will continue to be monitored to assess if the plume boundary is potentially at risk for expansion.

6.2 Summary of Plume Stability

The aerial extent for the north and northeast plumes remains predominantly within the bounds of the historical maximum plume extent with slight extension of the plume at MW-61R, MW-63R and MW-99. The aerial extent of the southern plume remains predominately within historical bounds (since installation of temporary wells) with expansion east and south of TMW-36.

The site-wide groundwater conditions can be categorized as three separate plumes with distinct characteristics (i.e. the north plume and northeast plume, the south plume).

The northern plume is characterized by:

- A north-northeast potentiometric gradient that is flat in the south portion of the north plume but steepens to north-northeast;
- TCE concentrations, from the southwest to the northeast, generally less than 200 µg/L in the southwest up-gradient area, trending to a central plume area with more elevated concentrations exceeding 600 µg/L, then decreasing concentrations down-gradient at the ISCR treatment zones with one area, MW-61R exceeding 5 µg/L at the down-gradient site boundary; and
- An aerial extent of approximately 524,550 ft^2 located north of the Whirlpool property (containing the manufacturing building) and extending to the residential area to the north-northeast.

The northeast plume is characterized by:

- An east, northeast potentiometric gradient.
- TCE concentrations generally between 5 and 450 µg/L.

- An aerial extent of approximately 261,650 ft^2 located northeast of the Whirlpool building and extending to the adjacent offsite property. Offsite groundwater TCE concentrations in monitoring wells are below the RALs (excluding the TCE concentration detected at MW-99).

The southern plume is characterized by:

- A multi-directional potentiometric surface gradient with three trends:
  - A relatively flat south, southeast gradient from the source area at the northwest corner of the building;
  - An easterly-northeast gradient at the southeast portion of the building; and
  - A southwestern component where the gradient increases to the southwest in the southern section of the plume.
- Source area (Area 1) TCE concentrations greater than 10,000 µg/L.
- An aerial extent of approximately 1,265,600 ft^2 (much of which is located under the footprint of the Whirlpool building).

6.3 TCE Mass Estimate

Estimated average minimum and maximum quantities of TCE in groundwater were calculated for the Site using the results of the annual event (north, northeast and south plumes). The distinction between the north and south groundwater plumes is identified based upon the consistent groundwater divide north of the Whirlpool manufacturing facility and south of Ingersoll Avenue and the reduction or elimination of TCE in groundwater near the hydraulic barrier. The quantity of TCE calculations are based on separating the north and south plumes at the hydraulic divide at the location of MW-24 (Figures 3A and 3B). The quantity of TCE in the northeast plume is also included in the calculations.

The estimated quantities of TCE included calculation of the volume of groundwater based upon the distinct areas within the plumes (i.e. area of plume within the isoconcentration lines on Figures 3A and 3B) and average saturated thickness and total porosity (i.e. area x average saturated thickness x porosity = volume of water). The volume of water and minimum and maximum TCE concentrations based upon the plume boundaries were used to calculate the mass of TCE within each section of the plume. The volume of TCE was then determined based upon the specific gravity of TCE. Parameters used in the calculation of TCE quantities are presented below. Calculations are presented in Attachment E.

North plume parameters:

- Plume area of approximately 524,550 ft^2 consisting of 272,000 ft^2 for the portion of the plume with TCE concentrations ranging from 5 µg/L to 100 µg/L; 252,550 ft^2 for the portion of the plume with TCE concentrations ranging from 100 µg/L to 1,000 µg/L and no portion of the plume exhibiting TCE concentrations greater than 600 µg/L (the north plume delineation has been refined to reflect additional data resulting from the

installation of temporary monitoring wells TMW-12 through TMW-15 and TMW-20, TMW-21, TMW-22A, TMW-22, TMW-23, TMW-24, TMW-29 and TMW-35);

- Average saturated thickness of 3.7 feet;
- Total porosity of 0.4; and
- TCE specific gravity of 1.465.

South plume parameters:

- Plume area of approximately 1,265,600 ft^2 consisting of approximately 549,700 ft^2 for the portion of the plume with TCE concentrations ranging from 5 µg/L to 100 µg/L; 375,600 ft^2 for the portion of the plume with TCE concentrations ranging from 100 µg/L to 1,000 µg/L; 312,950 ft^2 for the portion of the plume with TCE concentrations ranging from 1,000 µg/L to 10,000 µg/L and 27,350 ft^2 for the portion of the plume with TCE concentrations greater than 10,000 µg/L (the southern plume delineation has been refined to reflect additional data resulting from the installation of temporary monitoring wells TMW-16 through TWM-19) and (TMW-25 through TMW-28,TMW-30, TMW-32, TMW-34 and TMW-36);
- Average saturated thickness of 8.3 feet;
- Total porosity of 0.4; and
- TCE specific gravity of 1.465.

Northeast plume parameters:

- Plume area of approximately 261,650 ft^2 consisting of an estimated 176,150 ft^2 for the portion of the plume with TCE concentrations ranging from 5 µg/L to 100 µg/L and 85,500 ft^2 for the portion of the plume with TCE concentrations ranging from 100 µg/L to 1,000 µg/L;
- Average saturated thickness of 4.4 feet;
- Total porosity of 0.4; and
- TCE specific gravity of 1.465.

Based on the plume information listed above, the following ranges of the quantities of TCE distributed throughout the respective plumes were calculated:

PLUME LOCATION	CALCULATED MINIMUM VOLUME	CALCULATED MAXIMUM VOLUME
North Plume	Less than 1 gallon	2 gallons
South Plume	11 gallons	34 gallons
Northeast Plume	Less than 1 gallon	1 gallon

The total average minimum and maximum quantities of TCE in groundwater associated with the Site are approximately 11 to 34 gallons of TCE.

7 ISCR Remedial Effectiveness

This section summarizes the results for the ISCR injection efforts conducted in 2018 and December 2019. The details for these ISCR events are provided in the 2019 ISCR Report (Attachment H).

The 2019 ISCR injection event was performed December 6-8, 2019, at the former Whirlpool site in Fort Smith, Arkansas. The specific injection locations for this event occurred at the northeast parking lot and on the 6427 Jenny Lind Road property. This ISCR injection event included injection of approximately 5,760 gallons of reagent solution containing 4,468 pounds of ZVI, 365 pounds of nutrient, 1,525 pounds of hydrolyzed kelp, 3,625 pounds of calcium propionate, 480 pounds of sodium sulphite, 7,352 pounds of Provect-IR, 365 pounds of yeast extract, 487 pounds of magnesium hydroxide, 114 gallons of anti-methanogenic reagent (AMR) compound, 495 grams of Vitamin B12 and 3,435 grams of Vitamin B2. The reagent solution was injected into the saturated zone at 20 injection points in the northeast parking lot and 17 injection points on the property at 6427 Jenny Lind Road property. The ISCR technology combines abiotic chemical reduction and anaerobic bioremediation for the treatment of chlorinated VOCs (cVOCs) in groundwater. These physical, chemical and biological processes combine to produce a reducing environment in the saturated zone stimulating chemical and microbiological dechlorination of TCE. ISCR reagents are typically effective for timeframes of years; therefore, the evaluation of data associated with this supplemental injection is anticipated to continue for a similar period of time.

A summary of the field and analytical monitoring data is discussed below:

- Field water quality parameters, field observations and analytical data indicate that the ISCR reagent continues to impact the majority of monitoring wells within the radius of influence of the ISCR reagent injections.
- During both the 2018 and 2019 injection events, the ORP measured values decreased and specific conductivity levels increased at the majority of the wells monitored. Both changes indicate the ISCR reagent reached or impacted the groundwater at the respective monitoring wells.
- At the majority of the wells monitored for the 2018 ISCR injection event approximately 450 days post injection, the ORP measured values continue to be reducing and the DO measured values remained within the reducing range and specific conductivity levels remained elevated. This indicates the geochemistry is ideal for the reductive process to continue.
- Significant concentrations of total iron, sulfate, TOC, DOC, methane and VFA (acetate, propionate, butyrate and pyruvate) continue to be detected in the ISCR monitoring wells (directly affected by the 2018 injections) approximately 450 days following ISCR injections compared to the baseline, 90 day and 245 day data indicating geochemistry is ideal for the reductive process to continue.

- The increase in cis-1,2-DCE concentrations in the majority of monitoring wells in comparison to baseline levels indicate that the ISCR injection enhanced reductive dechlorination in the groundwater.
- In the MW-61R treatment zone, the TCE concentration decreased from 91.1 µg/L to 8.6 µg/L at TMW-10 (91% decrease in concentration). MW-61R is the only monitoring well that has had a marginal increase in TCE concentration since the ISCR injections; although the TCE concentration in MW-61R decreased from 20.8 µg/L in October 2019 to 15 µg/L in December 2019 after redeveloping the well). The increased reductive conditions now present up-gradient of MW-61R at TMW-10 and TMW-11 are anticipated to effect groundwater chemistry over the next several months ultimately resulting in a reduction in TCE concentrations in MW-61R as has occurred in the past.
- TCE concentration reductions in the north plume treatment zone ranged from 19% to 96%, approximately 450 days after ISCR reagent injections which is indicative of enhanced reductive dechlorination in the groundwater. The sum of TCE concentrations decreased in the wells monitored by 83% in this area approximately 450 days after ISCR reagent injections compared to baseline concentrations.
- TCE concentration reductions in the south plume treatment zone ranged from 55% to 99%, approximately 450 days after ISCR reagent injections which is indicative of enhanced reductive dechlorination in the groundwater. The sum of TCE concentrations decreased in the wells monitored by 93% in this area approximately 450 days after ISCR reagent injections compared to baseline concentrations.

8 Bench Scale Treatability Study Sampling

Soil and groundwater samples were collected from Area 1 during the week of November 18, 2019, for the treatability study (Figure 1). The Bench Scale Treatability Study Work Plan was submitted to ADEQ on September 16, 2019. A response to an ADEQ comment letter dated October 4, 2019, regarding the work plan was submitted on November 13, 2019.

The objectives of the treatability study are as follows:

- Assess optimum site geochemistry for reductive dechlorination (pH, ORP etc.) (pH has also been assessed as described in the Recovery Well Installation Work Plan);
- Assess which additives may be required to establish and maintain optimum reductive conditions;
- Assess how residual concentrations of sulfate from previous ISCO events may affect future ISCR processes; and
- Assess optimum dosage requirements for the ISCR reagents for the Site.

Soil for the bench scale testing was collected using direct push drilling methods at SBTS-1 from 22-27 feet bgs within the saturated zone in Area 1 where historical TCE concentrations are elevated generally near the location of the former drainage feature. SBTS-1 is located in the vicinity of LDB-11 and IW-141 (abandoned in June 2019), near the location of the historic high soil concentration of TCE collected at soil probe DP-08, at a depth of 22 to 27 feet bgs (LDB-11 was performed at DP-08) (Figure 1). The soil boring log for SBTS-1 is provided in Attachment F. Groundwater for the bench scale testing was collected from IW-147 using low flow sampling methods.

Treatability study soil and groundwater samples were submitted to SiRem in Ontario, Canada, for analysis. As of this report, laboratory analyses for the treatability study have not been completed. Results of the treatability study will be presented in a separate stand-alone report following receipt of laboratory results.

9 Summary and Conclusions

Ramboll performed investigation, maintenance and remediation efforts at the Site in 2019 consisting of:

- Investigation in residential area north of the site and along the south property boundary of the Site;
- Well abandonments, replacement well installations and well maintenance in June 2019, September 2019 and November 2019 primarily due to pavement replacement projects performed by the current owner of the property (Phoenix) along the north side of the former Whirlpool building;
- Semi-annual and annual groundwater and indoor air monitoring events in April and October 2019, respectively;
- Additional south plume groundwater investigation along the south property boundary based on the TCE concentrations detected at TMW-36 consisting of hydropunch groundwater samples collected in November 2019;
- Recovery well installation (RW-1), free product assessment and aquifer testing within Area 1 at the location of a former large diameter boring (LDB-11) in November and December 2019;
- Treatability testing sample collection was performed in November 2019 and treatability testing to further assess pH modifications in groundwater and ISCR reagent effectiveness is underway; and
- ISCR injections were performed in December 2019 at the northeast corner of the Site and on the 6427 Jenny Lind Road property immediately east of the northeast corner of the Site.

The 2019 annual groundwater monitoring event was completed in October 2019. The results of the annual groundwater monitoring event indicate the following:

- The direction of the hydraulic gradient continues to be influenced by a hydraulic divide located just north of the Whirlpool building with groundwater flow directions predominantly to the northeast and south on either side of the general divide.
  - Groundwater north of the divide is flowing in a northeasterly direction; and
  - Groundwater south of the divide is flowing in a southern/southeasterly direction with another divide trending southwesterly and southeasterly/south of the former manufacturing building.
- The site-wide groundwater conditions can be categorized as three separate plumes with distinct characteristics (i.e. the southern plume, the north plume and northeast plume).
  - The south plume is characterized by:
    - A relatively flat south/southeast potentiometric gradient with a southwestern gradient in the southern section of the plume;

    - Source area (Area 1) TCE concentrations greater than 10,000 µg/L; and
    - An aerial extent of approximately 1,265,600 ft^2 (predominately located under the footprint of the former Whirlpool building).
  - The north plume is characterized by:
    - A north-northeast potentiometric gradient that is flat in the south portion of the north plume but steepens to north-northeast;
    - TCE concentrations generally between 100 and 600 µg/L; and
    - An aerial extent of approximately 524,550 ft^2 located north of the former Whirlpool property and extending to the residential area to the north-northeast.
  - The northeast plume is characterized by:
    - An east, northeast potentiometric gradient;
    - TCE concentrations generally between 5 and 450 µg/L; and
    - An aerial extent of approximately 261,650 ft^2 located northeast of the former Whirlpool building and extending to property owned by the Boys and Girls Club. Offsite groundwater TCE concentrations in monitoring wells are below the RALs (excluding the most recent TCE concentrations detected at MW-99).
- The combination of chemical and geochemical data from 2019 are similar to the data generated from 2014 through 2018. The VOC results demonstrate that reductive dechlorination is occurring in multiple locations in the plume.

Groundwater monitoring results in the vicinity of the ISCR injection locations (450 day post ISCR injection) indicate the following:

- The sum of TCE concentrations in the north plume decreased in the wells monitored by 83% in this area approximately 450 days after ISCR reagent injections compared to baseline concentrations.
- The sum of TCE concentrations in the south plume decreased in the wells monitored by 93% in this area approximately 450 days after ISCR reagent injections compared to baseline concentrations.
- In the MW-61R Treatment Zone, the TCE concentration decreased from 91.1 µg/L to 8.6 µg/L at TMW-10 (91% decrease in concentration). MW-61R is the only monitoring well that has had a marginal increase in TCE concentration since the ISCR injections; however, the increased reductive conditions now present up-gradient of MW-61R at TMW-10 are anticipated to effect groundwater chemistry over the next several months ultimately resulting in a reduction in TCE concentrations in MW-61R as has occurred in the past.
- The success of the ISCR injection efforts are anticipated to be further evident after receipt and assessment of the 2020 Semi-Annual Event groundwater monitoring data.

- Vapor intrusion monitoring continues to identify that risk estimates for vapor intrusion from groundwater in the neighborhood are below ADEQ's risk management limits of 10-4 and 1 for cumulative cancer risk and non-cancer hazards, respectively (see Attachment B).
- Based upon the indoor air and sub-slab vapor samples collected during 2019 after building renovations were completed, a potential complete exposure pathway may exist in the vicinity of the northwest portion of the former Whirlpool building (based upon indoor air TCE concentrations which exceed screening levels but remain below ADEQ risk management limits of 10-4 and 1 for cumulative cancer risk and non-cancer hazards, respectively). The significance of the potential exposure pathway and the need for remedial or protective measures, if any will continue to be monitored and assessed.

The investigation and monitoring activities at the site have not identified any complete exposure pathways in the residential area (i.e. direct exposure, consumption or vapor intrusion). Given the current deed restrictions for the Whirlpool property and impacted offsite properties, there is no unacceptable risk to human health or the environment. Deed restrictions precluding the use of groundwater and access agreements to facilitate future investigation or monitoring, if required, apply where groundwater impacts have been characterized in the residential area.

Monitoring at the site will continue in accordance with the RGWMP with the next groundwater monitoring event planned to occur in Spring 2020.

Whirlpool is evaluating additional efforts (additional southern investigation and completion of treatability testing for supplemental remediation activities) to support the work already completed. Whirlpool anticipates meeting with ADEQ to present the proposed plans for supplemental remediation activities followed by submittal of respective work plans to implement supplemental remediation activities to ADEQ for review and approval during the second quarter of 2020.

Monitoring at the site will continue in accordance with the RGWMP with the next groundwater monitoring event planned to occur in Spring 2020.

A five year technical review is appropriate following or coinciding with the 2021 Annual Report (i.e. five years after implementation of the RGWMP in 2016). The five year technical review should assess the current conceptual site model, update fate and transport concepts and assess investigation and remediation efforts summarized in the respective annual reports after 2016 through 2021.

10 References

2014 - Dissolved Gas Sampling Guidance; Microseeps Inc; http://www. microseeps. com/ html/dissolved_gas. html

ADEQ (2013). Remedial Action Decision Document for Corrective Action. Whirlpool Corporation, Sebastian County, Arkansas, AFIN 66-00048. December 27.

USEPA, 1998. "Technical protocol for evaluating natural attenuation of chlorinated solvents in groundwater" Office of Research and Development, USEPA/600/R-98/128.

USEPA, 2011. "An approach for evaluating the progress of natural attenuation in groundwater," Office of Research and Development, USEPA/600/R-11/204.

Gilbert, 1987. Gilbert, R. O. Statistical Methods for Environmental Pollution Monitoring, Wiley, NY.

Löffler, F, Yan, J., Ritalahti, K., Adrian, L., Edwards, E., Konstantinidis, K., Muller, J., Fullerton, H., Zinder, S. and Spormann, A., 2013. Dehalococcoides mccartyi gen. nov., sp. nov., obligately organohalide-respiring anaerobic bacteria relevant to halogen cycling and bioremediation, belong to a novel bacterial class, Dehalococcoidia classis nov., order Dehalococcoidales ord. nov. and family Dehalococcoidaceae fam. nov., within the phylum Chloroflexi. International Journal of Systematic and Evolutionary Microbiology, 63, 625–635.

Ramboll, 2015. 2014 Remedial Action Effectiveness Report, January.

Ramboll, 2015. Whirlpool Ft. Smith Sentinel Wells, November.

Ramboll, 2016. Onsite Indoor Air and Sub-Slab Soil Vapor Data Report, April 27.

Ramboll, 2016. Onsite Indoor Air and Sub-Slab Soil Vapor Data Report Second Monitoring Event, August 16.

Ramboll, 2016. First Quarter 2016 Progress Report, May.

Ramboll, 2016. Second Quarter 2016 Progress Report, August.

Ramboll, 2016. Two Year Technical Review Report, January.

Ramboll, 2017. 2016 Annual Report, February.

Ramboll, 2017. Action Plan, February.

Ramboll, 2017. Action Plan, July.

Ramboll, 2018. Action Plan, January.

Ramboll, 2018. Action Plan, May.

Ramboll, 2019. Onsite Indoor Air and Sub-Slab Vapor Monitoring Report (April 2019)

Ramboll, 2019. Action Plan, October.

Ramboll, 2019. Well Abandonment and Completion Report, November.

Sublette, K., Peacock, A., White, D., Davis, G., Ogles, D., Cook, D., Kolhatkar, R., Beckmann, D. and Yang, X., 2006. Monitoring Subsurface Microbial Ecology in a Sulfate-Amended, Gasoline-Contaminated Aquifer. Groundwater Monitoring & Remediation, 26: 70–78.

Sutton, N., Grotenhuis, T., Langenhoff, A. and H. Rijnaarts.2011. ”Efforts to improve coupled in situ chemical oxidation with bioremediation: a review of optimization strategies”, Journal of Soils and Sediments 11 (1), 129-140.

Vogel, T., Criddle, C. and McCarty, P., 1987. “ES Critical Reviews: Transformations of halogenated aliphatic compounds”, Environmental Science & Technology 21 (8), 722-736

Tables

TABLE 1
CONSTITUENTS OF CONCERN AND RADD GROUNDWATER REMEDIAL ACTION LEVELS
Whirlpool Facility - Fort Smith, Arkansas

Constituent of Concern	Remedial Action Level (µg/L)[1]
Acetone	12,000[2]
Benzene	5.0
Bromodichloromethane	80
Bromoform	80
Bromomethane	7.0[2]
2-Butanone	4,900[2]
Carbon Disulfide	720[2]
Carbon Tetrachloride	5.0
Chlorobenzene	100
Chloroethane	21,000[2]
Chloroform	80
Chloromethane	190[2]
Dibromochloromethane	80
1,1-Dichloroethane	2.4[2]
1,2-Dichloroethane	5.0
1,1-Dichloroethene	7.0
cis-1,2-Dichloroethene	70
trans-1,2-Dichloroethene	100
1,2-Dichloropropane	5.0
1,3-Dichloropropene	0.41[2]
Ethylbenzene	700
2-Hexanone	34[2]
4-methyl-2-pentanone	1,000[2]
Methylene chloride	5.0
Styrene	100
1,1,2,2-Tetrachloroethane	0.066[2]
Tetrachloroethene (PCE)	5.0
Toluene	1,000
1,1,1-Trichloroethane	200
1,1,2-Trichloroethane	5.0
Trichloroethene (TCE)	5.0
Vinyl chloride	2.0
Xylenes (total)	10,000

Notes:
RADD = Remedial action decision document
µg/L = Micrograms per liter
(1) = Maximum Contamination Level (USEPA, May 2013)
(2) = USEPA Tapwater Screening Level (MCL and Maximum Contaminant Level Goal Unavailable)

TABLE 2A
GROUNDWATER MONITORING WELL NETWORK SAMPLED
FOR ANNUAL EVENTS
Whirlpool Facility - Fort Smith, Arkansas

Plume Boundary Wells				
ITMW-20	ITMW-21	MW-26	MW-29	MW-39R
MW-40R	MW-50R	MW-55R	MW-60R	MW-61R
MW-63R	MW-68	MW-96	MW-97	MW-98
MW-99	MW-183R	MW-184	MW-185	MW-186
MW-187	MW-188	MW-189	MW-190	MW-191
MW-192	MW-194	MW-195	MW-196	
Offsite Wells				
MW-46R	MW-56R	MW-57R	MW-58R	MW-62R
MW-82	MW-182	RW-69	IW-73	IW-77
IW-78				
Onsite Wells				
ITMW-1R	ITMW-2R	ITMW-5	ITMW-7	ITMW-9
ITMW-10	ITMW-16	ITMW-18	ITMW-19	MW-22
MW-24	MW-25R	MW-27	MW-28	MW-38
MW-83	MW-84	MW-85R	MW-87	MW-89
MW-91	MW-93	MW-95		

TABLE 2B
MONITORING WELL INSPECTION (OCTOBER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Well ID	October 2019 Well Condition and Notes	Comments
ITMW-1R	no issues	NA
ITMW-2R	no issues	NA
ITMW-4	no issues	NA
ITMW-5	stickup lid hinge damaged	hinge replaced
ITMW-6	construction debris around well, damaged stickup lid	difficult to access well due to debris, stickup protective cover damaged but provides protection
ITMW-7	no issues	NA
ITMW-9	no issues	NA
ITMW-10	construction debris around well, damaged stickup lid hinge and latch	stickup protective cover provides adquate protection, hinge and latch repaired
ITMW-11	no issues	NA
ITMW-12R	no issues	NA
ITMW-15	no issues	NA
ITMW-16	no issues	NA
ITMW-18	no issues	NA
ITMW-19	no issues	NA
ITMW-20	stickup lid hinge damaged	stickup lid hinge replaced
ITMW-21	no issues	NA
IW-72	no issues	NA
IW-73	missing bolts	replaced bolts
IW-74	no issues	NA
IW-75	no issues	NA
IW-76	no issues	NA
IW-77	no issues	NA
IW-78	no issues	NA
IW-79	no issues	NA
IW-80	missing bolt	replaced bolt
MW-22	no issues	NA
MW-23	no issues	NA
MW-24	no issues	NA
MW-25	no issues	NA
MW-26	no issues	NA
MW-27	no issues	NA
MW-28	no issues	NA
MW-29	no issues	NA
MW-30	no issues	NA
MW-34R	no issues	NA
MW-35R	missing bolts	replaced bolts
MW-36R	no issues	NA
MW-37	missing bolts	replaced bolts
MW-38	no issues	NA
MW-39R	missing bolts	replaced bolts
MW-40R	no issues	NA
MW-41R	missing bolts	replaced bolts
MW-46R	no issues	NA
MW-50R	no issues	NA
MW-55R	no issues	NA
MW-56R	no issues	NA
MW-57R	no issues	NA
MW-58R	no issues	NA
MW-60R	no issues	NA
MW-61R	no issues	NA
MW-62R	no issues	NA
MW-63R	no issues	NA
MW-65R	missing one bolt	replaced bolt
MW-68	no issues	NA
MW-70	no issues	NA
MW-71	missing bolts	replaced bolt
RW-69	no issues	NA
MW-81	no issues	NA

Well ID	October 2019 Well Condition and Notes	Comments
MW-82	missing bolts	replaced bolt
MW-83	no issues	NA
MW-84	no issues	NA
MW-85	no issues	NA
MW-86	no issues	NA
MW-87	no issues	NA
MW-88	missing one bolt	replacement bolt needed
MW-89	no issues	NA
MW-90	missing one bolt	replacement bolt needed
MW-91	no issues	NA
MW-92	missing bolt	bolt replaced
MW-93	no issues	NA
MW-94	no issues	NA
MW-95	no issues	NA
MW-96	no issues	NA
MW-97	no issues	NA
MW-98	no issues	NA
MW-99	no issues	NA
MW-172	broken tab for bolt connection	replaced bolt in broken tab
MW-173	missing one bolt	replacement bolt needed
MW-174	no issues	NA
MW-175	no issues	NA
MW-176	no issues	NA
MW-177	missing bolt	replacement bolt needed
MW-178	cracked well box	NA
MW-179	no issues	NA
MW-180	cracked well box	NA
MW-181	no issues	NA
MW-182	missing one bolt	NA
MW-183R	no issues	NA
MW-184	missing two bolts	bolts replaced
MW-185	no issues	NA
MW-186	no issues	NA
MW-187	missing one bolt	bolt replaced
MW-188	no issues	NA
MW-189	no issues	NA
MW-190	no issues	NA
MW-191	missing tab for bolt connection and bolts	replaced bolts
MW-192	no issues	NA
MW-193	no issues	NA
MW-194	no issues	NA
MW-195	no issues	NA
MW-196	no issues	NA
IW-115	missing one bolt	replaced bolt
TMW-10	no issues	NA
TMW-11	broken j-plug	j-plug replaced
TMW-12	no issues	NA
TMW-14	no issues	NA
TMW-16	no issues	NA
TMW-19	no issues	NA
TMW-20	no issues	NA
TMW-21	no issues	NA
TMW-22R	no issues	NA
TMW-23	missing one bolt	replaced bolt
TMW-24	no issues	NA
TMW-25	no issues	NA
TMW-26	no issues	NA
TMW-27	no issues	NA
TMW-29	missing one bolt	replaced bolt
TMW-30	no issues	NA
TMW-32	no issues	NA
TMW-34	no issues	NA
TMW-35	no issues	NA
TMW-36	no issues	NA

Notes:

NA: Not applicable

RAMBOLL

TABLE 3
SUMMARY OF MONITORING WELL STATIC WATER LEVEL MEASUREMENTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Well Coordinates		Previous TOC Elevation (feet) (if applicable)	TOC Elevation (feet)	Screen Length (feet)	Screened Interval (feet)	Maximum Static Water Elevation (Since Oct 2012)	Maximum Elevation Date	Minimum Static Water Elevation (Since Oct 2012)	Minimum Elevation Date	Static Water Level Elevation (feet)									
	Easting (feet)	Northing (feet)									10/23/2017		4/17/2018		11/13/2018		4/23/2019		10/22/2019	
											DTW	GW Elevation	DTW	GW Elevation	DTW	GW Elevation	DTW	GW Elevation	DTW	GW Elevation
ITMW-1[4]	591383	368913		476.93	13.75	16.50 - 30.25	463.92	10/5/2015	460.26	4/17/2018	15.93	461.00	16.67	460.26	16.40	460.53	16.27	460.66	NA	NA
ITMW-1R	591378	368921		473.82	10.00	19.00-29.00	NA	NA	NA	NA			NA	NA	NA	NA	NA	NA	14.31	459.51
ITMW-2[4]	591189	369021		474.97	14.45	12.75 - 27.20	465.92	10/14/2013	461.87	4/25/2017	12.61	462.36	12.97	462.00	12.59	462.38	12.40	462.57	NA	NA
ITMW-2R	591244	369072		474.84	5.00	26.50-31.50	NA	NA	NA	NA			NA	NA	NA	NA	NA	NA	11.54	463.30
ITMW-3[4]	591306	369075		474.72	14.80	10.65 - 25.45	467.17	10/14/2013	460.27	1/12/2015	NA	NA	13.59	461.13	13.18	461.54	13.01	461.71	NA	NA
ITMW-4	591251	368208		478.19	14.00	18.20 - 32.20	466.85	1/12/2015	459.49	11/13/2018	18.50	459.69	18.69	459.50	18.70	459.49	18.34	459.85	18.02	460.17
ITMW-5	590982	368205		478.93	9.75	19.90 - 29.65	463.22	10/5/2015	454.77	4/22/2013	19.28	459.65	19.40	459.53	19.45	459.48	19.04	459.89	18.70	460.23
ITMW-6	590923	367970		483.04	14.50	21.65 - 36.15	466.20	1/12/2015	454.06	4/22/2013	23.55	459.49	23.53	459.51	23.60	459.44	23.10	459.94	22.86	460.18
ITMW-7	590546	368323		481.95	15.00	21.90 - 36.90	463.65	7/20/2015	457.98	10/14/2013	20.91	461.04	20.31	461.64	20.42	461.53	19.87	462.08	19.82	462.13
ITMW-9	591256	368146		481.90	13.50	19.95 - 33.45	463.29	10/5/2015	455.60	4/22/2013	22.37	459.53	22.54	459.36	22.58	459.32	21.18	460.72	21.91	459.99
ITMW-10	590978	368157		480.84	10.95	22.65 - 33.60	463.17	7/20/2015	457.64	4/22/2013	21.20	459.64	21.31	459.53	21.36	459.48	20.97	459.87	20.61	460.23
ITMW-11	590978	369040		474.07	13.45	15.25 - 28.70	465.82	10/1/2012	459.11	1/12/2015	11.81	462.26	11.33	462.74	10.86	463.21	10.68	463.39	10.11	463.96
ITMW-12[4]	590998	369007		476.67	15.00	15.00 - 30.00	466.49	1/12/2015	462.07	4/25/2017	13.93	462.74	14.22	462.45	13.82	462.85	13.58	463.09	NA	NA
ITMW-12R	591015	369004		474.32	10.00	20.00-30.00	NA	NA	NA	NA			NA	NA	NA	NA	NA	NA	10.65	463.67
ITMW-13[4]	591047	369052		477.79	15.00	14.00 - 29.00	465.10	7/20/2015	462.09	4/25/2017	15.14	462.65	15.38	462.41	14.94	462.85	14.72	463.07	NA	NA
ITMW-14[4]	591098	369056		477.30	14.70	14.80 - 29.50	468.88	10/14/2013	461.08	1/12/2015	14.76	462.54	15.03	462.27	14.62	462.68	14.40	462.90	NA	NA
ITMW-15	590944	369043		474.50	15.00	15.00 - 30.00	465.41	10/1/2012	462.36	4/25/2017	11.50	463.00	11.70	462.80	11.22	463.28	11.09	463.41	10.53	463.97
ITMW-16	590967	369100		478.79	15.00	17.00 - 32.00	468.22	1/12/2015	462.49	3/25/2014	16.12	462.67	16.06	462.73	15.64	463.15	15.45	463.34	14.84	463.95
ITMW-17	590864	369051		477.90	15.00	16.00 - 31.00	466.20	10/14/2013	462.17	4/25/2017	15.62	462.28	15.31	462.59	14.92	462.98	14.69	463.21	NA	NA
ITMW-18	590976	368955		473.55	15.00	15.00 - 30.00	465.03	7/20/2015	458.99	1/12/2015	11.96	461.59	11.17	462.38	10.76	462.79	10.53	463.02	9.98	463.57
ITMW-19	590890	368961		476.25	15.00	16.00 - 31.00	465.94	1/12/2015	462.15	4/25/2017	13.43	462.82	13.73	462.52	13.28	462.97	13.05	463.20	12.52	463.73
ITMW-20	590370	369042		477.87	15.00	14.00 - 29.00	465.23	7/20/2015	462.80	11/7/2016	14.97	462.90	14.47	463.40	14.35	463.52	13.90	463.97	13.87	464.00
ITMW-21	590629	368898		476.52	15.00	16.00 - 31.00	465.12	7/20/2015	461.27	4/22/2013	13.70	462.82	13.35	463.17	13.17	463.35	12.79	463.73	12.52	464.00
MW-22	591853	368913		473.93	15.00	14.00 - 29.00	464.24	10/5/2015	460.57	4/17/2018	12.63	461.30	13.36	460.57	13.07	460.86	12.94	460.99	12.00	461.93
MW-23	590892	369238		475.80	15.00	14.00 - 29.00	465.50	1/12/2015	462.40	4/25/2017	12.83	462.97	12.97	462.83	12.62	463.18	12.38	463.42	11.79	464.01
MW-24	590876	369134		476.39	15.00	18.00 - 33.00	465.35	7/20/2015	462.41	4/25/2017	13.42	462.97	13.57	462.82	13.20	463.19	13.00	463.39	12.40	463.99
MW-25[4]	590743	369006		476.89	15.00	17.00 - 32.00	465.37	7/20/2015	462.46	4/25/2017	13.94	462.95	14.04	462.85	13.65	463.24	13.39	463.50	NA	NA
MW-25R	590747	368986		472.59	5.00	25.00-30.00	NA	NA	NA	NA			NA	NA	NA	NA	NA	NA	9.79	462.80
MW-26	590566	369230		478.05	15.00	18.50 - 33.50	465.56	7/20/2015	463.10	4/25/2017	14.76	463.29	14.48	463.57	14.25	463.80	13.88	464.17	13.54	464.51
MW-27	591077	369226		475.42	15.00	15.00 - 30.00	465.33	7/20/2015	462.39	4/25/2017	12.72	462.70	12.67	462.75	12.25	463.17	12.05	463.37	11.50	463.92
MW-28	591324	369209		470.49	15.00	13.00 - 28.00	465.20	7/20/2015	458.86	1/12/2015	7.77	462.72	8.10	462.39	7.68	462.81	7.50	462.99	6.80	463.69
MW-29	590181	368371		474.91	15.00	16.00 - 31.00	468.30	1/12/2015	461.94	11/7/2016	12.73	462.18	11.57	463.34	11.84	463.07	11.28	463.63	11.54	463.37
MW-30	590579	368432		478.99	15.00	21.00 - 36.00	467.41	1/12/2015	461.81	11/7/2016	17.11	461.88	16.58	462.41	16.61	462.38	16.11	462.88	16.02	462.97
MW-31[4]	590824	369286		476.03	10.00	17.50 - 27.50	464.73	10/13/2014	460.52	1/12/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-31R	590823	369288		475.73	10.00	20.00-30.00	465.13	7/20/2015	463.93	4/13/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-32[1,4]	590909	369279		475.68	10.00	17.00 - 27.00	464.74	10/13/2014	462.59	3/25/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-32R	590908	369282		475.50	10.00	20.50-30.50	465.09	7/20/2015	463.94	4/13/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-33[1,4]	590994	369276		474.88	10.00	15.80 - 25.80	464.76	10/13/2014	462.50	3/25/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-33R	590993	369277		474.60	10.00	19.00 - 29.00	465.19	7/20/2015	463.97	4/13/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-34[1,4]	590932	369336		474.29	10.00	19.50 - 29.50	464.81	10/13/2014	462.68	3/25/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-34R	590911	369339		474.23	7.00	21.50-28.50	465.43	7/20/2015	462.48	4/25/2017	11.21	463.02	11.35	462.88	10.92	463.31	10.69	463.54	10.11	464.12
MW-35R[3]	590994	369333		473.87	10.00	19.50 - 29.50	465.32	7/20/2015	462.33	4/25/2017	10.96	462.91	11.22	462.65	10.69	463.18	10.46	463.41	9.88	463.99
MW-36[1,4]	591079	369329		473.30	15.00	12.00 - 27.00	464.85	10/13/2014	462.71	3/5/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-36R	591078	369328		472.98	9.00	20.00-29.00	465.27	7/20/2015	462.25	4/25/2017	10.12	462.86	10.35	462.63	9.88	463.10	9.63	463.35	9.06	463.92
MW-37	590972	369028		473.57	15.00	15.00 - 30.00	465.39	7/20/2015	462.37	4/25/2017	10.50	463.07	10.83	462.74	10.42	463.15	10.19	463.38	9.64	463.93
MW-38	590960	369040		474.60	15.00	15.00 - 30.00	465.39	7/20/2015	462.35	4/25/2017	11.64	462.96	11.86	462.74	11.35	463.25	11.22	463.38	10.68	463.92
MW-39[1,4]	590833	369421		475.46	10.00	19.50 - 29.50	465.00	1/12/2015	461.61	3/5/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-39R	590840	369429		474.72	5.00	24.50-29.50	465.41	7/20/2015	462.43	4/25/2017	11.69	463.03	11.88	462.84	11.44	463.28	11.20	463.52	10.59	464.13
MW-40[1,4]	590998	369622		473.35	10.00	17.75 - 27.75	464.76	10/13/2014	455.04	10/14/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-40R	591013	369624		473.09	10.00	18.50 - 28.50	465.29	7/20/2015	462.31	4/25/2017	10.17	462.92	10.33	462.76	9.89	463.20	9.65	463.44	9.07	464.02
MW-41[1,4]	591061	369469		472.09	10.00	18.75 - 28.75	464.45	10/13/2014	462.63	3/25/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-41R	591061	369478		471.84	10.00	18.00 - 28.00	465.13	7/20/2015	462.17	10/23/2017	9.67	462.17	9.22	462.62	8.81	463.03	8.56	463.28	7.97	463.87
MW-46R	591472	369609		465.79	5.00	16.60 - 21.60	464.88	7/20/2015	457.50	1/12/2015	2.15	463.64	3.26	462.53	2.92	462.87	2.63	463.16	2.05	463.74

TABLE 3
SUMMARY OF MONITORING WELL STATIC WATER LEVEL MEASUREMENTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Well Coordinates		Previous TOC Elevation (feet) (if applicable)	TOC Elevation (feet)	Screen Length (feet)	Screened Interval (feet)	Maximum Static Water Elevation (Since Oct 2012)	Maximum Elevation Date	Minimum Static Water Elevation (Since Oct 2012)	Minimum Elevation Date	Static Water Level Elevation (feet)									
	Easting (feet)	Northing (feet)									10/23/2017		4/17/2018		11/13/2018		4/23/2019		10/22/2019	
											DTW	GW Elevation	DTW	GW Elevation	DTW	GW Elevation	DTW	GW Elevation	DTW	GW Elevation
MW-50[4]	591415	370213		463.11	10.00	8.00 - 18.00	459.81	10/13/2014	453.92	1/12/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-50R	591415	370210		462.65	5.00	13.00 - 18.00	455.84	7/20/2015	452.67	4/25/2017	7.70	454.95	9.68	452.97	8.33	454.32	9.19	453.46	6.91	455.74
MW-55[1,4]	591291	369893		465.50	5.00	15.50 - 20.50	463.06	10/14/2013	461.59	10/1/2012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-55R	591291	369895		465.30	2.00	19.00 - 21.00	465.06	7/20/2015	462.02	4/25/2017	2.60	462.70	2.78	462.52	1.83	463.47	1.82	463.48	1.24	464.06
MW-56[1,4]	591687	369730		463.22	5.00	14.50 - 19.50	462.55	10/13/2014	456.49	3/25/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-56R	591687	369732		463.17	2.00	18.00 - 20.00	462.47	7/20/2015	459.03	11/7/2016	3.24	459.93	2.95	460.22	2.48	460.69	1.77	461.40	1.41	461.76
MW-57[1,4]	591690	369811		462.90	5.00	14.00 - 19.00	461.14	4/13/2015	457.65	10/1/2012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-57R	591693	369806		462.92	5.00	15.00 - 20.00	462.26	7/20/2015	458.68	11/7/2016	3.22	459.70	1.88	461.04	2.25	460.67	1.54	461.38	1.31	461.61
MW-58[1,4]	591570	369907		462.71	5.00	12.50 - 17.50	462.71	7/28/2014	461.01	1/12/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-58R	591571	369898		465.98	5.00	14.00 - 19.00	464.68	7/20/2015	461.64	4/25/2017	3.82	462.16	3.77	462.21	3.50	462.48	3.07	462.91	2.32	463.66
MW-60[1,4]	591710	370193		460.85	5.00	12.00 - 17.00	458.07	10/13/2014	452.38	4/22/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-60R	591710	370193		460.66	5.00	10.50 - 15.50	459.03	10/22/2019	454.55	4/17/2018	3.27	457.39	6.11	454.55	4.00	456.66	5.16	455.50	1.63	459.03
MW-61[1,4]	592003	370175		459.61	5.00	10.50 - 15.50	453.32	7/28/2014	448.21	3/5/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-61R	591999	370175		459.31	5.00	10.50 - 15.50	456.38	10/5/2015	451.85	4/25/2017	6.55	452.76	7.14	452.17	6.86	452.45	6.30	453.01	5.02	454.29
MW-62[1,4]	591791	369569		464.33	5.00	15.50 - 20.50	464.03	1/12/2015	456.68	3/5/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-62R	591790	369572		464.19	5.00	15.00 - 20.00	461.72	7/20/2015	457.49	4/25/2017	5.35	458.84	5.97	458.22	5.52	458.67	5.11	459.08	3.72	460.47
MW-63[1,4]	591994	369560		463.87	5.00	16.00 - 21.00	461.43	10/13/2014	455.05	4/22/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-63R	591993	369559		463.94	5.00	15.00 - 20.00	462.29	7/20/2015	458.22	4/17/2018	4.02	459.92	5.72	458.22	4.59	459.35	5.00	458.94	2.98	460.96
MW-65[3]	590980	369335		473.91	10.00	19.50 - 29.50	473.57	1/12/2015	462.38	4/25/2017	11.04	462.87	11.18	462.73	10.76	463.15	10.49	463.42	9.91	464.00
MW-66	592280	369855		462.05	5.00	12.60 - 17.60	460.24	7/20/2015	446.54	1/12/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-67	592291	370027		459.01	5.00	9.60 - 14.60	458.42	7/28/2014	449.31	10/13/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-67R	592291	370022		459.16	5.00	12.00 - 17.00	458.96	7/20/2015	456.44	5/2/2016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-68	591173	369815		469.81	10.00	14.00 - 24.00	465.23	7/20/2015	462.36	4/25/2017	6.87	462.94	6.89	462.92	6.18	463.63	6.23	463.58	5.66	464.15
RW-69[3]	591170	369678		470.89	10.00	15.00 - 25.00	464.97	7/20/2015	462.00	4/25/2017	8.36	462.53	8.42	462.47	8.00	462.89	7.74	463.15	7.18	463.71
MW-70	591162	369693		471.53	NA	NA	465.33	7/20/2015	462.38	4/25/2017	8.60	462.93	8.68	462.85	8.27	463.26	8.05	463.48	7.47	464.06
MW-71	591170	369695		471.35	NA	NA	465.35	7/20/2015	461.93	10/23/2017	9.42	461.93	8.51	462.84	8.10	463.25	7.85	463.50	7.29	464.06
IW-72[3]	591056	369590		471.65	10.00	15.00 - 25.00	465.19	7/20/2015	462.11	4/22/2013	8.88	462.77	9.11	462.54	8.57	463.08	8.34	463.31	7.78	463.87
IW-73	591060	369503		471.48	NA	NA	465.29	7/20/2015	462.38	4/25/2017	8.56	462.92	8.70	462.78	8.27	463.21	8.02	463.46	7.44	464.04
IW-74[2,3]	591058	369545		472.06	10.00	15.00 - 25.00	465.26	7/20/2015	462.30	4/25/2017	9.21	462.85	9.39	462.67	8.90	463.16	8.68	463.38	8.11	463.95
IW-75	591072	369605		472.17	NA	NA	465.36	7/20/2015	462.37	4/25/2017	9.22	462.95	9.38	462.79	8.92	463.25	8.69	463.48	8.11	464.06
IW-76	591050	369426		472.26	NA	NA	465.17	7/20/2015	462.21	4/25/2017	9.48	462.78	9.68	462.58	9.22	463.04	8.98	463.28	8.40	463.86
IW-77[2]	591027	369380		473.01	10.00	20.00 - 30.00	465.37	7/20/2015	462.41	4/25/2017	10.03	462.98	10.24	462.77	9.79	463.22	9.55	463.46	8.98	464.03
IW-78	590984	369338		473.49	NA	NA	465.38	7/20/2015	461.77	11/7/2016	10.62	462.87	10.73	462.76	10.30	463.19	10.06	463.43	9.47	464.02
IW-79	591018	369335		473.84	NA	NA	465.39	7/20/2015	462.39	4/25/2017	10.90	462.94	11.06	462.78	10.61	463.23	10.39	463.45	9.80	464.04
IW-80[2,3]	591047	369343		473.30	10.00	20.00 - 30.00	465.21	7/20/2015	462.28	4/25/2017	10.47	462.83	10.65	462.65	10.23	463.07	9.98	463.32	9.40	463.90
IW-101	590930	369201		475.70	5.00	22.90-27.90	464.66	1/6/2016	463.13	11/13/2018	NA	NA	NA	NA	12.57	463.13	12.46	463.24	11.83	463.87
IW-115	591007	369344		473.41	5.00	19.10-24.10	464.64	1/6/2016	462.38	11/7/2016	10.92	462.49	10.93	462.48	9.99	463.42	10.14	463.27	9.54	463.87
IW-129	590989	368977		473.54	5.00	24.55 - 29.55	463.08	5/12/2014	463.08	5/12/2014	NA	NA	NM	NA	NM	NA	NM	NA	NA	NA
IW-130	590924	369186		475.58	5.00	23.38 - 28.38	463.20	5/12/2014	463.20	5/12/2014	NA	NA	NM	NA	NM	NA	NM	NA	NA	NA
IW-131	591006	369339		473.37	5.00	19.72 - 24.72	463.21	5/12/2014	463.21	5/12/2014	NA	NA	NM	NA	NM	NA	NM	NA	NA	NA
IW-132	590835	369040		475.49	5.00	23.00-28.00	NA	NA	NA	NA			NM	NA	NM	NA	NM	NA	11.69	463.80
IW-134	590885	369037		474.22	5.00	23.00-28.00	NA	NA	NA	NA			NM	NA	NM	NA	NM	NA	10.33	463.89
IW-147	590782	368993		473.13	5.00	20.00-25.00	NA	NA	NA	NA			NM	NA	NM	NA	NM	NA	9.32	463.81
MW-81	591039	369406		473.54	5.00	20.00-25.00	465.33	7/20/2015	462.35	4/25/2017	10.63	462.91	10.79	462.75	10.36	463.18	10.11	463.43	9.53	464.01
MW-82	590977	369395		473.60	5.00	21.00-26.00	465.35	7/20/2015	462.36	4/25/2017	10.70	462.90	10.83	462.77	10.43	463.17	10.18	463.42	9.62	463.98
MW-83	590946	369211		475.48	5.00	22.00-27.00	465.25	7/20/2015	462.32	4/25/2017	12.62	462.86	12.79	462.69	12.38	463.10	12.15	463.33	11.60	463.88
MW-84	590882	369194		475.53	5.00	24.00-29.00	466.39	1/6/2016	462.23	4/25/2017	12.73	462.80	12.88	462.65	12.47	463.06	12.27	463.26	11.69	463.84
MW-85[4]	590760	369018		474.41	5.00	25.00-30.00	465.21	7/20/2015	462.24	4/25/2017	11.66	462.75	11.74	462.67	11.36	463.05	11.10	463.31	NA	NA
MW-85R	590769	369015		472.34	5.00	24.50-29.50	NA	NA	NA	NA			NA	NA	NA	NA	NA	NA	8.58	NA
MW-86[4]	590767	368995		473.19	5.00	23.00-28.00	465.10	7/20/2015	462.19	4/25/2017	10.42	462.77	10.60	462.59	10.18	463.01	9.87	463.32	NA	NA
MW-87	592269	368835		470.78	10.00	17.00-27.00	460.91	10/5/2015	457.53	4/17/2018	12.74	458.04	13.25	457.53	13.19	457.59	13.08	457.70	12.51	458.27
MW-88	592151	369043		468.89	10.00	18.00-28.00	462.85	10/5/2015	457.39	4/17/2018	8.48	460.41	11.50	457.39	9.22	459.67	11.18	457.71	8.12	460.77
MW-89	592357	369059		466.91	10.00	15.00-25.00	459.23	10/5/2015	456.47	4/17/2018	10.11	456.80	10.44	456.47	10.39	456.52	10.38	456.53	9.87	457.04

TABLE 3
SUMMARY OF MONITORING WELL STATIC WATER LEVEL MEASUREMENTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Well Coordinates		Previous TOC Elevation (feet) (if applicable)	TOC Elevation (feet)	Screen Length (feet)	Screened Interval (feet)	Maximum Static Water Elevation (Since Oct 2012)	Maximum Elevation Date	Minimum Static Water Elevation (Since Oct 2012)	Minimum Elevation Date	Static Water Level Elevation (feet)									
	Easting (feet)	Northing (feet)									10/23/2017		4/17/2018		11/13/2018		4/23/2019		10/22/2019	
											DTW	GW Elevation	DTW	GW Elevation	DTW	GW Elevation	DTW	GW Elevation	DTW	GW Elevation
MW-90	592157	369157		466.71	10.00	15.00-25.00	464.46	10/23/2017	458.71	4/23/2019	2.25	464.46	7.95	458.76	5.82	460.89	8.00	458.71	4.25	462.46
MW-91	592371	368830		468.90	10.00	15.00-25.00	460.19	10/5/2015	456.92	4/17/2018	11.39	457.51	11.98	456.92	11.90	457.00	11.88	457.02	11.29	457.61
MW-92	590778	368921		473.74	10.00	20.00-30.00	465.29	7/20/2015	462.30	4/25/2017	10.92	462.82	11.03	462.71	10.62	463.12	10.38	463.36	9.85	463.89
MW-93	590908	368894		477.81	10.00	25.00-35.00	465.12	7/20/2015	462.10	4/25/2017	15.12	462.69	15.30	462.51	14.88	462.93	14.63	463.18	13.89	463.92
MW-94	591015	368903		477.86	10.00	25.00-35.00	464.97	7/20/2015	461.93	4/25/2017	15.39	462.47	15.63	462.23	15.22	462.64	14.98	462.88	14.22	463.64
MW-95	590981	368821		477.63	10.00	25.00-35.00	465.01	7/20/2015	461.95	4/25/2017	15.09	462.54	15.32	462.31	14.89	462.74	14.66	462.97	13.89	463.74
MW-96	592775	369354		457.83	5.00	10.00-15.00	451.84	10/22/2019	449.11	4/25/2017	6.11	451.72	6.71	451.12	6.83	451.00	7.15	450.68	5.99	451.84
MW-97	592687	369527		459.43	5.00	11.50-16.50	451.44	10/22/2019	448.41	1/12/2015	8.20	451.23	8.70	450.73	8.52	450.91	8.74	450.69	7.99	451.44
MW-98	592840	369198		461.62	10.00	15.00-20.00	451.64	10/22/2019	445.27	10/23/2017	16.35	445.27	10.85	450.77	10.68	450.94	11.01	450.61	9.98	451.64
MW-99	592554	368814		466.80	5.00	18.50-23.50	459.89	7/20/2015	456.71	4/17/2018	9.57	457.23	10.09	456.71	10.03	456.77	9.97	456.83	9.41	457.39
MW-172	590858	369002		472.94	10.00	18.00-28.00	465.27	7/20/2015	461.26	4/25/2017	10.10	462.84	10.28	462.66	9.84	463.10	9.62	463.32	9.05	463.89
MW-173	591973	369624		463.56	1.00	5.00-6.00	462.63	7/20/2015	457.61	4/13/2015	2.43	461.13	1.24	462.32	1.19	462.37	0.95	462.61	1.16	462.40
MW-174	591976	369644		463.45	1.00	11.00-12.00	461.75	10/5/2015	453.10	10/23/2017	10.35	453.10	5.41	458.04	4.76	458.69	3.00	460.45	3.13	460.32
MW-175	591603	369655		464.17	1.00	13.50-14.50	464.17	10/22/2019	456.06	10/23/2017	8.11	456.06	2.46	461.71	2.09	462.08	1.73	462.44	0.00	464.17
MW-176	591474	369675		465.24	1.00	13.00-14.00	464.66	7/20/2015	461.99	4/25/2017	NA	NA	2.75	462.49	2.38	462.86	2.02	463.22	1.42	463.82
MW-177	591148	369698		471.50	1.00	9.00-10.00	469.97	1/6/2016	461.78	4/25/2017	NA	NA	3.94	467.56	4.03	467.47	3.81	467.69	4.19	467.31
MW-178	590973	369232		475.40	1.00	7.00-8.00	472.05	5/2/2016	470.38	11/7/2016	4.09	471.31	3.86	471.54	4.03	471.37	3.78	471.62	4.41	470.99
MW-179	590984	369232		475.39	1.00	12.00-13.00	473.98	11/13/2018	462.70	4/13/2015	7.59	467.80	10.90	464.49	1.41	473.98	8.29	467.10	7.26	468.13
MW-180	590996	369231		475.32	1.00	6.00-7.00	471.93	5/2/2016	469.60	11/7/2016	4.20	471.12	4.24	471.08	4.57	470.75	4.17	471.15	4.69	470.63
MW-181	591156	369695		471.87	1.00	6.00-7.00	471.25	4/17/2018	456.87	10/5/2015	NA	NA	0.62	471.25	4.34	467.53	3.69	468.18	DRY	DRY
MW-182	590403	367900		474.64	10.00	21.00-31.00	461.60	10/5/2015	458.66	10/23/2017	15.98	458.66	15.29	459.35	15.25	459.39	14.58	460.06	14.52	460.12
MW-183[4]	592664	369246		462.42	5.00	15.00-20.00	453.47	10/23/2017	450.11	10/5/2015	8.95	453.47	11.66	450.76	NA	NA	NA	NA	NA	NA
MW-183R	592672	369248		462.43	5.00	13.00-18.00	452.23	10/22/2019	448.68	11/13/2018	NA	NA	NA	NA	13.75	448.68	11.53	450.90	10.20	452.23
MW-184	592646	369023		465.58	5.00	19.00-24.00	458.42	10/5/2015	448.03	10/23/2017	17.55	448.03	9.76	455.82	9.62	455.96	9.74	455.84	9.04	456.54
MW-185	592256	367995		473.86	10.00	20.00-30.00	463.49	10/5/2015	458.90	11/13/2018	14.56	459.30	14.90	458.96	14.96	458.90	14.64	459.22	14.43	459.43
MW-186	590124	367716		469.80	10.00	18.00-28.00	457.44	5/2/2016	455.76	10/23/2017	14.04	455.76	13.38	456.42	14.00	455.80	13.15	456.65	13.62	456.18
MW-187	590249	367588		477.42	10.00	24.00-34.00	459.21	5/2/2016	457.30	10/23/2017	20.12	457.30	19.61	457.81	19.69	457.73	18.91	458.51	18.84	458.58
MW-188	590646	367509	481.14	481.09	10.00	26.00-36.00	462.10	10/5/2015	459.07	10/23/2017	22.07	459.07	21.85	459.29	21.68	459.41	21.35	459.74	21.13	459.96
MW-189	590860	367666	485.59	485.50	10.00	31.00-41.00	462.83	10/5/2015	459.41	11/13/2018	26.14	459.45	26.10	459.49	26.09	459.41	25.63	459.87	25.40	460.10
MW-190	591325	367745		481.29	10.00	27.00-37.00	463.27	10/5/2015	459.38	11/13/2018	21.77	459.52	21.89	459.40	21.91	459.38	21.53	459.76	21.26	460.03
MW-191	591662	367732		476.85	10.00	23.00-33.00	463.37	10/5/2015	459.27	11/13/2018	17.34	459.51	17.49	459.36	17.58	459.27	17.14	459.71	16.89	459.96
MW-192	592078	367679		475.33	10.00	21.00-31.00	463.42	10/5/2015	459.10	11/13/2018	15.88	459.45	16.10	459.23	16.23	459.10	15.83	459.50	15.54	459.79
MW-193[4]	592312	370289		455.26	5.00	7.50-12.50	453.76	5/2/2016	451.25	10/5/2015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-194	592161	369791		462.47	10.00	11.00-12.00	459.18	10/22/2019	457.03	4/23/2019	4.59	457.88	5.23	457.24	4.72	457.75	5.44	457.03	3.29	459.18
MW-195	592185	370025		459.36	5.00	13.00-18.00	458.66	10/22/2019	455.78	4/25/2017	2.18	457.18	3.35	456.01	2.80	456.56	3.02	456.34	0.70	458.66
MW-196	592217	370132		457.63	5.00	10.00-15.00	454.58	10/22/2019	452.30	4/25/2017	3.77	453.86	4.26	453.37	4.88	452.75	3.52	454.11	3.05	454.58
TMW-10	591973	370113		460.75	5.00	10.50-15.50	457.94	10/22/2019	453.51	4/17/2018	4.76	455.99	7.24	453.51	5.20	455.55	6.36	454.39	2.81	457.94
TMW-11	591956	370078		460.20	5.00	10.50-15.50	458.20	10/22/2019	453.61	4/17/2018	4.01	456.19	6.59	453.61	4.40	455.80	5.70	454.50	2.00	458.20
TMW-12[5]	591873	369860	461.77	464.19	10.00	10.00-20.00	460.63	10/22/2019	458.33	10/23/2017	3.44	458.33	2.11	459.66	4.91	459.28	4.00	460.19	3.56	460.63
TMW-13[4]	592083	369870		460.10	5.00	13.00-18.00	457.59	4/25/2017	457.59	4/25/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TWM-14	591873	369736		461.89	10.00	11.00-21.00	461.47	10/22/2019	458.14	10/23/2017	3.75	458.14	2.65	459.24	2.31	459.58	2.07	459.82	0.42	461.47
TMW-15[4]	592032	369683		465.32	10.00	13.00-23.00	457.58	4/25/2017	457.58	4/25/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TMW-16	590180	367791		469.87	10.00	18.00-28.00	458.78	10/22/2019	456.48	11/13/2018	13.09	456.78	12.51	457.36	13.39	456.48	11.83	458.04	11.09	458.78
TMW-17[4]	590856	367810		484.05	10.00	32.50-42.50	459.53	4/25/2017	459.53	4/25/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TMW-18[4]	590672	367598		478.79	10.00	25.00-35.00	459.45	4/25/2017	459.45	4/25/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TMW-19[5]	590841	367571	485.35	484.99	10.00	33.00-43.00	460.04	10/22/2019	459.35	11/13/2018	25.73	459.62	25.63	459.72	25.64	459.35	25.16	459.83	24.95	460.04
TMW-20	592210	369929		460.57	7.00	11.50-18.50	458.76	10/22/2019	456.25	4/17/2018	3.24	457.33	4.32	456.25	3.95	456.62	4.04	456.53	1.81	458.76
TMW-21	592082	369959		460.01	10.00	10.00-20.00	459.17	10/22/2019	456.68	10/23/2017	3.33	456.68	2.39	457.62	2.77	457.24	2.56	457.45	0.84	459.17
TMW-22[4]	591985	369997		460.82	7.00	12.00-19.00	457.63	4/17/2018	456.57	10/23/2017	4.25	456.57	3.19	457.63	NA	NA	NA	NA	NA	NA
TMW-22R	591992	369990		460.71	5.00	13.50-18.50	459.55	10/22/2019	457.07	11/13/2018	NA	NA	NA	NA	3.64	457.07	2.38	458.33	1.16	459.55
TMW-23[5]	591874	370019	461.94	461.68	5.00	14.00-19.00	459.08	10/22/2019	455.31	4/17/2018	4.73	457.21	6.63	455.31	4.40	457.28	5.52	456.16	2.60	459.08
TMW-24[5]	592006	369808	461.23	461.15	7.00	12.00-19.00	460.05	10/22/2019	457.33	10/23/2017	3.90	457.33	3.09	458.14	2.94	458.21	1.95	459.20	1.10	460.05
TMW-25	590283	367848		473.14	10.00	20.50-30.50	458.86	10/22/2019	456.76	10/23/2017	16.38	456.76	15.79	457.35	15.50	457.64	14.49	458.65	14.28	458.86

TABLE 3
SUMMARY OF MONITORING WELL STATIC WATER LEVEL MEASUREMENTS
Whirlpool Facility - Fort Smith, Arkansas

Location	Well Coordinates		Previous TOC Elevation (feet) (if applicable)	TOC Elevation (feet)	Screen Length (feet)	Screened Interval (feet)	Maximum Static Water Elevation (Since Oct 2012)	Maximum Elevation Date	Minimum Static Water Elevation (Since Oct 2012)	Minimum Elevation Date	Static Water Level Elevation (feet)									
	Easting (feet)	Northing (feet)									10/23/2017		4/17/2018		11/13/2018		4/23/2019		10/22/2019	
											DTW	GW Elevation	DTW	GW Elevation	DTW	GW Elevation	DTW	GW Elevation	DTW	GW Elevation
TMW-26	590115	367763		472.10	10.00	18.00-28.00	457.06	10/22/2019	455.66	11/13/2018	15.37	456.73	15.79	456.31	16.44	455.66	15.23	456.87	15.04	457.06
TMW-27	590091	367871		467.45	10.00	16.00-26.00	457.39	10/22/2019	456.03	10/23/2017	11.42	456.03	10.77	456.68	11.08	456.37	10.08	457.37	10.06	457.39
TMW-28[4]	590092	367956		468.27	10.00	17.00-27.00	NA	10/1/2012	NA	10/1/2012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TMW-29	592211	369848		462.19	10.00	12.00-19.00	454.62	4/23/2019	452.30	4/17/2018	9.06	453.13	9.89	452.30	8.73	453.46	7.57	454.62	7.81	454.38
TMW-30	590113	367737		469.37	10.00	18.50-20.50	456.67	10/22/2019	455.28	11/13/2018	13.83	455.54	13.34	456.03	14.09	455.28	13.08	456.29	12.70	456.67
TMW-32	590048	367787		466.9	10.00	16.50-26.50	456.30	4/23/2019	455.49	11/13/2018	NA	NA	10.69	456.21	11.41	455.49	10.60	456.30	10.78	456.12
TMW-34	592334	368003		471.37	5.00	21.00-26.00	459.13	10/22/2019	458.67	11/13/2018	NA	NA	NA	NA	12.70	458.67	12.44	458.93	12.24	459.13
TMW-35	591121	369924		473.37	5.00	18.00-23.00	464.21	10/22/2019	464.21	10/22/2019	NA	NA	NA	NA	NA	NA	NA	NA	9.16	464.21
TMW-36	590884	367543		485.35	5.00	36.00-41.00	460.00	10/22/2019	460.00	10/22/2019	NA	NA	NA	NA	NA	NA	NA	NA	25.35	460.00

Notes:

TOC = Top of casing
NA = Not available
NM = Not measured
1 = Construction diagram notes use of pre-packed stainless steel screen
2 = Construction diagram text and graphical representation differ on construction details. Graphical representation used to infer elevations
3 = Construction diagram notes presence of sedimentation sump below screened interval
4 = Abandoned Monitoring Well
Horizontal and vertical coordinates converted to Arkansas State Plane, North Zone (NAD83) and North American Vertical Datum of 1988 (NAVD88) based on in historic site file. Casing elevations for ITMW-1 through ITMW-21 and MW-22 extracted from 2011/2012 Annual Ground Water Monitoring Report dated June 28, 2012.
Casing elevations for remaining wells extracted from survey data provided by Philip J. Leraris, PE, LS, dated May 12, 2009.
IW-129, IW-130, IW-131, and MW-81 to MW-99 surveyed during 2014.
Well screen intervals and depths adapted from monitoring well construction diagrams.
5 = During the November 2018 well repair event TOC elevations were modified due to repair work for TMW-12, TMW-19, TMW-23 and TMW-24. The TOC elevations listed on the table represent the most current elevations. All water level elevations prior to November 2018 were calculated using the previous surveyed TOC elevations.

TABLE 4
SUMMARY OF FINAL WELL GROUNDWATER FIELD PARAMETERS MEASUREMENTS (OCTOBER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Well Casing Diameter (inches)	Date Sampled	Water Level prior to Purging (ft btoc)	Total Depth of Well Casing (feet)	Set Tubing Depth (feet)	Time Sampled	Water Level after Purging (ft btoc)	Purge Volume (Gallons)	Purge Rate (ml/min)	Temperature (°C)	Specific Conductivity (µS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Ferrous Iron (mg/L)	Persulfate (mg/L)	Color
ITMW-1R	4	10/23/2019	13.03	29.25	28.0	16:00	21.65	3.00	100-125	21.0	690.0	0.12	6.71	-105.4	4.09	0.08	NM	Clear
ITMW-2R	4	10/24/2019	11.55	31.99	29.5	10:05	11.63	2.5	100-150	19.5	409	0.14	7.49	37.3	4.01	0.00	NM	Clear
ITMW-5	4	10/24/2019	18.70	39.29	34.4	13:05	18.87	2.40	100-200	18.1	781.0	0.30	5.78	NR	1.73	0.00	NM	Clear
ITMW-7	4	10/22/2019	19.70	36.98	32.0	17:15	21.29	4.5	200-500	20.1	384	0.32	4.75	196.8	0.58	0.00	NM	Clear
ITMW-9	4	10/23/2019	21.78	34.95	30.0	13:05	21.80	5.0	200	22.0	591	0.12	6.09	170.4	1.11	0.00	NM	Clear
ITMW-10	4	10/24/2019	20.62	36.82	31.8	11:35	20.72	2.25	100-125	15.7	1,055	0.63	5.81	-198.1	2.86	0.00	NM	Clear
ITMW-11	4	10/24/2019	10.15	29.25	22.5	11:55	10.20	2.50	100-150	20.7	7,510	0.64	3.40	460.4	11.68	0.13	NM	Clear
ITMW-12R	2	10/24/2019	10.65	29.55	24.6	16:05	10.69	1.50	100	20.3	236	0.08	6.14	116.7	7.53	0.05	NM	Clear
ITMW-16	4	10/24/2019	14.32	34.18	29.2	9:50	14.74	2.6	100-200	17.2	159.0	2.00	6.24	NR	7.39	0.00	NM	Clear
ITMW-18	4	10/24/2019	9.95	29.50	24.5	13:00	10.06	3.7	200	20.9	982	2.70	7.02	41.4	3.10	0.00	NM	Clear
ITMW-19	4	10/24/2019	12.54	33.23	28.2	11:25	12.77	3.2	150-200	19.3	5,957	2.72	6.15	191.2	1.18	0.00	NM	Clear
ITMW-20	4	10/23/2019	13.60	31.03	23.5	11:35	13.98	1.0	100	21.5	1,120	0.54	5.63	107.5	2.30	0.01	NM	Clear
ITMW-21	4	10/23/2019	12.45	32.99	25.0	9:25	12.79	1.2	100	19.7	5,120	0.17	4.88	312.2	1.10	0.00	NM	Clear
MW-22	4	10/23/2019	11.79	29.20	22.0	16:00	11.90	1.2	100	22.8	250	0.17	5.26	155.5	1.35	0.00	NM	Clear
MW-24	4	10/23/2019	12.20	32.51	27.5	17:20	12.22	2.5	100-200	24.5	2,409	0.69	4.24	NR	2.33	0.00	NM	Clear
MW-25R	4	10/23/2019	17.73	28.60	26.1	8:50	25.60	1.5	150-200	15.9	2,232	1.18	5.88	143.2	NM	NM	NM	Hazy Tan/Turbid
MW-26	4	10/23/2019	13.46	35.14	27.5	12:35	13.69	1.2	100	21.9	2,370	0.16	5.77	115.0	1.51	0.00	NM	Clear
MW-27	2	10/24/2019	11.52	30.14	22.6	13:15	11.52	4.5	200-500	21.0	804	0.23	5.16	183.6	5.8	0.00	NM	Clear
MW-28	2	10/23/2019	6.59	27.45	20.0	17:15	6.99	1.8	100	25.1	422	0.10	6.39	51.5	NR	0.02	NM	Clear
MW-29	2	10/23/2019	11.41	30.32	23.0	9:10	11.51	1.3	100	19.9	1,070	0.32	4.85	185.9	2.74	0.03	NM	Clear
MW-37	2	10/24/2019	9.31	29.06	27.5	15:30	9.45	1.7	100	22.2	3,930	0.08	6.15	162.8	4.16	0.08	< 5	Clear
MW-38	2	10/23/2019	10.49	29.83	24.8	5:00	10.61	1.3	100	24.0	607	0.06	6.19	-25.4	1.84	3.00	0.0	Clear
MW-39R	2	10/22/2019	10.61	29.69	27.2	14:30	10.77	2.00	140-150	19.4	1,123	0.32	5.13	160.4	1.23	0.34	NM	Clear
MW-40R	2	10/22/2019	9.08	28.30	23.3	16:05	9.08	2.50	150	22.3	680	0.21	5.06	102.9	1.42	1.87	NM	Clear
MW-46R	2	10/23/2019	1.97	21.51	19.0	15:00	2.63	2.3	250	22.1	704	0.11	4.93	198.9	0.67	0.04	NM	Clear
MW-50R	2	10/23/2019	6.93	18.24	15.8	9:35	12.55	5.0	180-250	21.3	1,268	0.17	6.53	107.4	8.32	0.09	NM	Clear
MW-55R	2	10/23/2019	1.20	20.96	20.0	12:15	3.25	2.2	100-200	20.4	980	0.27	5.50	151.6	1.70	0.33	NM	Clear
MW-56R	2	10/23/2019	1.71	19.79	18.8	12:20	3.01	3.5	200-400	20.2	673	0.20	5.57	87.5	2.88	0.99	NM	Clear
MW-57R	2	10/23/2019	1.29	19.35	16.9	13:32	4.20	3.3	200-500	22.1	760	0.15	5.37	57.8	2.70	0.68	NM	Clear
MW-58R	2	10/23/2019	2.32	20.96	20.0	15:15	3.16	1.4	100	22.1	765	0.18	4.93	180.2	7.27	0.53	NM	Clear
MW-60R	2	10/23/2019	1.80	14.86	12.4	9:40	6.12	3.00	100-200	19.5	1,290	0.76	6.81	108.8	18.6	0.03	NM	Clear
MW-61R	2	10/23/2019	5.05	15.28	13.0	9:10	7.14	5.0	100-400	22.3	881	0.29	6.70	-105.8	2.11	2.13	NM	faint blue
		12/7/2019	6.99	15.28	13.0	12:35	9.03	2.5	300	19.6	845	0.10	6.54	-95.2	NM	NM	NM	Clear
MW-62R	2	10/22/2019	3.75	20.01	17.5	13:09	4.81	2.50	100-125	19.9	590	0.35	5.72	103.5	4.32	0.00	NM	Clear
MW-63R	2	10/22/2019	3.04	19.72	17.2	13:10	4.52	2.00	110-150	19.5	532	0.17	5.70	138.5	14.74	0.02	NM	Clear
MW-68	2	10/22/2019	5.66	20.35	15.4	14:34	5.85	2.50	125	20.8	930	0.62	5.11	116.3	5.27	2.18	NM	Clear/Murky
RW-69	4	10/23/2019	7.19	28.71	23.7	11:25	7.25	4.0	200	19.5	973	0.14	5.26	191.6	1.19	0.37	NM	Clear
IW-73	2	11/20/2019	7.20	26.82	21.8	12:20	7.21	4.0	150	20.0	830	0.31	5.45	121.8	1.24	0.02	NM	Clear with brown flecks
IW-77	2	10/23/2019	8.79	28.70	23.7	16:10	8.85	3.0	300	20.2	1,971	0.12	9.54	126.1	1.92	0.00	14	Clear
IW-78	2	10/23/2019	9.41	29.13	25.0	14:05	9.42	2.5	100	21.8	7,150	1.00	6.21	216.6	1.97	0.00	NM	Clear
MW-82	2	10/23/2019	9.55	25.98	23.5	12:40	9.53	2.5	125	21.6	1,260	0.17	5.01	155.6	8.65	0.07	NM	Clear
MW-83	2	10/24/2019	11.55	26.77	24.3	10:00	11.59	3.5	200	23.3	2,987	1.47	7.99	1.9	4.91	0.00	NM	Clear
MW-84	2	10/23/2019	11.49	25.19	22.0	14:55	11.54	1.8	100	25.2	11,280	0.85	7.14	180.8	5.88	0.01	70	Clear
MW-85R	2	10/24/2019	8.54	28.45	26.0	10:45	8.54	1.80	100	20.6	3,610	0.20	6.38	-30.4	1.56	0.03	NM	Clear
MW-87	2	10/23/2019	12.44	26.84	21.8	13:10	12.60	1.3	100	24.7	430	0.08	5.65	162.8	2.46	0.00	NM	Clear
MW-89	2	10/22/2019	9.78	25.08	20.1	16:30	12.70	1.3	100	23.2	1,000	0.09	5.32	182.4	2.11	0.00	NM	Clear
MW-91	2	10/24/2019	11.45	25.70	20.7	14:20	11.53	2.5	100	20.1	384	0.21	5.67	189.0	2.06	0.03	NM	Clear
MW-93	2	10/24/2019	14.05	34.21	29.2	14:35	14.17	2.0	150	20.1	1,193	0.75	5.17	67.4	2.32	0.11	0.0	Clear
MW-95	2	10/24/2019	14.25	34.14	31.6	13:05	14.35	2.0	160-250	20.4	1,132	0.18	5.28	238.8	1.35	0.00	0.00	Clear
MW-96	2	10/23/2019	6.71	14.53	12.0	10:35	7.32	2.5	125	23.4	179	0.41	5.36	80.0	2.47	2.60	NM	brown tint
MW-97	2	10/23/2019	8.32	15.20	12.7	9:15	10.71	2.5	150	22.1	201	2.48	6.06	41.4	5.53	0.18	NM	Clear
MW-98	2	10/23/2019	10.24	19.65	17.7	9:50	15.66	2.0	150	18.9	162	0.65	6.17	125.8	1.16	0.08	NM	Clear
MW-99	2	10/23/2019	9.40	22.74	20.2	12:35	9.53	2.0	150-170	21.2	189	0.57	6.28	114.4	5.27	0.03	NM	Clear
IW-132	2	10/24/2019	11.07	28.00	26.5	15:30	11.09	2.5	100-300	18.3	1,830	0.30	7.53	-200.2	6.80	0.00	0.0	Clear

RAMBOLL

TABLE 4
SUMMARY OF FINAL WELL GROUNDWATER FIELD PARAMETERS MEASUREMENTS (OCTOBER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Well Casing Diameter (inches)	Date Sampled	Water Level prior to Purging (ft btoc)	Total Depth of Well Casing (feet)	Set Tubing Depth (feet)	Time Sampled	Water Level after Purging (ft btoc)	Purge Volume (Gallons)	Purge Rate (ml/min)	Temperature (°C)	Specific Conductivity (µS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Ferrous Iron (mg/L)	Persulfate (mg/L)	Color
IW-134	2	10/24/2019	10.34	28.00	25.5	12:05	10.51	1.8	100	22.8	6,270	9.60	11.14	-0.8	10.48	0.17	20	Clear
IW-147	2	10/24/2019	9.33	24.59	22.1	10:15	9.37	2.0	100	20.1	2,680	0.15	6.48	250.0	1.39	NM	2.8	Clear
MW-175	2	10/22/2019	0.15	14.51	14.0	23:45	DRY	2.3	200	21.3	346	1.32	7.94	-148.6	14.90	0.00	NM	Clear
MW-176	2	10/22/2019	1.55	14.00	13.5	15:55	7.68	3.5	200	21.1	601	0.83	6.61	-37.8	93.0	0.22	NM	Clear
MW-178	2	10/22/2019	4.40	7.97	7.7	16:45	DRY	0.8	150	28.4	345	NR	7.12	1.6	35.20	0.35	NM	Clear
MW-179	2	10/22/2019	7.26	12.79	12.4	15:50	DRY	1.1	150	28.2	123	NR	6.12	0.6	41.20	1.05	NM	very turbid
MW-182	2	10/23/2019	14.24	31.09	26.1	16:00	14.27	1.80	150	18.1	523	0.30	5.62	7.1	4.5	0.00	NM	Clear
MW-183R	2	10/23/2019	10.98	17.90	15.4	11:02	12.93	1.50	150	21.8	375	0.21	5.83	119.7	0.83	0.00	NM	Clear
MW-184	2	10/24/2019	9.06	23.55	18.6	13:40	9.84	2.0	150-190	21.6	130	0.24	6.19	130.7	18.5	0.18	NM	Clear with white flakes
MW-185	2	10/24/2019	14.26	29.28	24.3	14:29	14.25	2.5	120-500	22.2	271	0.59	5.64	151.7	3.58	0.29	NM	Clear
MW-186	2	10/24/2019	12.86	27.80	22.8	13:15	22.63	7.3	100-400	17.0	2,234	0.16	7.13	-169.8	25.10	1.66	NM	Light yellow
MW-187	2	10/22/2019	18.88	30.25	25.0	14:25	19.02	2.8	150	18.3	580	0.15	6.06	52.9	24.30	0.18	NM	Slightly cloudy
MW-188	2	10/22/2019	21.05	34.58	29.5	15:35	21.38	1.6	100	19.4	440.0	0.23	6.49	-72.6	8.07	1.54	NM	Clear
MW-189	2	10/24/2019	25.33	40.85	35.9	9:32	25.41	2.5	150-300	19.2	1,192	0.25	5.80	102.0	2.40	0.00	NM	Clear
MW-190	2	10/22/2019	21.30	36.10	31.1	14:25	21.63	1.3	100	27.3	1,400	4.93	11.31	151.2	3.35	0.98	NM	Cloudy with slight yellow tint
MW-191	2	10/22/2019	16.91	33.20	30.0	12:55	16.94	4.0	130-250	25.0	1,200	1.60	5.53	154.2	1.00	0.00	NM	Clear
MW-192	2	10/22/2019	15.50	30.19	27.7	15:55	15.50	3.50	200-600	23.8	2,000	4.15	6.83	183.7	2.43	0.00	NM	Clear
MW-194	2	10/23/2019	3.25	21.30	16.3	10:40	3.54	8.0	100-400	20.6	913	0.14	6.23	-53.5	32.8	2.15	NM	Clear
MW-195	2	10/22/2019	0.83	17.13	14.7	16:20	7.00	3.0	100-200	21.7	704	0.95	6.62	-104.8	5.98	0.12	NM	Clear
MW-196	2	10/23/2019	3.22	15.00	12.5	10:55	8.63	2.00	100-300	25.0	1,769	2.23	6.89	-107.1	7.25	0.00	NM	Clear
TMW-10	2	10/22/2019	2.89	15.19	12.7	14:05	6.21	4.6	100-300	20.9	2,122	0.05	6.83	-166.3	17.4	>3.00	NM	Light yellow brown
TMW-11	2	10/22/2019	2.11	15.13	12.8	13:45	5.79	6.0	200-360	22.5	1,438	0.07	7.00	-124.4	4.80	>3.00	NM	Clear with black flecks
TMW-12	2	10/23/2019	3.42	20.00	15.0	9:30	3.67	3.8	200-400	19.1	536	1.87	5.35	146.7	3.11	0.00	NM	Clear
TMW-14	2	10/23/2019	1.21	21.00	16.0	11:00	3.89	3.8	200-500	20.2	267	0.32	6.01	73.9	25.3	0.39	NM	Clear
TMW-16	2	10/23/2019	11.45	28.00	23.0	15:15	22.25	8.0	100-400	18.3	3,689	0.09	7.03	-200.3	26.5	>3.00	NM	Tan Tinge
TMW-19	2	10/23/2019	24.74	43.00	38.0	16:06	25.10	2.5	100-400	22.3	477.7	0.29	6.05	91.4	77.20	0.37	NM	Slightly cloudy
TMW-20	2	10/22/2019	1.86	17.90	14.5	14:05	3.62	4.0	100-350	22.7	1,383	0.49	6.81	45.5	2.22	0.05	NM	Clear
TMW-21	2	10/22/2019	1.00	19.70	14.7	16:00	10.57	9.0	100-400	20.1	2,005	0.11	6.56	-211.8	13.0	>3.00	NM	Light gray with black flecks
TMW-22R	2	10/23/2019	1.40	17.80	15.3	12:30	11.25	8.0	100-400	22.4	1,627	0.18	6.61	-112.4	102.3	>3.00	NM	Tan Tinge/Turbid
TMW-23	2	10/23/2019	2.73	20.00	17.5	16:05	5.94	2.2	100-225	22.4	1,007	0.36	6.42	-295.8	5.5	0.00	NM	Clear
		12/7/2019	3.24	20.00	17.5	16:45	8.48	2.5	150	18.0	1,018	1.66	6.32	89.4	NM	NM	NM	Clear
TMW-24	2	10/23/2019	1.04	19.50	16.0	14:25	1.26	2.5	100-175	22.4	812	0.27	5.90	-193.1	9.71	0.03	NM	Clear
		12/7/2019	1.38	19.50	16.0	14:35	1.85	2.0	125-150	18.7	816	0.13	5.79	106.2	NM	NM	NM	Clear
TMW-25	2	10/24/2019	11.90	30.50	25.5	10:55	23.07	9.0	100-450	16.4	1,509	0.36	7.07	-152.2	22.8	1.68	NM	Very pale yellow
TMW-26	2	10/23/2019	15.04	28.60	23.6	17:00	23.08	6.5	100-400	18.8	2,963	0.06	6.87	-174.7	35.40	2.56	NM	Pale yellow/tan
TMW-27	2	10/23/2019	9.99	26.40	21.0	10:40	10.15	1.8	100	19.0	620.0	0.10	5.65	87.2	9.23	0.08	NM	Clear
TMW-29	2	10/22/2019	7.88	27.50	22.5	14:30	7.88	2.20	100-300	21.7	1,154	1.41	6.67	-142.3	NR	NM	NM	Very Turbid/Brown
TMW-30	2	10/23/2019	12.72	28.80	23.8	14:45	21.68	2.0	125-150	19.8	4,742	0.20	7.03	-214.7	835 AU	2.46	NM	Dark Gray
TMW-32	2	10/24/2019	10.70	26.50	21.5	15:15	10.79	8.0	100-450	17.7	829	0.13	6.46	-68.6	3.99	1.76	NM	Very pale yellow
TMW-34	2	10/24/2019	11.60	24.78	22.0	17:30	11.95	5.5	100-400	20.9	426	0.13	6.66	-70.9	3.63	1.54	NM	Clear
		12/7/2019	12.43	24.78	22.0	10:25	16.40	3.0	200-250	21.6	399	0.10	6.34	-21.0	NM	NM	NM	Clear
TMW-35	2	10/22/2019	9.11	23.00	20.5	15:50	9.62	1.5	150	20.5	292	0.08	5.46	171.0	1.31	0.01	NM	Clear
TMW-36	2	10/24/2019	25.32	41.00	38.5	10:46	25.72	2.0	100-300	18.1	838	0.21	5.44	117.0	1.38	0.00	NM	Clear

Notes:

ft btoc = Feet below top of casing
ORP = Oxidation reduction potential
DO = Dissolved oxygen
(°C) = Degrees Celcius
mV = Millivolts
NS = Well not sampled
mL/min = Milliliters per minute
mg/L = Milligrams per liter
NTUs = Nephelometric turbidity units
NM = Not measured
(µS/cm) = Microsiemens per centimeter
NR = Due to the recording of erroneous field data, this value is not reported
All wells gauged using electronic water level meter and purged using peristaltic pumps.
Tubing inlet depths based on estimated distance from total depth.

RAMBOLL

TABLE 5
SUMMARY OF VERTICAL HYDRAULIC GRADIENT
Whirlpool Facility - Fort Smith, Arkansas

Location/ Well Pairs	Middle of Screen Elevation[1] (feet)	Static Water Level Elevation (feet)											
		4/13/2015	7/20/2015	10/5/2015	1/6/2016	5/2/2016	11/7/2016	4/25/2017	10/23/2017	4/17/2018	11/13/2018	4/23/2019	10/22/2019
Shallow Well MW-70 and MW-177													
MW-177	462.00	466.94	469.09	465.34	469.97	469.00	465.19	461.78	NM	467.56	467.47	467.69	467.31
MW-70	451.53	464.17	465.33	465.15	464.77	464.59	462.70	462.38	462.93	462.85	463.26	463.48	464.06
MW-177/MW-70													
Shallow Well MW-176 and MW-46R[4]													
MW-176	451.74	463.81	464.66	464.49	464.38	464.18	462.30	461.99	462.93	462.49	462.86	463.22	463.82
MW-46R	446.69	462.85	464.88	464.67	464.40	464.21	462.34	462.03	462.55	462.53	462.87	463.16	463.74
MW-176/MW-46R													
Shallow Well MW-175													
MW-175	450.17	460.25	463.71	463.47	463.37	463.42	462.22	460.74	456.06	461.71	462.08	462.44	464.17
Ave. of MW-46R & MW-56/56R	446.46	461.54	463.68	463.15	463.26	463.21	460.68	461.38	461.24	461.37	461.78	462.28	462.75
MW-175/Ave. of MW-46R & MW-56/56R													
Shallow Wells MW-173 and MW-174													
MW-174	451.95	457.67	459.92	461.75	459.71	460.01	459.77	457.87	453.10	458.04	458.69	460.45	460.32
MW-63/MW-63R	445.37	459.36	462.29	462.08	460.93	460.79	460.05	458.56	459.92	458.22	459.35	458.94	460.96
MW-174/MW-63													
Shallow Wells MW-178, MW-179 and MW-180													
MW-178	467.90	472.29	471.94	471.48	471.93	472.05	470.38	471.50	471.31	471.54	471.37	471.62	470.99
MW-83	450.98	464.02	465.25	465.01	464.72	464.47	462.64	462.32	462.86	462.69	463.10	463.33	463.88
MW-178/MW-83													

Notes:

[1] MW-56R and MW-63R were installed in June 2015

[2] Negative gradient indicates downward gradient

[3] Reference elevations used in vertical gradient calculations were changed from ground surface to top of casing for the First Quarter 2016 Annual Groundwater Monitoring Report.

NM = Measurement not completed

RAMBOLL

TABLE 5
SUMMARY OF VERTICAL HYDRAULIC GRADIENT
Whirlpool Facility - Fort Smith, Arkansas

Location/ Well Pairs	Middle of Screen Elevation[1] (feet)	Vertical Hydraulic Gradient[2,3] (feet/feet)											
		4/13/2015	7/20/2015	10/5/2015	1/6/2016	5/2/2016	11/7/2016	4/25/2017	10/23/2017	4/17/2018	11/13/2018	4/23/2019	10/22/2019
Shallow Well MW-70 and MW-177													
MW-177	462.00												
MW-70	451.53												
MW-177/MW-70		-0.26	-0.36	-0.02	-0.50	-0.42	-0.24	0.06	NM	-0.45	-0.40	-0.40	-0.31
Shallow Well MW-176 and MW-46R[4]													
MW-176	451.74												
MW-46R	446.69												
MW-176/MW-46R		-0.19	0.04	0.04	0.004	0.005	0.01	0.01	-0.08	0.01	0.001	-0.01	-0.02
Shallow Well MW-175													
MW-175	450.17												
Ave. of MW-46R & MW-56/56R	446.46												
MW-175/Ave. of MW-46R & MW-56/56R		0.35	-0.007	-0.07	-0.02	-0.04	-0.32	0.14	1.09	-0.07	-0.06	-0.03	-0.30
Shallow Wells MW-173 and MW-174													
MW-174	451.95												
MW-63/MW-63R	445.37												
MW-174/MW-63		0.26	0.43	0.06	0.22	0.14	0.05	0.13	1.24	0.03	0.12	-0.27	0.12
Shallow Wells MW-178, MW-179 and MW													
MW-178	467.90												
MW-83	450.98												
MW-178/MW-83		-0.49	-0.40	-0.38	-0.43	-0.45	-0.46	-0.54	-0.50	-0.52	-0.49	-0.49	-0.42

Notes:

[1] MW-56R and MW-63R were installed in June 2015

[2] Negative gradient indicates downward gradient

[3] Reference elevations used in vertical gradient calcu

NM = Measurement not completed

RAMBOLL

TABLE 6A
SUMMARY OF MONITORING WELL GROUNDWATER SAMPLE ANALYTICAL RESULTS
(FOURTH QUARTER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued Dec 2013	ITMW-1R	ITMW-2R	ITMW-5	ITMW-7	ITMW-9	ITMW-9	ITMW-10	ITMW-11	ITMW-12R	ITMW-16	ITMW-16	ITMW-18	ITMW-19
Field Sample ID		ITMW-1R-201910	ITMW-2R-201910	ITMW-5-201910	ITMW-7-201910	ITMW-9-201910	DUP-07-201910	ITMW-10-201910	ITMW-11-201910	ITMW-12R-201910	ITMW-16-201910	DUP-10-201910	ITMW-18-201910	ITMW-19-201910
Lab Sample ID(s)		60319115010	60319241015	60319241025	60318969019	60319115054/ 319040006	60319115059	60319241024	60319241016	60319241017	60319241023	60319241029	60319241008	60319241009
Sample Date		10/23/2019	10/24/2019	10/24/2019	10/22/2019	10/23/2019	10/23/2019	10/24/2019	10/24/2019	10/24/2019	10/24/2019	10/24/2019	10/24/2019	10/24/2019
Sample Method		Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Comments							Field Duplicate					Field Duplicate		
Volatile Organic Compounds														
Acetone	12000	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	27.4 (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)
Benzene	5.0	0.18 J (0.079)	U (0.079)	U (0.079)	0.13 J (0.079)	1.6 (0.079)	1.6 (0.079)	U (0.079)	U (0.079)	0.27 J (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)
Bromodichloromethane	80	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	0.49 J (0.17)
Bromoform	80	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	6.3 (0.21)
Bromomethane	7.0	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)
2-Butanone	4900	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)
Carbon Disulfide	720	1.2 J (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	0.44 J (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
Carbon Tetrachloride	5	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)
Chlorobenzene	100	U (0.13)	U (0.13)	U (0.13)	4.6 (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)
Chloroethane	12000	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)
Chloroform	80	U (0.10)	U (0.10)	0.80 J (0.10)	U (0.10)	0.59 J (0.10)	0.57 J (0.10)	U (0.10)	U (0.10)	1.9 (0.10)	U (0.10)	U (0.10)	0.38 J (0.10)	1.3 (0.10)
Chloromethane	190	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	1.3 (0.16)
Dibromochloromethane	80	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	0.70 J (0.15)
1,1-Dichloroethane	2.4	2.7 (0.097)	U (0.097)	1.4 (0.097)	U (0.097)	4.6 (0.097)	4.5 (0.097)	0.42 J (0.097)	U (0.097)	1.0 (0.097)	U (0.097)	U (0.097)	0.32 J (0.097)	U (0.097)
1,2-Dichloroethane	5.0	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1-Dichloroethene	7.0	U (0.22)	U (0.22)	8.5 (0.22)	U (0.22)	13.8 (0.22)	13.8 (0.22)	0.44 J (0.22)	U (0.22)	12.9 (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)
cis-1,2-Dichloroethene	70	8.9 (0.17)	U (0.17)	42.1 (0.17)	6.7 (0.17)	96.3 (0.17)	95.0 (0.17)	6.3 (0.17)	0.39 J (0.17)	275 (17.0)	U (0.17)	0.31 J (0.17)	68.4 (0.17)	1.8 (0.17)
trans-1,2-Dichloroethene	100	U (0.17)	U (0.17)	0.42 J (0.17)	U (0.17)	3.0 (0.17)	3.0 (0.17)	U (0.17)	U (0.17)	1.2 (0.17)	U (0.17)	U (0.17)	12.4 (0.17)	0.41 J (0.17)
Ethyl Benzene	700	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)
2-Hexanone	34	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	1000	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)
Methylene Chloride	5.0	U (0.27)	U (0.27)	U (0.27)	U (0.27)	0.28 J (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)
1,1,2,2-Tetrachloroethane	0.066	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	1.4 (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	0.69 J (0.31)
Tetrachloroethene	5.0	U (0.22)	U (0.22)	1.8 (0.22)	U (0.22)	2.9 (0.22)	3.0 (0.22)	0.22 J (0.22)	U (0.22)	2.9 (0.22)	U (0.22)	U (0.22)	0.30 J (0.22)	0.49 J (0.22)
Toluene	1000	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	0.32 J (0.14)	U (0.14)	0.15 J (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1,1-Trichloroethane	200	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	0.20 J (0.12)	U (0.12)	U (0.12)
1,1,2-Trichloroethane	5.0	U (0.10)	U (0.10)	0.11 J (0.10)	U (0.10)	0.15 J (0.10)	0.12 J (0.10)	U (0.10)	U (0.10)	0.95 J (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Trichloroethene	5.0	11.4 (0.17)	U (0.17)	3700 (3.4)	20.5 (0.17)	2720 (8.5)	2810 (8.5)	127 (0.17)	9.9 (0.17)	11800 (17.0)	U (0.17)	U (0.17)	769 (1.7)	240 J (0.17)
Vinyl Chloride	2.0	0.14 J (0.11)	U (0.11)	2.0 (0.11)	0.13 J (0.11)	2.0 (0.11)	2.0 (0.11)	0.40 J (0.11)	U (0.11)	7.1 (0.11)	U (0.11)	U (0.11)	U (0.11)	U (0.11)
Metals														
Iron	NE	NM	NM	NM	NM	24.0 J (50.0)	NM	NM	NM	NM	NM	NM	NM	NM
Monitored Natural Attenuation Parameters (Laboratory)														
Acetic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
1-Butanecarboxylic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Butyric acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Organic Carbon (total)	NE	NM	NM	NM	NM	1800 (1000)	NM	NM	NM	NM	NM	NM	NM	NM
Organic Carbon (dissolved)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chloride	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Formic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
n-Hexanoic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Lactic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3-methyl-Butanoic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
4-methyl-pentanoic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Nitrogen	NE	NM	NM	NM	NM	6500 (200)	NM	NM	NM	NM	NM	NM	NM	NM
Nitrate/Nitrite	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Nitrogen, Nitrate	NE	NM	NM	NM	NM	6500 (200)	NM	NM	NM	NM	NM	NM	NM	NM
Nitrogen, Nitrite	NE	NM	NM	NM	NM	U (200)	NM	NM	NM	NM	NM	NM	NM	NM
Propionic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Pyruvic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Sulfate	NE	NM	NM	NM	NM	25100 (2000)	NM	NM	NM	NM	NM	NM	NM	NM
Gases														
Acetylene	NE	NM	NM	NM	NM	U (0.50)	NM	NM	NM	NM	NM	NM	NM	NM
Methane	NE	NM	NM	NM	NM	29 (0.50)	NM	NM	NM	NM	NM	NM	NM	NM
Ethane	NE	NM	NM	NM	NM	U (0.10)	NM	NM	NM	NM	NM	NM	NM	NM
Ethene	NE	NM	NM	NM	NM	U (0.10)	NM	NM	NM	NM	NM	NM	NM	NM
Hydrogen (H2) [nM]	NE	NM	NM	NM	NM	11 (1.0)	NM	NM	NM	NM	NM	NM	NM	NM
Molecular Analyses														
BAV1 Vinyl Chloride Reductase [cells/mL]	NM	NM	NM	NM	NM	NM	U (0.5)	NM	NM	NM	NM	NM	NM	NM
Dehalococcoides (DHC) [cells/mL]	NM	NM	NM	NM	NM	NM	U (0.5)	NM	NM	NM	NM	NM	NM	NM
tceA Reductase [cells/mL]	NM	NM	NM	NM	NM	NM	U (0.5)	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride Reductase (vrcA) [cells/mL]	NM	NM	NM	NM	NM	NM	U (0.5)	NM	NM	NM	NM	NM	NM	NM

Notes:

1 All concentrations are presented in µg/L (ppb) except where otherwise noted.

2 Only compounds with at least one detection are shown.

3 The detection limit for VOCs is the sample quantitation limit. For other compounds the reporting detection limit is used.

4 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued Dec 2013 are double underlined.

U = Not detected
J = Estimated concentration
( ) = Method detection limit for VOCs; reporting detection limit for other analyses.

RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
µg/L = Micrograms per Liter
NE = Not established
NM = Not measured

Color Key
Onsite Wells
Offsite Wells
Plume Boundary Wells

RAMBOLL

TABLE 6A
SUMMARY OF MONITORING WELL GROUNDWATER SAMPLE ANALYTICAL RESULTS
(FOURTH QUARTER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued Dec 2013	IW-132	IW-134	IW-147	MW-22	MW-24	MW-25R	MW-27	MW-28	MW-38	MW-83	MW-84	MW-85R	MW-85R
Field Sample ID		IW-132-201910	IW-134-201910	IW-147-201910	MW-22-201910	MW-24-2019110	MW-25R-201910	MW-27-201910	MW-28-201910	MW-38-201910	MW-83-201910	MW-84-201910	MW-85R-201910	DUP-09-201910
Lab Sample ID(s)		60319241026	60319241021	60319241005/ 319530005	60319115020	60319115029	60319340001	60319241014	60319115021	60319115057/ 319040009	60319241007	60319115019	60319241020	60319241028
Sample Date		10/24/2019	10/24/2019	10/24/2019	10/23/2019	10/23/2019	10/25/2019	10/24/2019	10/23/2019	10/23/2019	10/24/2019	10/23/2019	10/24/2019	10/24/2019
Sample Method		Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Comments														Field Duplicate
Volatile Organic Compounds														
Acetone	12000	U (3.3)	U (3.3)	U (7.4)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	5.5 J (3.3)	U (3.3)	U (3.3)
Benzene	5.0	U (0.079)	U (0.079)	0.49 J (0.13)	U (0.079)	U (0.079)	0.31 J (0.079)	U (0.079)	U (0.079)	0.15 J (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)
Bromodichloromethane	80	U (0.17)	U (0.17)	1.5 (0.14)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	0.43 J (0.17)	0.46 J (0.17)
Bromoform	80	U (0.21)	6.0 (0.21)	4.5 (0.28)	U (0.21)	3.1 (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	2.6 (0.21)	3.7 (0.21)	U (0.21)	U (0.21)
Bromomethane	7.0	U (0.32)	U (0.32)	U (2.8)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)
2-Butanone	4900	U (0.70)	U (0.70)	U (1.8)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	0.97 J (0.70)	U (0.70)	U (0.70)
Carbon Disulfide	720	U (0.16)	U (0.16)	0.69 J (0.086)	U (0.16)	U (0.16)	1.8 J (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	10.0 (0.16)	10.1 (0.16)
Carbon Tetrachloride	5	U (0.084)	U (0.084)	1.4 (0.070)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	2.1 (0.084)	2.2 (0.084)
Chlorobenzene	100	U (0.13)	U (0.13)	U (0.17)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)
Chloroethane	12000	U (0.42)	U (0.42)	U (0.83)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)
Chloroform	80	U (0.10)	0.15 J (0.10)	20.2 (0.25)	U (0.10)	U (0.10)	2.9 (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	12.4 (0.10)	11.9 (0.10)
Chloromethane	190	U (0.16)	U (0.16)	2.4 (0.51)	U (0.16)	0.48 J (0.16)	1.4 (0.16)	U (0.16)	U (0.16)	U (0.16)	0.18 J (0.16)	0.94 J (0.16)	0.79 J (0.16)	0.83 J (0.16)
Dibromochloromethane	80	U (0.15)	0.26 J (0.15)	0.59 J (0.15)	U (0.15)	0.25 J (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	0.24 J (0.15)	U (0.15)	U (0.15)
1,1-Dichloroethane	2.4	U (0.097)	U (0.097)	2.5 (0.12)	U (0.097)	U (0.097)	1.3 (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	7.6 (0.097)	7.7 (0.097)
1,2-Dichloroethane	5.0	U (0.14)	U (0.14)	U (0.33)	U (0.14)	U (0.14)	0.64 J (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	0.17 J (0.14)	0.29 J (0.14)
1,1-Dichloroethene	7.0	0.32 J (0.22)	U (0.22)	90.4 (0.14)	U (0.22)	U (0.22)	9.7 (0.22)	U (0.22)	U (0.22)	8.1 (0.22)	U (0.22)	U (0.22)	80.6 (0.22)	77.6 (0.22)
cis-1,2-Dichloroethene	70	0.57 J (0.17)	9.9 (0.17)	5420 (340)	U (0.17)	0.24 J (0.17)	1880 (8.5)	0.40 J (0.17)	U (0.17)	542 (8.5)	0.85 J (0.17)	U (0.17)	103 (0.17)	101 (0.17)
trans-1,2-Dichloroethene	100	U (0.17)	1.5 (0.17)	U (340)	U (0.17)	U (0.17)	59.3 (0.17)	U (0.17)	U (0.17)	3.4 (0.17)	0.19 J (0.17)	U (0.17)	10.9 (0.17)	11.0 (0.17)
Ethyl Benzene	700	U (0.12)	U (0.12)	0.20 J (0.20)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	0.23 J (0.12)	0.19 J (0.12)
2-Hexanone	34	U (1.0)	U (1.0)	U (1.6)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	1000	U (0.56)	U (0.56)	U (1.3)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)
Methylene Chloride	5.0	U (0.27)	U (0.27)	4.8 (0.35)	U (0.27)	U (0.27)	1.3 (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	1.8 (0.27)	1.8 (0.27)
1,1,2,2-Tetrachloroethane	0.066	U (0.31)	U (0.31)	44.4 (0.23)	U (0.31)	U (0.31)	2.3 (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	4.2 (0.31)	4.3 (0.31)
Tetrachloroethene	5.0	U (0.22)	0.28 J (0.22)	42.5 (0.14)	U (0.22)	U (0.22)	0.55 J (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	8.7 (0.22)	8.5 (0.22)
Toluene	1000	U (0.14)	U (0.14)	5.3 (0.17)	U (0.14)	U (0.14)	0.56 J (0.14)	U (0.14)	U (0.14)	0.20 J (0.14)	U (0.14)	U (0.14)	5.3 (0.14)	5.3 (0.14)
1,1,1-Trichloroethane	200	U (0.12)	U (0.12)	76.8 (0.12)	U (0.12)	U (0.12)	0.45 J (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (240)	U (240)
1,1,2-Trichloroethane	5.0	U (0.10)	U (0.10)	3.5 (0.10)	U (0.10)	U (0.10)	0.15 J (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	2.9 (0.10)	2.8 (0.10)
Trichloroethene	5.0	292 (3.4)	1090 (3.4)	95800 (340)	U (0.17)	19.0 (0.17)	5410 (8.5)	1.9 (0.17)	U (0.17)	2180 (8.5)	41.9 (0.17)	2.4 (0.17)	68300 (340)	74500 (340)
Vinyl Chloride	2.0	U (0.11)	U (0.11)	376 J (220)	U (0.11)	U (0.11)	113 (0.11)	U (0.11)	U (0.11)	307 (5.5)	U (0.11)	U (0.11)	4.5 (0.11)	4.8 (0.11)
Metals														
Iron	NE	NM	NM	50.0 J (50.0)	NM	NM	69200 (50.0)	NM	NM	4060 (50.0)	NM	NM	NM	NM
Monitored Natural Attenuation Parameters (Laborator														
Acetic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
1-Butanecarboxylic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Butyric acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Organic Carbon (total)	NE	NM	NM	1000 (1000)	NM	NM	U (1000)	NM	NM	1300 (1000)	NM	NM	NM	NM
Organic Carbon (dissolved)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chloride	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Formic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
n-Hexanoic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Lactic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3-methyl-Butanoic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
4-methyl-pentanoic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Nitrogen	NE	NM	NM	200 (100)	NM	NM	400 (100)	NM	NM	86 J (100)	NM	NM	NM	NM
Nitrate/Nitrite	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Nitrogen, Nitrate	NE	NM	NM	200 (100)	NM	NM	400 (100)	NM	NM	U (100)	NM	NM	NM	NM
Nitrogen, Nitrite	NE	NM	NM	U (100)	NM	NM	U (100)	NM	NM	U (100)	NM	NM	NM	NM
Propionic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Pyruvic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Sulfate	NE	NM	NM	669000 (50000)	NM	NM	759000 (100000)	NM	NM	94400 (20000)	NM	NM	NM	NM
Gases														
Acetylene	NE	NM	NM	3.0 (0.50)	NM	NM	2.0 (0.50)	NM	NM	U (0.50)	NM	NM	NM	NM
Methane	NE	NM	NM	37 (0.50)	NM	NM	23 (0.50)	NM	NM	18 (0.50)	NM	NM	NM	NM
Ethane	NE	NM	NM	6.5 (0.10)	NM	NM	17 (0.10)	NM	NM	0.58 (0.10)	NM	NM	NM	NM
Ethene	NE	NM	NM	0.28 (0.10)	NM	NM	48 (0.10)	NM	NM	21 (0.10)	NM	NM	NM	NM
Hydrogen (H2) [nM]	NE	NM	NM	7.5 (1.0)	NM	NM	NM	NM	NM	1.2 (1.0)	NM	NM	NM	NM
Molecular Analyses														
BAV1 Vinyl Chloride Reductase [cells/mL]	NM	NM	NM	U (3.1)	NM	NM	U (2.3)	NM	NM	24.6 (0.5)	NM	NM	NM	NM
Dehalococcoides (DHC) [cells/mL]	NM	NM	NM	U (3.1)	NM	NM	U (2.3)	NM	NM	124 (0.5)	NM	NM	NM	NM
tceA Reductase [cells/mL]	NM	NM	NM	U (3.1)	NM	NM	U (2.3)	NM	NM	U (0.5)	NM	NM	NM	NM
Vinyl Chloride Reductase (vrcA) [cells/mL]	NM	NM	NM	U (3.1)	NM	NM	U (2.3)	NM	NM	U (0.5)	NM	NM	NM	NM

Notes:

1 All concentrations are presented in µg/L (ppb) except where otherwise noted.

2 Only compounds with at least one detection are shown.

3 The detection limit for VOCs is the sample quantitation limit. For other compounds the reporting detection limit is used.

4 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued Dec 2013 are double underlined.

U = Not detected
J = Estimated concentration
( ) = Method detection limit for VOCs; reporting detection limit for other analyses.

RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
µg/L = Micrograms per Liter
NE = Not established
NM = Not measured

Color Key
Onsite Wells
Offsite Wells
Plume Boundary Wells

RAMBOLL

TABLE 6A
SUMMARY OF MONITORING WELL GROUNDWATER SAMPLE ANALYTICAL RESULTS
(FOURTH QUARTER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued Dec 2013	MW-87	MW-89	MW-91	MW-93	MW-95	MW-178	MW-179	MW-183R	TMW-22R	ITMW-20	ITMW-20	ITMW-21	MW-26
Field Sample ID		MW-87-201910	MW-89-201910	MW-91-201910	MW-93-201910	MW-95-201910	MW-178-201910	MW-179-201910	MW-183R-201910	TMW-22R-201910	ITMW-20-201910	DUP-05-201910	ITMW-21-201910	MW-26-201910
Lab Sample ID(s)		60319115055/ 319040007	60318969023/ 318840004	60319241018	60319241010	60319241006/ 319530006	60319115030	60319241032	60319115047	60319115061/ 319040011	60319115016	60319115017	60319241019	60319115018
Sample Date		10/23/2019	10/22/2019	10/24/2019	10/24/2019	10/24/2019	10/23/2019	10/24/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/24/2019	10/23/2019
Sample Method		Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Comments												Field Duplicate		
Volatile Organic Compounds														
Acetone	12000	U (3.3)	U (3.3)	U (3.3)	U (7.4)	U (7.4)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)
Benzene	5.0	U (0.079)	U (0.079)	U (0.079)	U (0.13)	U (0.13)	U (0.079)	U (0.079)	U (0.079)	0.15 J (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)
Bromodichloromethane	80	U (0.17)	U (0.17)	U (0.17)	U (0.14)	U (0.14)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)
Bromoform	80	U (0.21)	U (0.21)	U (0.21)	0.65 J (0.28)	U (0.28)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)
Bromomethane	7.0	U (0.32)	U (0.32)	U (0.32)	U (2.8)	U (2.8)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)
2-Butanone	4900	U (0.70)	U (0.70)	U (0.70)	U (1.8)	U (1.8)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)
Carbon Disulfide	720	U (0.16)	U (0.16)	U (0.16)	U (0.086)	U (0.086)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
Carbon Tetrachloride	5	U (0.084)	U (0.084)	U (0.084)	U (0.070)	0.26 J (0.070)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)
Chlorobenzene	100	U (0.13)	U (0.13)	U (0.13)	U (0.17)	U (0.17)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)
Chloroethane	12000	U (0.42)	U (0.42)	U (0.42)	U (0.83)	U (0.83)	U (0.42)	U (0.42)	U (0.42)	1.5 (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)
Chloroform	80	U (0.10)	U (0.10)	U (0.10)	2.9 (0.25)	5.4 (0.25)	U (0.10)	U (0.10)	0.14 J (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Chloromethane	190	U (0.16)	U (0.16)	U (0.16)	U (0.51)	U (0.51)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
Dibromochloromethane	80	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)
1,1-Dichloroethane	2.4	1.1 (0.097)	U (0.097)	1.2 (0.097)	U (0.12)	0.50 J (0.12)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)
1,2-Dichloroethane	5.0	U (0.14)	U (0.14)	U (0.14)	U (0.33)	U (0.33)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1-Dichloroethene	7.0	2.9 (0.22)	U (0.22)	3.4 (0.22)	11.9 (0.14)	23.5 (0.14)	U (0.22)	U (0.22)	U (0.22)	0.72 J (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)
cis-1,2-Dichloroethene	70	22.4 (0.17)	0.51 J (0.17)	26.8 (0.17)	93.2 (0.18)	265 (34.0)	1.2 (0.17)	0.74 J (0.17)	U (0.17)	126 (0.17)	U (0.17)	U (0.17)	0.30 J (0.17)	U (0.17)
trans-1,2-Dichloroethene	100	0.89 J (0.17)	U (0.17)	0.47 J (0.17)	8.7 (0.082)	30.5 (0.082)	U (0.17)	U (0.17)	U (0.17)	1.1 (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)
Ethyl Benzene	700	U (0.12)	U (0.12)	U (0.12)	U (0.20)	U (0.20)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)
2-Hexanone	34	U (1.0)	U (1.0)	U (1.0)	U (1.6)	U (1.6)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	1000	U (0.56)	U (0.56)	U (0.56)	U (1.3)	U (1.3)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)
Methylene Chloride	5.0	U (0.27)	U (0.27)	U (0.27)	U (0.35)	2.3 (0.35)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)
1,1,2,2-Tetrachloroethane	0.066	U (0.31)	U (0.31)	U (0.31)	U (0.23)	1.0 (0.23)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)
Tetrachloroethene	5.0	3.9 (0.22)	U (0.22)	3.4 (0.22)	4.2 (0.14)	8.1 (0.14)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)
Toluene	1000	U (0.14)	U (0.14)	U (0.14)	0.18 J (0.17)	U (0.17)	U (0.14)	U (0.14)	U (0.14)	0.23 J (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1,1-Trichloroethane	200	U (0.12)	U (0.12)	U (0.12)	0.39 J (0.12)	2.1 (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)
1,1,2-Trichloroethane	5.0	U (0.10)	U (0.10)	U (0.10)	0.79 J (0.10)	1.8 (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Trichloroethene	5.0	315 (1.7)	9.0 (0.17)	437 (1.7)	14700 (34.0)	24700 (34.0)	4.1 (0.17)	23.7 (0.17)	1.2 (0.17)	146 (0.17)	U (0.17)	U (0.17)	6.0 (0.17)	U (0.17)
Vinyl Chloride	2.0	0.21 J (0.11)	U (0.11)	0.18 J (0.11)	2.1 (0.17)	25.9 (0.17)	U (0.11)	U (0.11)	U (0.11)	7.9 (0.11)	U (0.11)	U (0.11)	U (0.11)	U (0.11)
Metals														
Iron	NE	82.8 (50.0)	63.3 (50.0)	NM	NM	19.1 J (50.0)	NM	NM	NM	21200 (50.0)	NM	NM	NM	NM
Monitored Natural Attenuation Parameters (Laborator														
Acetic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	180 (100)	NM	NM	NM	NM
1-Butanecarboxylic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	100 U (100)	NM	NM	NM	NM
Butyric acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	100 U (100)	NM	NM	NM	NM
Organic Carbon (total)	NE	650 J (1000)	1100 (1000)	NM	NM	U (1000)	NM	NM	NM	2900 (1000)	NM	NM	NM	NM
Organic Carbon (dissolved)	NE	NM	NM	NM	NM	NM	NM	NM	NM	U (1000)	NM	NM	NM	NM
Chloride	NE	NM	NM	NM	NM	NM	NM	NM	NM	189000 (20000)	NM	NM	NM	NM
Formic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	500 U (500)	NM	NM	NM	NM
n-Hexanoic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	200 U (200)	NM	NM	NM	NM
Lactic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	200 U (200)	NM	NM	NM	NM
3-methyl-Butanoic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	100 U (100)	NM	NM	NM	NM
4-methyl-pentanoic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	200 U (200)	NM	NM	NM	NM
Nitrogen	NE	2400 (100)	96300 (2000)	NM	NM	970 (100)	NM	NM	NM	75 J (100)	NM	NM	NM	NM
Nitrate/Nitrite	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Nitrogen, Nitrate	NE	2400 (100)	96300 (2000)	NM	NM	970 (100)	NM	NM	NM	U (100)	NM	NM	NM	NM
Nitrogen, Nitrite	NE	U (100)	U (2000)	NM	NM	U (100)	NM	NM	NM	69 J (100)	NM	NM	NM	NM
Propionic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	100 (100)	NM	NM	NM	NM
Pyruvic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	100 U (100)	NM	NM	NM	NM
Sulfate	NE	13600 (1000)	2900 (1000)	NM	NM	24400 (2000)	NM	NM	NM	2800 (1000)	NM	NM	NM	NM
Gases														
Acetylene	NE	U (0.50)	U (0.50)	NM	NM	U (0.50)	NM	NM	NM	NM	NM	NM	NM	NM
Methane	NE	0.59 (0.50)	48 (0.50)	NM	NM	4.6 (0.50)	NM	NM	NM	7800 (0.50)	NM	NM	NM	NM
Ethane	NE	U (0.10)	U (0.10)	NM	NM	0.48 (0.10)	NM	NM	NM	2.1 (0.10)	NM	NM	NM	NM
Ethene	NE	U (0.10)	U (0.10)	NM	NM	U (0.10)	NM	NM	NM	4.1 (0.10)	NM	NM	NM	NM
Hydrogen (H2) [nM]	NE	1.1 (1.0)	1.8 (1.0)	NM	NM	2.6 (1.0)	NM	NM	NM	NM	NM	NM	NM	NM
Molecular Analyses														
BAV1 Vinyl Chloride Reductase [cells/mL]	NM	U (0.5)	U (0.5)	NM	NM	U (3.1)	NM	NM	NM	NM	NM	NM	NM	NM
Dehalococcoides (DHC) [cells/mL]	NM	0.5 J (0.5)	U (0.5)	NM	NM	U (3.1)	NM	NM	NM	NM	NM	NM	NM	NM
tceA Reductase [cells/mL]	NM	U (0.5)	U (0.5)	NM	NM	U (3.1)	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride Reductase (vrcA) [cells/mL]	NM	U (0.5)	U (0.5)	NM	NM	U (3.1)	NM	NM	NM	NM	NM	NM	NM	NM

Notes:

1 All concentrations are presented in µg/L (ppb) except where otherwise noted.

2 Only compounds with at least one detection are shown.

3 The detection limit for VOCs is the sample quantitation limit. For other compounds the reporting detection limit is used.

4 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued Dec 2013 are double underlined.

U = Not detected
J = Estimated concentration
( ) = Method detection limit for VOCs; reporting detection limit for other analyses.
RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
µg/L = Micrograms per Liter
NE = Not established
NM = Not measured

Color Key
Onsite Wells
Offsite Wells
Plume Boundary Wells

RAMBOLL

TABLE 6A
SUMMARY OF MONITORING WELL GROUNDWATER SAMPLE ANALYTICAL RESULTS
(FOURTH QUARTER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued Dec 2013	MW-29	MW-39R	MW-40R	MW-50R	MW-55R	MW-55R	MW-60R	MW-61R	MW-63R	MW-68	MW-96	MW-97	MW-98
Field Sample ID		MW-29-201910	MW-39R-201910	MW-40R-201910	MW-50R-201910	MW-55R-201910	DUP-04-2019110	MW-60R-201910	MW-61R-201910	MW-63R-201910	MW-68-201910	MW-96-201910	MW-97-201910	MW-98-201910
Lab Sample ID(s)		60319115014	60318969012	60318969006	60319115052/ 319040004	60319115025	60319115026	60319115023	60319115043/ 319040002	60318969011	60318969005	60319115006	60319115005	60319115034
Sample Date		10/23/2019	10/22/2019	10/22/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/22/2019	10/22/2019	10/23/2019	10/23/2019	10/23/2019
Sample Method		Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Comments							Field Duplicate							
Volatile Organic Compounds														
Acetone	12000	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)
Benzene	5.0	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)
Bromodichloromethane	80	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)
Bromoform	80	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)
Bromomethane	7.0	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)
2-Butanone	4900	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)
Carbon Disulfide	720	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
Carbon Tetrachloride	5	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)
Chlorobenzene	100	4.6 (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	0.17 J (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)
Chloroethane	12000	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)
Chloroform	80	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Chloromethane	190	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
Dibromochloromethane	80	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)
1,1-Dichloroethane	2.4	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)
1,2-Dichloroethane	5.0	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1-Dichloroethene	7.0	U (0.22)	U (0.22)	U (0.22)	U (0.22)	0.39 J (0.22)	0.34 J (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)
cis-1,2-Dichloroethene	70	U (0.17)	U (0.17)	U (0.17)	U (0.17)	0.98 J (0.17)	1.2 (0.17)	U (0.17)	1.7 (0.17)	0.59 J (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)
trans-1,2-Dichloroethene	100	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)
Ethyl Benzene	700	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)
2-Hexanone	34	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	1000	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)
Methylene Chloride	5.0	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)
1,1,2,2-Tetrachloroethane	0.066	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)
Tetrachloroethene	5.0	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)
Toluene	1000	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1,1-Trichloroethane	200	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)
1,1,2-Trichloroethane	5.0	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Trichloroethene	5.0	U (0.17)	U (0.17)	U (0.17)	0.61 J (0.17)	26.4 (0.17)	27.7 (0.17)	U (0.17)	20.8 (0.17)	7.4 (0.17)	U (0.17)	U (0.17)	U (0.17)	0.38 J (0.17)
Vinyl Chloride	2.0	U (0.11)	U (0.11)	U (0.11)	U (0.11)	0.16 J (0.11)	0.18 J (0.11)	U (0.11)	U (0.11)	U (0.11)	U (0.11)	U (0.11)	U (0.11)	U (0.11)
Metals														
Iron	NE	NM	NM	NM	728 (50.0)	NM	NM	NM	9690 (50.0)	NM	NM	NM	NM	NM
Monitored Natural Attenuation Parameters (Laborator														
Acetic acid	NE	NM	NM	NM	NM	NM	NM	NM	340 (100)	NM	NM	NM	NM	NM
1-Butanecarboxylic Acid	NE	NM	NM	NM	NM	NM	NM	NM	100 U (100)	NM	NM	NM	NM	NM
Butyric acid	NE	NM	NM	NM	NM	NM	NM	NM	100 U (100)	NM	NM	NM	NM	NM
Organic Carbon (total)	NE	NM	NM	NM	1800 (1000)	NM	NM	NM	380 J (1000)	NM	NM	NM	NM	NM
Organic Carbon (dissolved)	NE	NM	NM	NM	NM	NM	NM	NM	570 J (1000)	NM	NM	NM	NM	NM
Chloride	NE	NM	NM	NM	NM	NM	NM	NM	109000 (20000)	NM	NM	NM	NM	NM
Formic acid	NE	NM	NM	NM	NM	NM	NM	NM	500 U (500)	NM	NM	NM	NM	NM
n-Hexanoic acid	NE	NM	NM	NM	NM	NM	NM	NM	200 U (200)	NM	NM	NM	NM	NM
Lactic Acid	NE	NM	NM	NM	NM	NM	NM	NM	200 U (200)	NM	NM	NM	NM	NM
3-methyl-Butanoic acid	NE	NM	NM	NM	NM	NM	NM	NM	100 U (100)	NM	NM	NM	NM	NM
4-methyl-pentanoic acid	NE	NM	NM	NM	NM	NM	NM	NM	200 U (200)	NM	NM	NM	NM	NM
Nitrogen	NE	NM	NM	NM	43 J (100)	NM	NM	NM	69 J (100)	NM	NM	NM	NM	NM
Nitrate/Nitrite	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Nitrogen, Nitrate	NE	NM	NM	NM	U (100)	NM	NM	NM	U (100)	NM	NM	NM	NM	NM
Nitrogen, Nitrite	NE	NM	NM	NM	U (100)	NM	NM	NM	U (100)	NM	NM	NM	NM	NM
Propionic Acid	NE	NM	NM	NM	NM	NM	NM	NM	220 (100)	NM	NM	NM	NM	NM
Pyruvic Acid	NE	NM	NM	NM	NM	NM	NM	NM	U (100)	NM	NM	NM	NM	NM
Sulfate	NE	NM	NM	NM	17100 (1000)	NM	NM	NM	12100 (1000)	NM	NM	NM	NM	NM
Gases														
Acetylene	NE	NM	NM	NM	U (0.50)	NM	NM	NM	NM	NM	NM	NM	NM	NM
Methane	NE	NM	NM	NM	310 (0.50)	NM	NM	NM	3400 (0.50)	NM	NM	NM	NM	NM
Ethane	NE	NM	NM	NM	0.18 (0.10)	NM	NM	NM	U (0.10)	NM	NM	NM	NM	NM
Ethene	NE	NM	NM	NM	U (0.10)	NM	NM	NM	U (0.10)	NM	NM	NM	NM	NM
Hydrogen (H2) [nM]	NE	NM	NM	NM	1.5 (1.0)	NM	NM	NM	NM	NM	NM	NM	NM	NM
Molecular Analyses														
BAV1 Vinyl Chloride Reductase [cells/mL]	NM	NM	NM	NM	U (1.7)	NM	NM	NM	NM	NM	NM	NM	NM	NM
Dehalococcoides (DHC) [cells/mL]	NM	NM	NM	NM	2.3 (1.7)	NM	NM	NM	NM	NM	NM	NM	NM	NM
tceA Reductase [cells/mL]	NM	NM	NM	NM	U (1.7)	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride Reductase (vrcA) [cells/mL]	NM	NM	NM	NM	U (1.7)	NM	NM	NM	NM	NM	NM	NM	NM	NM

Notes:

1 All concentrations are presented in µg/L (ppb) except where otherwise noted.

2 Only compounds with at least one detection are shown.

3 The detection limit for VOCs is the sample quantitation limit. For other compounds the reporting detection limit is used.

4 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued Dec 2013 are double underlined.

U = Not detected
J = Estimated concentration
( ) = Method detection limit for VOCs; reporting detection limit for other analyses.

RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
µg/L = Micrograms per Liter
NE = Not established
NM = Not measured

Color Key
Onsite Wells
Offsite Wells
Plume Boundary Wells

RAMBOLL

TABLE 6A
SUMMARY OF MONITORING WELL GROUNDWATER SAMPLE ANALYTICAL RESULTS
(FOURTH QUARTER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued Dec 2013	MW-99	MW-184	MW-185	MW-186	MW-187	MW-188	MW-189	MW-189	MW-190	MW-191	MW-192	MW-194	MW-195
Field Sample ID		MW-99-201910	MW-184-201910	MW-185-201910	MW-186-201910	MW-187-201910	MW-188-201910	MW-189-201910	DUP-08-201910	MW-190-201910	MW-191-201910	MW-192-201910	MW-194-201910	MW-195-201910
Lab Sample ID(s)		60319115048	60319115046	60319241013	60319241003/ 319530003	60318969002	60318969003	60319241011	60319241027	60318969008	60318969007	60318969009	60319115042/ 319040001	60318969015
Sample Date		10/23/2019	10/23/2019	10/24/2019	10/24/2019	10/22/2019	10/22/2019	10/24/2019	10/24/2019	10/22/2019	10/22/2019	10/22/2019	10/23/2019	10/22/2019
Sample Method		Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Comments									Field Duplicate					
Volatile Organic Compounds														
Acetone	12000	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	4.2 J (3.3)	U (3.3)
Benzene	5.0	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)
Bromodichloromethane	80	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)
Bromoform	80	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)
Bromomethane	7.0	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)
2-Butanone	4900	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)
Carbon Disulfide	720	U (0.16)	U (0.16)	U (0.16)	0.81 J (0.16)	U (0.16)	0.19 J (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
Carbon Tetrachloride	5	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)
Chlorobenzene	100	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)
Chloroethane	12000	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)
Chloroform	80	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	0.23 J (0.10)	0.23 J (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Chloromethane	190	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
Dibromochloromethane	80	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)
1,1-Dichloroethane	2.4	U (0.097)	U (0.097)	0.27 J (0.097)	U (0.097)	0.31 J (0.097)	U (0.097)	0.84 J (0.097)	0.79 J (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)
1,2-Dichloroethane	5.0	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	0.15 J (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1-Dichloroethene	7.0	0.56 J (0.22)	U (0.22)	0.67 J (0.22)	U (0.22)	U (0.22)	U (0.22)	1.2 (0.22)	0.99 J (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)
cis-1,2-Dichloroethene	70	4.8 (0.17)	U (0.17)	6.3 (0.17)	3.0 (0.17)	2.2 (0.17)	U (0.17)	8.9 (0.17)	8.7 (0.17)	0.21 J (0.17)	U (0.17)	U (0.17)	0.97 J (0.17)	U (0.17)
trans-1,2-Dichloroethene	100	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)
Ethyl Benzene	700	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)
2-Hexanone	34	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	1000	U (0.56)	U (0.56)	U (0.56)	0.68 J (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)
Methylene Chloride	5.0	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)
1,1,2,2-Tetrachloroethane	0.066	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)
Tetrachloroethene	5.0	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	0.23 J (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)
Toluene	1000	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1,1-Trichloroethane	200	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	0.18 J (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)
1,1,2-Trichloroethane	5.0	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Trichloroethene	5.0	72.6 (0.17)	U (0.17)	52.7 (0.17)	2.9 (0.17)	3.5 (0.17)	U (0.17)	510 (1.7)	506 (1.7)	U (0.17)	U (0.17)	U (0.17)	10.8 (0.17)	U (0.17)
Vinyl Chloride	2.0	U (0.11)	U (0.11)	0.12 J (0.11)	2.2 (0.11)	U (0.11)	U (0.11)	0.47 J (0.11)	0.50 J (0.11)	U (0.11)	U (0.11)	U (0.11)	U (0.11)	U (0.11)
Metals														
Iron	NE	NM	NM	NM	39400 (50.0)	NM	NM	NM	NM	NM	NM	NM	6940 (50.0)	NM
Monitored Natural Attenuation Parameters (Laborator														
Acetic acid	NE	NM	NM	NM	1400 (100)	NM	NM	NM	NM	NM	NM	NM	1800 (100)	NM
1-Butanecarboxylic Acid	NE	NM	NM	NM	100 U (100)	NM	NM	NM	NM	NM	NM	NM	100 U (100)	NM
Butyric acid	NE	NM	NM	NM	100 U (100)	NM	NM	NM	NM	NM	NM	NM	100 U (100)	NM
Organic Carbon (total)	NE	NM	NM	NM	40100 (10000)	NM	NM	NM	NM	NM	NM	NM	630 J (1000)	NM
Organic Carbon (dissolved)	NE	NM	NM	NM	34100 (10000)	NM	NM	NM	NM	NM	NM	NM	580 J (1000)	NM
Chloride	NE	NM	NM	NM	155000 (10000)	NM	NM	NM	NM	NM	NM	NM	155000 (20000)	NM
Formic acid	NE	NM	NM	NM	500 U (500)	NM	NM	NM	NM	NM	NM	NM	500 U (500)	NM
n-Hexanoic acid	NE	NM	NM	NM	200 U (200)	NM	NM	NM	NM	NM	NM	NM	200 U (200)	NM
Lactic Acid	NE	NM	NM	NM	200 U (200)	NM	NM	NM	NM	NM	NM	NM	200 U (200)	NM
3-methyl-Butanoic acid	NE	NM	NM	NM	100 U (100)	NM	NM	NM	NM	NM	NM	NM	100 U (100)	NM
4-methyl-pentanoic acid	NE	NM	NM	NM	200 U (200)	NM	NM	NM	NM	NM	NM	NM	200 U (200)	NM
Nitrogen	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	53 J (100)	NM
Nitrate/Nitrite	NE	NM	NM	NM	160 (100)	NM	NM	NM	NM	NM	NM	NM	NM	NM
Nitrogen, Nitrate	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	U (100)	NM
Nitrogen, Nitrite	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	U (100)	NM
Propionic Acid	NE	NM	NM	NM	460 (100)	NM	NM	NM	NM	NM	NM	NM	260 (100)	NM
Pyruvic Acid	NE	NM	NM	NM	U (100)	NM	NM	NM	NM	NM	NM	NM	U (100)	NM
Sulfate	NE	NM	NM	NM	6500 (1000)	NM	NM	NM	NM	NM	NM	NM	10200 (1000)	NM
Gases														
Acetylene	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Methane	NE	NM	NM	NM	12000 (0.50)	NM	NM	NM	NM	NM	NM	NM	9200 (0.50)	NM
Ethane	NE	NM	NM	NM	U (0.10)	NM	NM	NM	NM	NM	NM	NM	0.24 (0.10)	NM
Ethene	NE	NM	NM	NM	0.55 (0.10)	NM	NM	NM	NM	NM	NM	NM	0.12 (0.10)	NM
Hydrogen (H2) [nM]	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Molecular Analyses														
BAV1 Vinyl Chloride Reductase [cells/mL]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Dehalococcoides (DHC) [cells/mL]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
tceA Reductase [cells/mL]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride Reductase (vrcA) [cells/mL]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

Notes:

1 All concentrations are presented in µg/L (ppb) except where otherwise noted.

2 Only compounds with at least one detection are shown.

3 The detection limit for VOCs is the sample quantitation limit. For other compounds the reporting detection limit is used.

4 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued Dec 2013 are double underlined.

U = Not detected
J = Estimated concentration
( ) = Method detection limit for VOCs; reporting detection limit for other analyses.

RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
µg/L = Micrograms per Liter
NE = Not established
NM = Not measured

Color Key
Onsite Wells
Offsite Wells
Plume Boundary Wells

RAMBOLL

TABLE 6A
SUMMARY OF MONITORING WELL GROUNDWATER SAMPLE ANALYTICAL RESULTS
(FOURTH QUARTER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued Dec 2013	MW-196	IW-73	IW-77	IW-78	MW-46R	MW-46R	MW-56R	MW-57R	MW-58R	MW-58R	MW-62R	MW-82	MW-82
Field Sample ID		MW-196-201910	IW-73-201910	IW-77-201910	IW-78-201910	MW-46R-201910	DUP-03-201910	MW-56R-201910	MW-57R-201910	MW-58R-201910	DUP-01-201910	MW-62R-201910	MW-82-201910	DUP-02-201910
Lab Sample ID(s)		60319115024	60322105001/ 322520001	60319115049	60319115009	60319115045	60319115022	60319115001	60319115002	60319115056/ 319040008	60319115058	60318969004	60319115007	60319115008
Sample Date		10/23/2019	11/20/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/22/2019	10/23/2019	10/23/2019
Sample Method		Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Comments							Field Duplicate				Field Duplicate			Field Duplicate
Volatile Organic Compounds														
Acetone	12000	U (3.3)	U (3.3)	3.4 J (3.3)	5.3 J (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)
Benzene	5.0	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)
Bromodichloromethane	80	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)
Bromoform	80	U (0.21)	U (0.21)	0.74 J (0.21)	95.6 (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	0.79 J (0.21)	U (0.21)
Bromomethane	7.0	U (0.32)	U (0.32)	U (0.32)	0.82 J (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	0.40 J (0.32)	U (0.32)
2-Butanone	4900	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)
Carbon Disulfide	720	U (0.16)	U (0.16)	U (0.16)	0.21 J (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
Carbon Tetrachloride	5	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)
Chlorobenzene	100	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)
Chloroethane	12000	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)
Chloroform	80	U (0.10)	0.14 J (0.10)	0.18 J (0.10)	U (0.10)	0.13 J (0.10)	0.12 J (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Chloromethane	190	U (0.16)	U (0.16)	U (0.16)	1.1 (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	0.39 J (0.16)	0.50 J (0.16)
Dibromochloromethane	80	U (0.15)	U (0.15)	U (0.15)	2.8 (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)
1,1-Dichloroethane	2.4	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)
1,2-Dichloroethane	5.0	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	0.14 J (0.14)
1,1-Dichloroethene	7.0	U (0.22)	0.73 J (0.22)	0.70 J (0.22)	U (0.22)	2.4 (0.22)	1.9 (0.22)	2.0 (0.22)	1.6 (0.22)	1.8 (0.22)	1.8 (0.22)	U (0.22)	U (0.22)	U (0.22)
cis-1,2-Dichloroethene	70	U (0.17)	7.0 (0.17)	6.8 (0.17)	U (0.17)	22.1 (0.17)	16.5 (0.17)	16.9 (0.17)	12.4 (0.17)	9.1 (0.17)	9.6 (0.17)	U (0.17)	1.1 (0.17)	0.99 J (0.17)
trans-1,2-Dichloroethene	100	U (0.17)	U (0.17)	0.48 J (0.17)	U (0.17)	0.72 J (0.17)	0.49 J (0.17)	0.30 J (0.17)	0.24 J (0.17)	0.19 J (0.17)	0.25 J (0.17)	U (0.17)	0.17 J (0.17)	U (0.17)
Ethyl Benzene	700	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)
2-Hexanone	34	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	1000	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)
Methylene Chloride	5.0	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)
1,1,2,2-Tetrachloroethane	0.066	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)
Tetrachloroethene	5.0	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)
Toluene	1000	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1,1-Trichloroethane	200	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)
1,1,2-Trichloroethane	5.0	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Trichloroethene	5.0	U (0.17)	215 (0.85)	180 (1.7)	2.4 (0.17)	555 (1.7)	560 (1.7)	649 (3.4)	317 (1.7)	299 (1.7)	311 (1.7)	U (0.17)	55.6 (0.17)	55.9 (0.17)
Vinyl Chloride	2.0	U (0.11)	0.16 J (0.11)	U (0.11)	U (0.11)	0.69 J (0.11)	0.56 J (0.11)	0.32 J (0.11)	0.39 J (0.11)	0.51 J (0.11)	0.55 J (0.11)	U (0.11)	U (0.11)	U (0.11)
Metals														
Iron	NE	NM	637 (50.0)	NM	NM	NM	NM	NM	NM	732 (50.0)		NM	NM	NM
Monitored Natural Attenuation Parameters (Laborator														
Acetic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
1-Butanecarboxylic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Butyric acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Organic Carbon (total)	NE	NM	400 J (1000)	NM	NM	NM	NM	NM	NM	400 J (1000)	NM	NM	NM	NM
Organic Carbon (dissolved)	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chloride	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Formic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
n-Hexanoic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Lactic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3-methyl-Butanoic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
4-methyl-pentanoic acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Nitrogen	NE	NM	U (100)	NM	NM	NM	NM	NM	NM	U (100)	NM	NM	NM	NM
Nitrate/Nitrite	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Nitrogen, Nitrate	NE	NM	U (100)	NM	NM	NM	NM	NM	NM	U (100)	NM	NM	NM	NM
Nitrogen, Nitrite	NE	NM	U (100)	NM	NM	NM	NM	NM	NM	U (100)	NM	NM	NM	NM
Propionic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Pyruvic Acid	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Sulfate	NE	NM	3500 (1000)	NM	NM	NM	NM	NM	NM	1700 (1000)	NM	NM	NM	NM
Gases														
Acetylene	NE	NM	U (0.50)	NM	NM	NM	NM	NM	NM	U (0.50)	NM	NM	NM	NM
Methane	NE	NM	2.6 (0.50)	NM	NM	NM	NM	NM	NM	49 (0.50)	NM	NM	NM	NM
Ethane	NE	NM	U (0.10)	NM	NM	NM	NM	NM	NM	U (0.10)	NM	NM	NM	NM
Ethene	NE	NM	U (0.10)	NM	NM	NM	NM	NM	NM	0.36 (0.10)	NM	NM	NM	NM
Hydrogen (H2) [nM]	NE	NM	2.7 J (1.0)	NM	NM	NM	NM	NM	NM	U (1.0)	NM	NM	NM	NM
Molecular Analyses														
BAV1 Vinyl Chloride Reductase [cells/mL]	NM	NM	NM	NM	NM	NM	NM	NM	NM	U (0.7)	NM	NM	NM	NM
Dehalocaccoides (DHC) [cells/mL]	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.4 J (0.7)	NM	NM	NM	NM
tceA Reductase [cells/mL]	NM	NM	NM	NM	NM	NM	NM	NM	NM	U (0.7)	NM	NM	NM	NM
Vinyl Chloride Reductase (vrcA) [cells/mL]	NM	NM	NM	NM	NM	NM	NM	NM	NM	U (0.7)	NM	NM	NM	NM

Notes:

1 All concentrations are presented in µg/L (ppb) except where otherwise noted.

2 Only compounds with at least one detection are shown.

3 The detection limit for VOCs is the sample quantitation limit. For other compounds the reporting detection limit is used.

4 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued Dec 2013 are double underlined.

U = Not detected
J = Estimated concentration
( ) = Method detection limit for VOCs; reporting detection limit for other analyses.

RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
µg/L = Micrograms per Liter
NE = Not established
NM = Not measured

Color Key
Onsite Wells
Offsite Wells
Plume Boundary Wells

RAMBOLL

TABLE 6A
SUMMARY OF MONITORING WELL GROUNDWATER SAMPLE ANALYTICAL RESULTS
(FOURTH QUARTER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued Dec 2013	MW-175	MW-176	MW-182	RW-69	MW-37	MW-184	MW-194	MW-195	MW-196	TMW-10	TMW-11	TMW-12	TMW-14
Field Sample ID		MW-175-201910	MW-176-201910	MW-182-201910	RW-69-201910	MW-37-201910	MW-184-201910	MW-194-201910	MW-195-201910	MW-196-201910	TMW-10-201910	TMW-11-201910	TMW-12-201910	TMW-14-201910
Lab Sample ID(s)		60319115011	60318969001	60319115013	60319115053/ 319040005	60319241022	60319115046	60319115042/ 319040001	60318969015	60319115024	60318969022/ 318780003	60318969021/ 318780002	60319115050	60319115051
Sample Date		10/23/2019	10/22/2019	10/23/2019	10/23/2019	10/24/2019	10/23/2019	10/23/2019	10/22/2019	10/23/2019	10/22/2019	10/22/2019	10/23/2019	10/23/2019
Sample Method		Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Comments														
Volatile Organic Compounds														
Acetone	12000	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (7.4)	U (3.3)	4.2 J (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)
Benzene	5.0	U (0.079)	U (0.079)	0.16 J (0.079)	U (0.079)	0.15 J (0.13)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)
Bromodichloromethane	80	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.14)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)
Bromoform	80	U (0.21)	U (0.21)	U (0.21)	U (0.21)	0.64 J (0.28)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)
Bromomethane	7.0	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (2.8)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)
2-Butanone	4900	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (1.8)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)
Carbon Disulfide	720	0.40 J (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.086)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	0.35 J (0.16)	U (0.16)	U (0.16)	U (0.16)
Carbon Tetrachloride	5	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.070)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)
Chlorobenzene	100	U (0.13)	U (0.13)	6.7 (0.13)	U (0.13)	U (0.17)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)
Chloroethane	12000	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.83)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)
Chloroform	80	U (0.10)	U (0.10)	U (0.10)	U (0.10)	2.1 (0.25)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Chloromethane	190	U (0.16)	U (0.16)	U (0.16)	U (0.16)	0.89 J (0.51)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
Dibromochloromethane	80	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)
1,1-Dichloroethane	2.4	U (0.097)	U (0.097)	U (0.097)	U (0.097)	2.2 (0.12)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)
1,2-Dichloroethane	5.0	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.33)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1-Dichloroethene	7.0	0.59 J (0.22)	1.6 (0.22)	U (0.22)	1.5 (0.22)	6.2 (0.14)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	1.4 (0.22)	U (0.22)
cis-1,2-Dichloroethene	70	2.2 (0.17)	28.8 (0.17)	1.8 (0.17)	5.6 (0.17)	1950 (17.0)	U (0.17)	0.97 J (0.17)	U (0.17)	U (0.17)	1.4 (0.17)	0.79 J (0.17)	10.1 (0.17)	0.60 J (0.17)
trans-1,2-Dichloroethene	100	U (0.17)	0.47 J (0.17)	U (0.17)	U (0.17)	32.7 (0.082)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	0.21 J (0.17)	U (0.17)
Ethyl Benzene	700	U (0.12)	U (0.12)	U (0.12)	U (0.12)	0.74 J (0.20)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)
2-Hexanone	34	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.6)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	1000	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (1.3)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	0.78 J (0.56)	U (0.56)	U (0.56)	U (0.56)
Methylene Chloride	5.0	U (0.27)	U (0.27)	U (0.27)	U (0.27)	5.8 (0.35)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)
1,1,2,2-Tetrachloroethane	0.066	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.23)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)
Tetrachloroethene	5.0	U (0.22)	U (0.22)	U (0.22)	U (0.22)	6.4 (0.14)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)
Toluene	1000	U (0.14)	U (0.14)	U (0.14)	U (0.14)	7.0 (0.17)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	0.20 J (0.14)	U (0.14)	U (0.14)
1,1,1-Trichloroethane	200	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)
1,1,2-Trichloroethane	5.0	U (0.10)	U (0.10)	U (0.10)	U (0.10)	0.48 J (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Trichloroethene	5.0	138 (0.17)	317 (1.7)	26.3 (0.17)	150 (0.17)	12100 (17.0)	U (0.17)	10.8 (0.17)	U (0.17)	U (0.17)	8.6 (0.17)	0.70 J (0.17)	471 (1.7)	2.6 (0.17)
Vinyl Chloride	2.0	0.16 J (0.11)	16.5 (0.11)	U (0.11)	0.53 J (0.11)	662 (11.0)	U (0.11)	U (0.11)	U (0.11)	U (0.11)	2.4 (0.11)	0.29 J (0.11)	0.26 J (0.11)	U (0.11)
Metals														
Iron	NE	NM	NM	NM	638 (50.0)	NM	NM	6940 (50.0)	NM	NM	22100 (50.0)	7540 (50.0)	NM	NM
Monitored Natural Attenuation Parameters (Laborator														
Acetic acid	NE	NM	NM	NM	NM	NM	NM	1800 (100)	NM	NM	630 (100)	190 (100)	NM	NM
1-Butanecarboxylic Acid	NE	NM	NM	NM	NM	NM	NM	100 U (100)	NM	NM	100 U (100)	100 U (100)	NM	NM
Butyric acid	NE	NM	NM	NM	NM	NM	NM	100 U (100)	NM	NM	100 U (100)	100 U (100)	NM	NM
Organic Carbon (total)	NE	NM	NM	NM	880 J (1000)	NM	NM	630 J (1000)	NM	NM	16100 (5000)	1700 (1000)	NM	NM
Organic Carbon (dissolved)	NE	NM	NM	NM	NM	NM	NM	580 J (1000)	NM	NM	16400 (5000)	1400 J+ (1000)	NM	NM
Chloride	NE	NM	NM	NM	NM	NM	NM	155000 (20000)	NM	NM	198000 (10000)	162000 (10000)	NM	NM
Formic acid	NE	NM	NM	NM	NM	NM	NM	500 U (500)	NM	NM	500 U (500)	500 U (500)	NM	NM
n-Hexanoic acid	NE	NM	NM	NM	NM	NM	NM	200 U (200)	NM	NM	200 U (200)	200 U (200)	NM	NM
Lactic Acid	NE	NM	NM	NM	NM	NM	NM	200 U (200)	NM	NM	200 U (200)	200 U (200)	NM	NM
3-methyl-Butanoic acid	NE	NM	NM	NM	NM	NM	NM	100 U (100)	NM	NM	100 U (100)	100 U (100)	NM	NM
4-methyl-pentanoic acid	NE	NM	NM	NM	NM	NM	NM	200 U (200)	NM	NM	200 U (200)	200 U (200)	NM	NM
Nitrogen	NE	NM	NM	NM	U (100)	NM	NM	53 J (100)	NM	NM	U (100)	U (100)	NM	NM
Nitrate/Nitrite	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Nitrogen, Nitrate	NE	NM	NM	NM	U (100)	NM	NM	U (100)	NM	NM	U (100)	U (100)	NM	NM
Nitrogen, Nitrite	NE	NM	NM	NM	U (100)	NM	NM	U (100)	NM	NM	U (100)	U (100)	NM	NM
Propionic Acid	NE	NM	NM	NM	NM	NM	NM	260 (100)	NM	NM	300 (100)	400 (100)	NM	NM
Pyruvic Acid	NE	NM	NM	NM	NM	NM	NM	100 U (100)	NM	NM	100 U (100)	100 U (100)	NM	NM
Sulfate	NE	NM	NM	NM	1600 (1000)	NM	NM	10200 (1000)	NM	NM	1100 (1000)	1100 (1000)	NM	NM
Gases														
Acetylene	NE	NM	NM	NM	U (0.50)	NM	NM	NM	NM	NM	U (0.50)	U (0.50)	NM	NM
Methane	NE	NM	NM	NM	68 (0.50)	NM	NM	9200 (0.50)	NM	NM	14000 (0.50)	13000 (0.50)	NM	NM
Ethane	NE	NM	NM	NM	U (0.10)	NM	NM	0.24 (0.10)	NM	NM	0.74 (0.10)	0.74 (0.10)	NM	NM
Ethene	NE	NM	NM	NM	0.22 (0.10)	NM	NM	0.12 (0.10)	NM	NM	2.8 (0.10)	0.52 (0.10)	NM	NM
Hydrogen (H2) [nM]	NE	NM	NM	NM	U (1.0)	NM	NM	NM	NM	NM	1.6 (1.0)	2.5 (1.0)	NM	NM
Molecular Analyses														
BAV1 Vinyl Chloride Reductase [cells/mL]	NM	NM	NM	NM	U (0.5)	NM	NM	NM	NM	NM	U (10)	U (2)	NM	NM
Dehalococcoides (DHC) [cells/mL]	NM	NM	NM	NM	0.7 (0.5)	NM	NM	NM	NM	NM	20000 (0.5)	638 (0.5)	NM	NM
tceA Reductase [cells/mL]	NM	NM	NM	NM	U (0.5)	NM	NM	NM	NM	NM	1890 (0.5)	28.9 (0.5)	NM	NM
Vinyl Chloride Reductase (vrcA) [cells/mL]	NM	NM	NM	NM	U (0.5)	NM	NM	NM	NM	NM	1790 (0.5)	40.3 (0.5)	NM	NM

Notes:

1 All concentrations are presented in µg/L (ppb) except where otherwise noted.

2 Only compounds with at least one detection are shown.

3 The detection limit for VOCs is the sample quantitation limit. For other compounds the reporting detection limit is used.

4 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued Dec 2013 are double underlined.

U = Not detected
J = Estimated concentration
( ) = Method detection limit for VOCs; reporting detection limit for other analyses.

RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
µg/L = Micrograms per Liter
NE = Not established
NM = Not measured

Color Key
Onsite Wells
Offsite Wells
Plume Boundary Wells

RAMBOLL

TABLE 6A
SUMMARY OF MONITORING WELL GROUNDWATER SAMPLE ANALYTICAL RESULTS
(FOURTH QUARTER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued Dec 2013	TMW-16	TMW-19	TMW-19	TMW-20	TMW-21	TMW-23	TMW-24	TMW-25	TMW-26	TMW-27	TMW-29	TMW-30	TMW-32
Field Sample ID		TMW-16-201910	TMW-19-201910	DUP-06-201910	TMW-20-201910	TMW-21-201910	TMW-23-2019110	TMW-24-2019110	TMW-25-201910	TMW-26-201910	TMW-27-201910	TMW-29-201910	TMW-30-201910	TMW-32-201910
Lab Sample ID(s)		60319115060/ 319040010	60319115003	60319115004	60318969017	60318969020/ 318780001	60319115028	60319115027	60319241004/ 319530004	60319115044/ 319040003	60319115015	60318969016	60319115012	60319241002/ 319530002
Sample Date		10/23/2019	10/23/2019	10/23/2019	10/22/2019	10/22/2019	10/23/2019	10/23/2019	10/24/2019	10/23/2019	10/23/2019	10/22/2019	10/23/2019	10/24/2019
Sample Method		Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Comments				Field Duplicate										
Volatile Organic Compounds														
Acetone	12000	73.7 (3.3)	U (3.3)	U (3.3)	U (3.3)	202 (3.3)	U (3.3)	U (3.3)	U (3.3)	38.2 (3.3)	U (3.3)	U (3.3)	419 (3.3)	U (3.3)
Benzene	5.0	0.18 J (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	0.12 J (0.079)	U (0.079)	U (0.079)	0.31 J (0.079)	U (0.079)
Bromodichloromethane	80	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)
Bromoform	80	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)
Bromomethane	7.0	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)
2-Butanone	4900	325 (0.70)	U (0.70)	U (0.70)	U (0.70)	309 (0.70)	U (0.70)	U (0.70)	15.8 (0.70)	113 (0.70)	1.7 J (0.70)	U (0.70)	2600 (14.0)	U (0.70)
Carbon Disulfide	720	1.6 J (0.16)	U (0.16)	U (0.16)	U (0.16)	0.42 J (0.16)	U (0.16)	U (0.16)	0.31 J (0.16)	U (0.16)	U (0.16)	U (0.16)	4.1 J (0.16)	U (0.16)
Carbon Tetrachloride	5	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)	U (0.084)
Chlorobenzene	100	0.14 J (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	5.3 (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	2.7 (0.13)
Chloroethane	12000	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)	U (0.42)
Chloroform	80	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	0.13 J (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Chloromethane	190	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
Dibromochloromethane	80	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)	U (0.15)
1,1-Dichloroethane	2.4	U (0.097)	0.25 J (0.097)	0.21 J (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)	U (0.097)
1,2-Dichloroethane	5.0	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1-Dichloroethene	7.0	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	0.36 J (0.22)	1.5 (0.22)	U (0.22)	0.29 J (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)
cis-1,2-Dichloroethene	70	8.8 (0.17)	1.6 (0.17)	1.5 (0.17)	U (0.17)	13.5 (0.17)	2.5 (0.17)	11.8 (0.17)	39.9 (0.17)	53.3 (0.17)	U (0.17)	U (0.17)	2.3 (0.17)	21.0 (0.17)
trans-1,2-Dichloroethene	100	0.39 J (0.17)	U (0.17)	U (0.17)	U (0.17)	0.19 J (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)
Ethyl Benzene	700	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	3.2 (0.12)	U (0.12)
2-Hexanone	34	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	6.0 J (1.0)	U (1.0)
4-Methyl-2-pentanone	1000	1.9 J (0.56)	U (0.56)	U (0.56)	U (0.56)	1.1 J (0.56)	U (0.56)	U (0.56)	U (0.56)	2.6 J (0.56)	U (0.56)	U (0.56)	1.3 J (0.56)	U (0.56)
Methylene Chloride	5.0	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)
1,1,2,2-Tetrachloroethane	0.066	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.31)
Tetrachloroethene	5.0	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)
Toluene	1000	0.21 J (0.14)	U (0.14)	U (0.14)	U (0.14)	53.2 (0.14)	U (0.14)	U (0.14)	0.15 J (0.14)	0.37 J (0.14)	U (0.14)	U (0.14)	1.0 (0.14)	U (0.14)
1,1,1-Trichloroethane	200	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)
1,1,2-Trichloroethane	5.0	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Trichloroethene	5.0	6.0 (0.17)	13.6 (0.17)	12.2 (0.17)	U (0.17)	21.8 (0.17)	189 (0.17)	575 (1.7)	23.6 (0.17)	42.9 (0.17)	U (0.17)	U (0.17)	2.5 (0.17)	29.2 (0.17)
Vinyl Chloride	2.0	2.4 (0.11)	U (0.11)	U (0.11)	U (0.11)	1.9 (0.11)	U (0.11)	0.20 J (0.11)	0.41 J (0.11)	2.9 (0.11)	U (0.11)	U (0.11)	0.12 J (0.11)	0.13 J (0.11)
Metals														
Iron	NE	53400 (50.0)	NM	NM	NM	76100 (50.0)	NM	NM	23600 (50.0)	34800 (50.0)	NM	NM	NM	12500 (50.0)
Monitored Natural Attenuation Parameters (Laborator														
Acetic acid	NE	60000 (10000)	NM	NM	NM	130000 (10000)	NM	NM	17000 (1000)	16000 (1000)	NM	NM	NM	100 U (100)
1-Butanecarboxylic Acid	NE	29000 (1000)	NM	NM	NM	130000 (10000)	NM	NM	2100 (100)	6400 (100)	NM	NM	NM	100 U (100)
Butyric acid	NE	28000 (1000)	NM	NM	NM	56000 (10000)	NM	NM	1900 (100)	2700 (1000)	NM	NM	NM	100 U (100)
Organic Carbon (total)	NE	449000 (50000)	NM	NM	NM	1130000 (100000)	NM	NM	43400 (10000)	212000 (25000)	NM	NM	NM	2200 (1000)
Organic Carbon (dissolved)	NE	469000 (50000)	NM	NM	NM	883000 (100000)	NM	NM	39300 (10000)	203000 (25000)	NM	NM	NM	1300 J+ (1000)
Chloride	NE	498000 (50000)	NM	NM	NM	204000 (50000)	NM	NM	149000 (10000)	206000 (20000)	NM	NM	NM	110000 (10000)
Formic acid	NE	6700 (5000)	NM	NM	NM	50000 U (50000)	NM	NM	510 (500)	5000 U (5000)	NM	NM	NM	500 U (500)
n-Hexanoic acid	NE	2000 U (2000)	NM	NM	NM	6300 (2000)	NM	NM	340 (200)	360 (200)	NM	NM	NM	200 U (200)
Lactic Acid	NE	2000 U (2000)	NM	NM	NM	2000 U (2000)	NM	NM	200 U (200)	2000 U (2000)	NM	NM	NM	200 U (200)
3-methyl-Butanoic acid	NE	1700 (1000)	NM	NM	NM	5500 (1000)	NM	NM	210 (100)	100 U (100)	NM	NM	NM	100 U (100)
4-methyl-pentanoic acid	NE	2000 U (2000)	NM	NM	NM	390 (200)	NM	NM	200 U (200)	200 U (200)	NM	NM	NM	200 U (200)
Nitrogen	NE	81 J (100)	NM	NM	NM	150 (100)	NM	NM	NM	3500 (100)	NM	NM	NM	NM
Nitrate/Nitrite	NE	NM	NM	NM	NM	NM	NM	NM	1300 (100)	NM	NM	NM	NM	56 J (100)
Nitrogen, Nitrate	NE	U (100)	NM	NM	NM	U (100)	NM	NM	NM	3400 (100)	NM	NM	NM	NM
Nitrogen, Nitrite	NE	85 J (100)	NM	NM	NM	170 (100)	NM	NM	NM	140 (100)	NM	NM	NM	NM
Propionic Acid	NE	560000 (10000)	NM	NM	NM	1300000 (100000)	NM	NM	27000 (1000)	110000 (10000)	NM	NM	NM	100 U (100)
Pyruvic Acid	NE	3100 (1000)	NM	NM	NM	5400 (1000)	NM	NM	640 (100)	810 (100)	NM	NM	NM	100 U (100)
Sulfate	NE	3900 (1000)	NM	NM	NM	15300 (2000)	NM	NM	19200 (2000)	33900 (2000)	NM	NM	NM	27200 (2000)
Gases														
Acetylene	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Methane	NE	24000 (0.50)	NM	NM	NM	12000 (0.50)	NM	NM	12000 (0.50)	13000 (0.50)	NM	NM	NM	8800 (0.50)
Ethane	NE	0.42 (0.10)	NM	NM	NM	0.48 (0.10)	NM	NM	0.16 (0.10)	U (0.10)	NM	NM	NM	0.21 (0.10)
Ethene	NE	5.1 (0.10)	NM	NM	NM	1.2 (0.10)	NM	NM	0.25 (0.10)	1.3 (0.10)	NM	NM	NM	0.30 (0.10)
Hydrogen (H2) [nM]	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Molecular Analyses														
BAV1 Vinyl Chloride Reductase [cells/mL]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Dehalococcoides (DHC) [cells/mL]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
tceA Reductase [cells/mL]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Vinyl Chloride Reductase (vrcA) [cells/mL]	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

Notes:

1 All concentrations are presented in µg/L (ppb) except where otherwise noted.

2 Only compounds with at least one detection are shown.

3 The detection limit for VOCs is the sample quantitation limit. For other compounds the reporting detection limit is used.

4 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued Dec 2013 are double underlined.

U = Not detected
J = Estimated concentration
( ) = Method detection limit for VOCs; reporting detection limit for other analyses.

RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
µg/L = Micrograms per Liter
NE = Not established
NM = Not measured

Color Key
Onsite Wells
Offsite Wells
Plume Boundary Wells

RAMBOLL

TABLE 6A
SUMMARY OF MONITORING WELL GROUNDWATER SAMPLE ANALYTICAL RESULTS
(FOURTH QUARTER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued Dec 2013	TMW-34	TMW-35	TMW-36
Field Sample ID		TMW-34-201910	TMW-35-201910	TMW-36-201910
Lab Sample ID(s)		60319241001/ 319530001	60318969010	60319241012
Sample Date		10/24/2019	10/22/2019	10/24/2019
Sample Method		Low Flow	Low Flow	Low Flow
Comments				
Volatile Organic Compounds				
Acetone	12000	U (3.3)	U (3.3)	U (3.3)
Benzene	5.0	U (0.079)	U (0.079)	U (0.079)
Bromodichloromethane	80	U (0.17)	U (0.17)	U (0.17)
Bromoform	80	U (0.21)	U (0.21)	U (0.21)
Bromomethane	7.0	U (0.32)	U (0.32)	U (0.32)
2-Butanone	4900	U (0.70)	U (0.70)	U (0.70)
Carbon Disulfide	720	0.27 J (0.16)	U (0.16)	U (0.16)
Carbon Tetrachloride	5	U (0.084)	U (0.084)	U (0.084)
Chlorobenzene	100	U (0.13)	U (0.13)	U (0.13)
Chloroethane	12000	U (0.42)	U (0.42)	U (0.42)
Chloroform	80	U (0.10)	U (0.10)	U (0.10)
Chloromethane	190	U (0.16)	U (0.16)	U (0.16)
Dibromochloromethane	80	U (0.15)	U (0.15)	U (0.15)
1,1-Dichloroethane	2.4	0.14 J (0.097)	U (0.097)	0.99 J (0.097)
1,2-Dichloroethane	5.0	U (0.14)	U (0.14)	0.14 J (0.14)
1,1-Dichloroethene	7.0	U (0.22)	U (0.22)	1.1 (0.22)
cis-1,2-Dichloroethene	70	6.9 (0.17)	U (0.17)	8.4 (0.17)
trans-1,2-Dichloroethene	100	U (0.17)	U (0.17)	U (0.17)
Ethyl Benzene	700	U (0.12)	U (0.12)	U (0.12)
2-Hexanone	34	U (1.0)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	1000	U (0.56)	U (0.56)	U (0.56)
Methylene Chloride	5.0	U (0.27)	U (0.27)	U (0.27)
1,1,2,2-Tetrachloroethane	0.066	U (0.31)	U (0.31)	U (0.31)
Tetrachloroethene	5.0	U (0.22)	U (0.22)	U (0.22)
Toluene	1000	U (0.14)	U (0.14)	U (0.14)
1,1,1-Trichloroethane	200	U (0.12)	U (0.12)	U (0.12)
1,1,2-Trichloroethane	5.0	U (0.10)	U (0.10)	U (0.10)
Trichloroethene	5.0	17.6 (0.17)	U (0.17)	389 (0.85)
Vinyl Chloride	2.0	U (0.11)	U (0.11)	0.31 J (0.11)
Metals				
Iron	NE	2110 (50.0)	NM	NM
Monitored Natural Attenuation Parameters (Laborator				
Acetic acid	NE	100 U (100)	NM	NM
1-Butanecarboxylic Acid	NE	100 U (100)	NM	NM
Butyric acid	NE	100 U (100)	NM	NM
Organic Carbon (total)	NE	560 J (1000)	NM	NM
Organic Carbon (dissolved)	NE	6500 (1000)	NM	NM
Chloride	NE	26000 (2000)	NM	NM
Formic acid	NE	500 U (500)	NM	NM
n-Hexanoic acid	NE	200 U (200)	NM	NM
Lactic Acid	NE	200 U (200)	NM	NM
3-methyl-Butanoic acid	NE	100 U (100)	NM	NM
4-methyl-pentanoic acid	NE	200 U (200)	NM	NM
Nitrogen	NE	NM	NM	NM
Nitrate/Nitrite	NE	1000 (100)	NM	NM
Nitrogen, Nitrate	NE	NM	NM	NM
Nitrogen, Nitrite	NE	NM	NM	NM
Propionic Acid	NE	100 U (100)	NM	NM
Pyruvic Acid	NE	100 U (100)	NM	NM
Sulfate	NE	10400 (1000)	NM	NM
Gases				
Acetylene	NE	NM	NM	NM
Methane	NE	8400 (0.50)	NM	NM
Ethane	NE	0.24 (0.10)	NM	NM
Ethene	NE	U (0.10)	NM	NM
Hydrogen (H2) [nM]	NE	NM	NM	NM
Molecular Analyses				
BAV1 Vinyl Chloride Reductase [cells/mL]	NM	NM	NM	NM
Dehalococcoides (DHC) [cells/mL]	NM	NM	NM	NM
tceA Reductase [cells/mL]	NM	NM	NM	NM
Vinyl Chloride Reductase (vrcA) [cells/mL]	NM	NM	NM	NM

Notes:

1 All concentrations are presented in µg/L (ppb) except where otherwise noted.

2 Only compounds with at least one detection are shown.

3 The detection limit for VOCs is the sample quantitation limit. For other compounds the reporting detection limit is used.

4 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued Dec 2013 are double underlined.

U = Not detected
J = Estimated concentration
( ) = Method detection limit for VOCs; reporting detection limit for other analyses.

RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
µg/L = Micrograms per Liter
NE = Not established
NM = Not measured

Color Key
Onsite Wells
Offsite Wells
Plume Boundary Wells

TABLE 6B
SUMMARY OF ISCO INJECTION WELL GROUNDWATER SAMPLE ANALYTICAL RESULTS
(FOURTH QUARTER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued Dec 2013	IW-132	IW-134	IW-147	IW-73	IW-77	IW-78
Field Sample ID		IW-132-201910	IW-134-201910	IW-147-201910	IW-73-201910	IW-77-201910	IW-78-201910
Lab Sample ID(s)		60319241026	60319241021	60319241005/ 319530005	60322105001/ 322520001	60319115049	60319115009
Sample Date		10/24/2019	10/24/2019	10/24/2019	11/20/2019	10/23/2019	10/23/2019
Sample Method		Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Comments							
Volatile Organic Compounds							
Acetone	12000	U (3.3)	U (3.3)	U (7.4)	U (3.3)	3.4 J (3.3)	5.3 J (3.3)
Benzene	5.0	U (0.079)	U (0.079)	0.49 J (0.13)	U (0.079)	U (0.079)	U (0.079)
Bromodichloromethane	80	U (0.17)	U (0.17)	1.5 (0.14)	U (0.17)	U (0.17)	U (0.17)
Bromoform	80	U (0.21)	6.0 (0.21)	4.5 (0.28)	U (0.21)	0.74 J (0.21)	95.6 (0.21)
Bromomethane	7.0	U (0.32)	U (0.32)	U (2.8)	U (0.32)	U (0.32)	0.82 J (0.32)
2-Butanone	4900	U (0.70)	U (0.70)	U (1.8)	U (0.70)	U (0.70)	U (0.70)
Carbon Disulfide	720	U (0.16)	U (0.16)	0.69 J (0.086)	U (0.16)	U (0.16)	0.21 J (0.16)
Carbon Tetrachloride	5	U (0.084)	U (0.084)	1.4 (0.070)	U (0.084)	U (0.084)	U (0.084)
Chlorobenzene	100	U (0.13)	U (0.13)	U (0.17)	U (0.13)	U (0.13)	U (0.13)
Chloroethane	12000	U (0.42)	U (0.42)	U (0.83)	U (0.42)	U (0.42)	U (0.42)
Chloroform	80	U (0.10)	0.15 J (0.10)	20.2 (0.25)	0.14 J (0.10)	0.18 J (0.10)	U (0.10)
Chloromethane	190	U (0.16)	U (0.16)	2.4 (0.51)	U (0.16)	U (0.16)	1.1 (0.16)
Dibromochloromethane	80	U (0.15)	0.26 J (0.15)	0.59 J (0.15)	U (0.15)	U (0.15)	2.8 (0.15)
1,1-Dichloroethane	2.4	U (0.097)	U (0.097)	2.5 (0.12)	U (0.097)	U (0.097)	U (0.097)
1,2-Dichloroethane	5.0	U (0.14)	U (0.14)	U (0.33)	U (0.14)	U (0.14)	U (0.14)
1,1-Dichloroethene	7.0	0.32 J (0.22)	U (0.22)	90.4 (0.14)	0.73 J (0.22)	0.70 J (0.22)	U (0.22)
cis-1,2-Dichloroethene	70	0.57 J (0.17)	9.9 (0.17)	5420 (340)	7.0 (0.17)	6.8 (0.17)	U (0.17)
trans-1,2-Dichloroethene	100	U (0.17)	1.5 (0.17)	U (340)	U (0.17)	0.48 J (0.17)	U (0.17)
Ethyl Benzene	700	U (0.12)	U (0.12)	0.20 J (0.20)	U (0.12)	U (0.12)	U (0.12)
2-Hexanone	34	U (1.0)	U (1.0)	U (1.6)	U (1.0)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	1000	U (0.56)	U (0.56)	U (1.3)	U (0.56)	U (0.56)	U (0.56)
Methylene Chloride	5.0	U (0.27)	U (0.27)	4.8 (0.35)	U (0.27)	U (0.27)	U (0.27)
1,1,2,2-Tetrachloroethane	0.066	U (0.31)	U (0.31)	44.4 (0.23)	U (0.31)	U (0.31)	U (0.31)
Tetrachloroethene	5.0	U (0.22)	0.28 J (0.22)	42.5 (0.14)	U (0.22)	U (0.22)	U (0.22)
Toluene	1000	U (0.14)	U (0.14)	5.3 (0.17)	U (0.14)	U (0.14)	U (0.14)
1,1,1-Trichloroethane	200	U (0.12)	U (0.12)	76.8 (0.12)	U (0.12)	U (0.12)	U (0.12)
1,1,2-Trichloroethane	5.0	U (0.10)	U (0.10)	3.5 (0.10)	U (0.10)	U (0.10)	U (0.10)
Trichloroethene	5.0	292 (3.4)	1090 (3.4)	95800 (340)	215 (0.85)	180 (1.7)	2.4 (0.17)
Vinyl Chloride	2.0	U (0.11)	U (0.11)	376 J (220)	0.16 J (0.11)	U (0.11)	U (0.11)
Metals							
Iron	NE	NM	NM	50.0 J (50.0)	637 (50.0)	NM	NM
Monitored Natural Attenuation Parameters (Laboratory)							
Acetic acid	NE	NM	NM	NM	NM	NM	NM
1-Butanecarboxylic Acid	NE	NM	NM	NM	NM	NM	NM
Butyric acid	NE	NM	NM	NM	NM	NM	NM
Organic Carbon (total)	NE	NM	NM	1000 (1000)	400 J (1000)	NM	NM
Organic Carbon (dissolved)	NE	NM	NM	NM	NM	NM	NM
Chloride	NE	NM	NM	NM	NM	NM	NM
Formic acid	NE	NM	NM	NM	NM	NM	NM
n-Hexanoic acid	NE	NM	NM	NM	NM	NM	NM
Lactic Acid	NE	NM	NM	NM	NM	NM	NM
3-methyl-Butanoic acid	NE	NM	NM	NM	NM	NM	NM
4-methyl-pentanoic acid	NE	NM	NM	NM	NM	NM	NM
Nitrogen	NE	NM	NM	200 (100)	U (100)	NM	NM
Nitrate/Nitrite	NE	NM	NM	NM	NM	NM	NM
Nitrogen, Nitrate	NE	NM	NM	200 (100)	U (100)	NM	NM
Nitrogen, Nitrite	NE	NM	NM	U (100)	U (100)	NM	NM
Propionic Acid	NE	NM	NM	NM	NM	NM	NM
Pyruvic Acid	NE	NM	NM	NM	NM	NM	NM
Sulfate	NE	NM	NM	669000 (50000)	3500 (1000)	NM	NM
Gases							
Acetylene	NE	NM	NM	3.0 (0.50)	U (0.50)	NM	NM
Methane	NE	NM	NM	37 (0.50)	2.6 (0.50)	NM	NM
Ethane	NE	NM	NM	6.5 (0.10)	U (0.10)	NM	NM
Ethene	NE	NM	NM	0.28 (0.10)	U (0.10)	NM	NM
Hydrogen (H2) [nM]	NE	NM	NM	7.5 (1.0)	2.7 J (1.0)	NM	NM
Molecular Analyses							
BAV1 Vinyl Chloride Reductase [cells/mL]	NM	NM	NM	U (3.1)	NM	NM	NM
Dehalococcoides (DHC) [cells/mL]	NM	NM	NM	U (3.1)	NM	NM	NM
tceA Reductase [cells/mL]	NM	NM	NM	U (3.1)	NM	NM	NM
Vinyl Chloride Reductase (vrcA) [cells/mL]	NM	NM	NM	U (3.1)	NM	NM	NM

Notes:

1 All concentrations are presented in µg/L (ppb) except where

2 Only compounds with at least one detection are shown.

3 The detection limit for VOCs is the sample quantitation limit. For other compounds the reporting detection limit is

4 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued Dec 2013 are double underlined.

U = Not detected

J = Estimated concentration

( ) = Method detection limit for VOCs; reporting detection limit for other analyses.

RADD = Remedial action decision document
ADEQ = Arkansas Department of Environmental Quality
VOC = Volatile organic compounds
µg/L = Micrograms per Liter
NE = Not established
NM = Not measured

Color Key
Onsite Wells
Offsite Wells
Plume Boundary Wells

RAMBOLL

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
ITMW-1	ITMW-1-19891101	11/1/1989	< ND		< ND
ITMW-1	ITMW-1-19900101	1/1/1990	< ND		< ND
ITMW-1	ITMW-1-19931101	11/1/1993	10		< ND
ITMW-1	ITMW-1-19961201	12/1/1996	21		< ND
ITMW-1	ITMW-1-19990201	2/1/1999	37	< ND	< ND
ITMW-1	ITMW-1-20000301	3/1/2000	125	8	< ND
ITMW-1	ITMW-1-20000919	9/19/2000	30.7	7.45	< 10 U
ITMW-1	ITMW-1-20010327	3/27/2001	30	6	< 10 U
ITMW-1	ITMW-1-20010911	9/11/2001	27	9	< 10 U
ITMW-1	ITMW-1-20020910	9/10/2002	35	9	< 10 U
ITMW-1	ITMW-1-20030227	2/27/2003	29.6	7.14	< 10 U
ITMW-1	ITMW-1-20030923	9/23/2003	25	12	< 10 U
ITMW-1	ITMW-1-20040413	4/13/2004	42.2	11.1	< 10 U
ITMW-1	ITMW-1-20040921	9/21/2004	26	16.7	< 10 U
ITMW-1	ITMW-1-20040921-FD	9/21/2004	26.1	15.8	< 10 U
ITMW-1	ITMW-1-20050928	9/28/2005	34.7	11.3	< 10 U
ITMW-1	ITMW-1-20061014	10/14/2006	20	11	< 10 UJ
ITMW-1	ITMW-1-20070920	9/20/2007	18	13	< 10 U
ITMW-1	ITMW-1-20081209	12/9/2008	14	7.3	< 5 U
ITMW-1	ITMW-1-20111027	10/27/2011	17	8.2	< 5 U
ITMW-1	ITMW-1-20120418	4/18/2012	32	13	< 5 U
ITMW-1	ITMW-1-20121019	10/19/2012	10	8.3	< 0.11 U
ITMW-1	ITMW-1-20130424	4/24/2013	26	9.1	< 0.11 U
ITMW-1	ITMW-1-101513	10/15/2013	7.2	5.8	< 0.11 U
ITMW-1	ITMW-1-201403	3/8/2014	23.4	8.9	< 0.13 U
ITMW-1	ITMW-1-201405	5/13/2014	21.3	8.7	< 0.13 U
ITMW-1	ITMW-1-201407	7/30/2014	8.9	5.4	< 0.50 U
ITMW-1	DUP-5-201407	7/30/2014	9.2	5.7	< 0.50 U
ITMW-1	ITMW-1-201410	10/15/2014	6.1	4.5 J	< 0.50 U
ITMW-1	ITMW-1-201501	1/14/2015	22.7	9.7	< 0.50 U
ITMW-1	ITMW-1-201504	4/15/2015	19.2	9.7	< 0.13 U
ITMW-1	ITMW-1-201507	7/22/2015	10.5	5.3	< 0.13 U
ITMW-1	ITMW-1-201510	10/7/2015	7.8	4.4	< 0.13 U
ITMW-1	ITMW-1-201601	1/13/2016	19.9	8.9	< 0.13 U
ITMW-1	ITMW-1-201605	5/5/2016	17.2	8.0	< 0.13 U
ITMW-1	DUP-05-201605	5/5/2016	17.6	8.1	< 0.13 U
ITMW-1	ITMW-1-201611	11/10/2016	7.6	3.1	< 0.13 U
ITMW-1	DUP-04-201611	11/10/2016	7.0	3.4	< 0.13 U
ITMW-1	ITMW-1-201710	10/25/2017	8.9	3.8	< 0.13 U
ITMW-1	ITMW-1-201811	11/15/2018	12.7	5.4	< 0.13 U
ITMW-1R	ITMW-1R-201910	10/23/2019	11.4	8.9	0.14 J
ITMW-2	ITMW-2-19891001	10/1/1989	< ND		< ND
ITMW-2	ITMW-2-19891101	11/1/1989	< ND		< ND
ITMW-2	ITMW-2-19900101	1/1/1990	< ND		< ND
ITMW-2	ITMW-2-19900101-FD	1/1/1990	< ND		< ND
ITMW-2	ITMW-2-19910301	3/1/1991	< ND		< ND
ITMW-2	ITMW-2-19931101	11/1/1993	4		< ND
ITMW-2	ITMW-2-19961201	12/1/1996	3.4		< ND
ITMW-2	ITMW-2-20000301	3/1/2000	< ND	< ND	< ND
ITMW-2	ITMW-2-20000919	9/19/2000	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20010327	3/27/2001	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20010913	9/13/2001	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20020911	9/11/2002	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20030923	9/23/2003	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20040413	4/13/2004	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20040413-FD	4/13/2004	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20040921	9/21/2004	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20040921-FD	9/21/2004	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20050929	9/29/2005	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20061014	10/14/2006	4 J	< 5 U	< 10 U
ITMW-2	ITMW-2-20070920	9/20/2007	< 5 U	< 5 U	< 10 U
ITMW-2	ITMW-2-20081209	12/9/2008	< 5 U	< 5 U	< 5 U
ITMW-2	ITMW-2-20101103	11/3/2010	< 5 U	< 5 U	< 5 U
ITMW-2	ITMW-2-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
ITMW-2	ITMW-2-20120417	4/17/2012	< 5 U	< 5 U	< 5 U
ITMW-2	ITMW-2-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-2	ITMW-2-20130424	4/24/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-2	ITMW-2-101413	10/14/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-2	ITMW-2-201403	3/6/2014	0.23 J	0.40 J	< 0.13 U
ITMW-2	ITMW-2-201403-FD	3/6/2014	0.28 J	0.51 J	< 0.13 U
ITMW-2	ITMW-2-201405	5/13/2014	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-2	ITMW-2-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-2	ITMW-2-201410	10/15/2014	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-2	ITMW-2-201501	1/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-2	ITMW-2-201504	4/15/2015	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-2	ITMW-2-201507	7/22/2015	0.24 J	0.26 J	< 0.13 U
ITMW-2	ITMW-2-201510	10/6/2015	0.22 J	0.21 J	< 0.13 U
ITMW-2	ITMW-2-201601	1/12/2016	0.21 J	0.42 J	< 0.13 U
ITMW-2	ITMW-2-201605	5/5/2016	0.25 J	0.29 J	< 0.13 U
ITMW-2	ITMW-2-201611	11/9/2016	< 0.17 U	< 0.080 U	< 0.13 U

RAMBOLL

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
ITMW-2	ITMW-2-201710	10/25/2017	0.34 U	0.29 J	< 0.13 U
ITMW-2	ITMW-2-201811	11/13/2018	0.71 J	0.57 J	< 0.13 U
ITMW-2R	ITMW-2R-201910	10/24/2019	< 0.17 U	< 0.17 U	< 0.11 U
ITMW-3	ITMW-3-19891001	10/1/1989	< ND		< ND
ITMW-3	ITMW-3-19900101	1/1/1990	< ND		< ND
ITMW-3	ITMW-3-19931101	11/1/1993	3		< ND
ITMW-3	ITMW-3-19961201	12/1/1996	1.7		< ND
ITMW-3	ITMW-3-19990201	2/1/1999	< ND	< ND	< ND
ITMW-3	ITMW-3-20000301	3/1/2000	< ND	< ND	< ND
ITMW-3	ITMW-30-20000301-FD	3/1/2000	< ND	< ND	< ND
ITMW-3	ITMW-3-20000919	9/19/2000	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20010327	3/27/2001	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20010911	9/11/2001	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20020910	9/10/2002	15	< 5 U	< 10 U
ITMW-3	ITMW-3-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20030923	9/23/2003	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20040413	4/13/2004	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20040921	9/21/2004	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20050928	9/28/2005	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20061014	10/14/2006	< 5 U	< 5 U	< 10 UJ
ITMW-3	ITMW-3-20070920	9/20/2007	< 5 U	< 5 U	< 10 U
ITMW-3	ITMW-3-20081209	12/9/2008	< 5 U	< 5 U	< 5 U
ITMW-3	ITMW-3-20101104	11/4/2010	190	3.9 J	< 5 U
ITMW-3	ITMW-3-20111027	10/27/2011	4.1 J	< 5 U	< 5 U
ITMW-3	ITMW-3-20120417	4/17/2012	< 5 U	< 5 U	< 5 U
ITMW-3	ITMW-3-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-3	ITMW-3-20130423	4/23/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-3	ITMW-3-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-4	ITMW-4-19891001	10/1/1989	< ND		< ND
ITMW-4	ITMW-4-19891101	11/1/1989	< ND		< ND
ITMW-4	ITMW-4-19900101	1/1/1990	< ND		< ND
ITMW-4	ITMW-4-19931101	11/1/1993	< ND		< ND
ITMW-4	ITMW-4-19961201	12/1/1996	75		< ND
ITMW-4	ITMW-4-19990201	2/1/1999	93	54	< ND
ITMW-4	ITMW-4-20000301	3/1/2000	22	16	< ND
ITMW-4	ITMW-4-20000920	9/20/2000	13.9	10.6	< 10 U
ITMW-4	ITMW-4-20010328	3/28/2001	9	< 5 U	< 10 U
ITMW-4	ITMW-4-20010913	9/13/2001	6	8	< 10 U
ITMW-4	ITMW-4-20020910	9/10/2002	9	< 5 U	< 10 U
ITMW-4	ITMW-4-20030228	2/28/2003	< 5 U	< 5 U	< 10 U
ITMW-4	ITMW-4-20030923	9/23/2003	< 5 U	< 5 U	< 10 U
ITMW-4	ITMW-4-20040414	4/14/2004	< 5 U	< 5 U	< 10 U
ITMW-4	ITMW-4-20040922	9/22/2004	< 5 U	< 5 U	< 10 U
ITMW-4	ITMW-4-20050927	9/27/2005	< 5 U	< 5 U	< 10 U
ITMW-4	ITMW-4-20061011	10/11/2006	6	8	< 10 U
ITMW-4	ITMW-4-20070920	9/20/2007	5 J	5 J	< 10 U
ITMW-4	ITMW-4-20081209	12/9/2008	< 5 U	3.2 J	< 5 U
ITMW-4	ITMW-4-20111025	10/25/2011	4.8 J	5.1	< 5 U
ITMW-4	ITMW-4-20121017	10/17/2012	3.3 J	4.5 J	7.9
ITMW-4	ITMW-4-101413	10/14/2013	3.7 J	6.1	< 0.11 U
ITMW-4	ITMW-4-201403	3/6/2014	1.4 J	2.0 J	0.19 J
ITMW-4	ITMW-4-201405	5/13/2014	2.0 J	2.1 J	0.18 J
ITMW-4	ITMW-4-201407	7/30/2014	2.8 J	4.6 J	< 0.50 U
ITMW-4	ITMW-4-201410	10/16/2014	3.4 J	4.9 J	< 0.50 U
ITMW-4	ITMW-4-201501	1/13/2015	1.7	2.3	< 0.50 U
ITMW-4	ITMW-4-201504	4/14/2015	1.6	2.6	0.84 J
ITMW-4	ITMW-4-201507	7/22/2015	2.0	2.6	0.17 J
ITMW-4	ITMW-4-201510	10/7/2015	2.3	2.8	0.23 J
ITMW-4	ITMW-4-201601	1/12/2016	1.5	2.5	< 0.13 U
ITMW-4	ITMW-4-201605	5/5/2016	1.3	< 0.080 U	0.15 J
ITMW-5	ITMW-5-19891001	10/1/1989	< ND		< ND
ITMW-5	ITMW-5-19900101	1/1/1990	< ND		< ND
ITMW-5	ITMW-5-19961201	12/1/1996	21		< ND
ITMW-5	ITMW-5-19990201	2/1/1999	86	39	< ND
ITMW-5	ITMW-5-20000301	3/1/2000	73	59	< ND
ITMW-5	ITMW-5-20000920	9/20/2000	85	64.4	< 10 U
ITMW-5	ITMW-5-20010328	3/28/2001	100	46	< 10 U
ITMW-5	ITMW-5-20010913	9/13/2001	72	64	< 10 U
ITMW-5	ITMW-5-20020910	9/10/2002	108	72	< 10 U
ITMW-5	ITMW-5-20030228	2/28/2003	90.4	68.7	< 10 U
ITMW-5	ITMW-5-20030924	9/24/2003	97.3	73.7	< 10 U
ITMW-5	ITMW-5-20040414	4/14/2004	83.9	55.4	< 10 U
ITMW-5	ITMW-5-20040922	9/22/2004	105	75.8	< 10 U
ITMW-5	ITMW-5-20050406	4/6/2005	93.2	72.6	< 10 U
ITMW-5	ITMW-5-20050406-FD	4/6/2005	87	71	< 10 U
ITMW-5	ITMW-5-20050928	9/28/2005	79	53.5	< 10 U
ITMW-5	ITMW-5-20050928-FD	9/28/2005	82.1	54.4	< 10 U
ITMW-5	ITMW-5-20060314	3/14/2006	92	66.1	< 10 U
ITMW-5	ITMW-5-20060314-FD	3/14/2006	98.4	66.1	< 10 U
ITMW-5	ITMW-5-20061010	10/10/2006	110	51	4 J
ITMW-5	ITMW-5-20070418	4/18/2007	115	39.3	< 10 U

RAMBOLL

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
ITMW-5	ITMW-5-20070920	9/20/2007	120	49	4 J
ITMW-5	ITMW-5-20080429	4/29/2008	120 0	43 0	< 10 U
ITMW-5	ITMW-5-20081209	12/9/2008	200 E	42	< 5 U
ITMW-5	ITMW-5-20090427	4/27/2009	160	34	< 5 U
ITMW-5	ITMW-5-20100511	5/11/2010	190 EF	40	< 5 U
ITMW-5	ITMW-5-20101106	11/6/2010	350	50	< 5 U
ITMW-5	ITMW-5-20110322	3/22/2011	370	39	< 5 U
ITMW-5	ITMW-5-20111025	10/25/2011	150	35	< 5 U
ITMW-5	ITMW-5-20120417	4/17/2012	290	26	< 5 U
ITMW-5	ITMW-5-20121018	10/18/2012	260	33	0.64 J
ITMW-5	ITMW-5-20130425	4/25/2013	220	20	0.50 J
ITMW-5	ITMW-5-101613	10/16/2013	260	27	0.55 J
ITMW-5	ITMW-5-201611	11/10/2016	507	38.9	2.8 J
ITMW-5	DUP-06-201611	11/10/2016	441	33.5	1.5 J
ITMW-5	ITMW-5-201704	4/28/2017	608	30.7	0.93 J
ITMW-5	DUP-06-201704	4/28/2017	664	27.8	0.82 J
ITMW-5	ITMW-5-201710	10/25/2017	1470	38.2	1.6
ITMW-5	ITMW-5-201804	4/19/2018	1590	34.2	1.4
ITMW-5	ITMW-5-201811	11/15/2018	2250	36.9	2.0
ITMW-5	ITMW-5-201904	4/24/2019	3660	37.0	1.6
ITMW-5	ITMW-5-201910	10/24/2019	3700	42.1	2.0
ITMW-6	ITMW-6-19891001	10/1/1989	< ND		< ND
ITMW-6	ITMW-6-19900101	1/1/1990	< ND		< ND
ITMW-6	ITMW-6-19961201	12/1/1996	6.8		< ND
ITMW-6	ITMW-6-19970501	5/1/1997	7	< ND	< ND
ITMW-6	ITMW-6-19990201	2/1/1999	25	< ND	< ND
ITMW-6	ITMW-6-19990201-FD	2/1/1999	6	< ND	< ND
ITMW-6	ITMW-6-20000301	3/1/2000	< ND	< ND	< ND
ITMW-6	ITMW-6-20000920	9/20/2000	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20010328	3/28/2001	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20010913	9/13/2001	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20020910	9/10/2002	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20020910-FD	9/10/2002	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20030924	9/24/2003	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20040414	4/14/2004	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20040922	9/22/2004	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20050928	9/28/2005	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20061011	10/11/2006	< 5 U	4 J	< 10 U
ITMW-6	ITMW-6-20070920	9/20/2007	< 5 U	< 5 U	< 10 U
ITMW-6	ITMW-6-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
ITMW-6	ITMW-6-20091028	10/28/2009	< 5 U	2.1 J	< 5 U
ITMW-6	ITMW-6-20100510	5/10/2010	< 5 U	1.9 J	< 5 U
ITMW-6	ITMW-6-20111025-FD	10/25/2011	< 5 U	2.7 J	< 5 U
ITMW-6	ITMW-6-20111025	10/25/2011	< 5 U	2.4 J	< 5 U
ITMW-6	ITMW-6-20120417	4/17/2012	< 5 U	2.9 J	< 5 U
ITMW-6	ITMW-6-20121017	10/17/2012	< 1.6 U	3.1 J	< 0.11 U
ITMW-6	ITMW-6-20130422	4/22/2013	< 1.6 U	2.1 J	0.33 J
ITMW-6	ITMW-6-101413	10/14/2013	3.4 J	5.5	0.18 J
ITMW-6	ITMW-6-201403	3/6/2014	2.7 J	4.9 J	0.18 J
ITMW-6	ITMW-6-201405	5/13/2014	3.6 J	5.3	0.17 J
ITMW-6	ITMW-6-201407	7/30/2014	4.4 J	6.7	< 0.50 U
ITMW-6	ITMW-6-201410	10/15/2014	3.1 J	5.2	< 0.50 U
ITMW-6	ITMW-6-201501	1/13/2015	3.7	5.7	< 0.50 U
ITMW-6	ITMW-6-201504	4/14/2015	3.7	5.3 J	< 0.13 U
ITMW-6	ITMW-6-201507	7/22/2015	4.7	6.3	0.31 J
ITMW-6	ITMW-6-201510	10/7/2015	3.1	5.5	0.21 J
ITMW-6	ITMW-6-201601	1/12/2016	4.2	6.2	0.32 J
ITMW-6	ITMW-6-201605	5/5/2016	4.4	5.3	0.22 J
ITMW-7	ITMW-7-19891101	11/1/1989	< ND		< ND
ITMW-7	ITMW-7-19900101	1/1/1990	< ND		< ND
ITMW-7	ITMW-7-19961201	12/1/1996	290		3
ITMW-7	ITMW-7-19970501	5/1/1997	380	180	< ND
ITMW-7	ITMW-7-19990201	2/1/1999	< ND	< ND	< ND
ITMW-7	ITMW-7-19990601	6/1/1999	320	144	< ND
ITMW-7	ITMW-7-19990601-FD	6/1/1999	300	140	< ND
ITMW-7	ITMW-7-20000301	3/1/2000	262	100	< ND
ITMW-7	ITMW-7-20000301-FD	3/1/2000	207	92	< ND
ITMW-7	ITMW-7-20000919	9/19/2000	207	100	< 10 U
ITMW-7	ITMW-7-20000921-FD	9/21/2000	109	< 5 U	< 10 U
ITMW-7	ITMW-7-20010328	3/28/2001	161	66	< 10 U
ITMW-7	ITMW-7-20010913	9/13/2001	139	68	< 10 U
ITMW-7	ITMW-7-20020910	9/10/2002	137	56	< 10 U
ITMW-7	ITMW-7-20020910-FD	9/10/2002	128	54	< 10 U
ITMW-7	ITMW-7-20030227	2/27/2003	172	92.5	< 10 U
ITMW-7	ITMW-7-20030924	9/24/2003	125	57.3	< 10 U
ITMW-7	ITMW-7-20040414	4/14/2004	201	80.7	< 10 U
ITMW-7	ITMW-7-20040922	9/22/2004	132	48.4	< 10 U
ITMW-7	ITMW-7-20050407	4/7/2005	122	39	< 10 U
ITMW-7	ITMW-7-20050928	9/28/2005	100	30.5	< 10 U
ITMW-7	ITMW-7-20060314	3/14/2006	153	59.5	< 10 U

RAMBOLL

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
ITMW-7	ITMW-7-20061010	10/10/2006	140	44	1 J
ITMW-7	ITMW-7-20070417	4/17/2007	83	29.4	< 10 U
ITMW-7	ITMW-7-20070921	9/21/2007	72	22	< 10 U
ITMW-7	ITMW-7-20080430	4/30/2008	70 0	18 0	< 10 U
ITMW-7	ITMW-7-20081211	12/11/2008	66	19	< 5 U
ITMW-7	ITMW-7-20090427	4/27/2009	87	26	< 5 U
ITMW-7	ITMW-7-20091028	10/28/2009	60	20	< 5 U
ITMW-7	ITMW-7-20100510	5/10/2010	73	18	< 5 U
ITMW-7	ITMW-7-20110323	3/23/2011	225 EF	93.2	56.5
ITMW-7	ITMW-7-20111025	10/25/2011	99	26	< 5 U
ITMW-7	ITMW-7-20120418	4/18/2012	100	20	< 5 U
ITMW-7	ITMW-7-20121018	10/18/2012	63	17	< 0.11 U
ITMW-7	ITMW-7-20130425	4/25/2013	69	16	0.27 J
ITMW-7	ITMW-7-101713	10/17/2013	47	12	< 0.11 U
ITMW-7	ITMW-7-201403	3/8/2014	37.4	10	0.24 J
ITMW-7	ITMW-7-201405	5/14/2014	37.0	11.1	0.22 J
ITMW-7	ITMW-7-201407	7/30/2014	36.7	11.2	< 0.50 U
ITMW-7	ITMW-7-201410	10/15/2014	33.7	10.3	< 0.50 U
ITMW-7	ITMW-7-201501	1/14/2015	34.7	10.5	< 0.50 U
ITMW-7	ITMW-7-201504	4/14/2015	29.3	9.2	< 0.13 U
ITMW-7	ITMW-7-201507	7/22/2015	26.4	8.3	0.19 J
ITMW-7	ITMW-7-201510	10/8/2015	27.6	8.8	0.19 J
ITMW-7	ITMW-7-201601	1/13/2016	44.2	13.0	0.23 J
ITMW-7	ITMW-7-201605	5/5/2016	33.8	8.7	< 0.13 U
ITMW-7	DUP-06-201605	5/5/2016	33.9	9.0	0.18 J
ITMW-7	ITMW-7-201611	11/10/2016	33.2	10	0.26 J
ITMW-7	ITMW-07-201704	4/27/2017	29.2	9.3	0.14 J
ITMW-7	ITMW-7-201710	10/25/2017	23.4	7.5	0.20 J
ITMW-7	ITMW-7-201804	4/19/2018	24.2	8.3	0.13 J
ITMW-7	ITMW-7-201811	11/15/2018	22.8	7.3	< 0.13 U
ITMW-7	ITMW-7-201904	4/24/2019	19.4	6.5	< 0.11 U
ITMW-7	ITMW-7-201910	10/22/2019	20.5	6.7	0.13 J
ITMW-9	ITMW-9-19900101	1/1/1990	< ND		< ND
ITMW-9	ITMW-9-19961201	12/1/1996	230		< ND
ITMW-9	ITMW-9-19970501	5/1/1997	7	< ND	< ND
ITMW-9	ITMW-9-19990201	2/1/1999	40	24	< ND
ITMW-9	ITMW-9-20000301	3/1/2000	69	45	< ND
ITMW-9	ITMW-9-20000920	9/20/2000	57.3	14.3	< 10 U
ITMW-9	ITMW-9-20000920-FD	9/20/2000	54.8	14	< 10 U
ITMW-9	ITMW-9-20010328	3/28/2001	40	12	< 10 U
ITMW-9	ITMW-9-20010913	9/13/2001	40	12	< 10 U
ITMW-9	ITMW-9-20020910	9/10/2002	61	21	< 10 U
ITMW-9	ITMW-9-20030228	2/28/2003	54.2	37.2	< 10 U
ITMW-9	ITMW-9-20030923	9/23/2003	91	49.5	< 10 U
ITMW-9	ITMW-9-20030923-FD	9/23/2003	97.6	53.9	< 10 U
ITMW-9	ITMW-9-20040414	4/14/2004	71.8	38.8	< 10 U
ITMW-9	ITMW-9-20040922	9/22/2004	80.7	21.1	< 10 U
ITMW-9	ITMW-9-20050406	4/6/2005	79	30.4	< 10 U
ITMW-9	ITMW-9-20050927	9/27/2005	98.8	54.6	< 10 U
ITMW-9	ITMW-9-20060314	3/14/2006	101	78.7	< 10 U
ITMW-9	ITMW-9-20061011	10/11/2006	110	77	6 J
ITMW-9	ITMW-9-20070417	4/17/2007	79	39.6	< 10 U
ITMW-9	ITMW-9-20070920	9/20/2007	76	26	< 10 U
ITMW-9	ITMW-9-20080428	4/28/2008	82 0	37 0	< 10 U
ITMW-9	ITMW-9-20081209	12/9/2008	90	62	< 5 U
ITMW-9	ITMW-9-20090427	4/27/2009	110	51	< 5 U
ITMW-9	ITMW-9-20091027	10/27/2009	120	67	5.7
ITMW-9	ITMW-9-20091027-FD	10/27/2009	120	71	6.1
ITMW-9	ITMW-9-20100511	5/11/2010	130	38	< 5 U
ITMW-9	ITMW-9-20110322	3/22/2011	120	48	2.4 J
ITMW-9	ITMW-9-20111025	10/25/2011	90	57	< 5 U
ITMW-9	ITMW-9-20120417	4/17/2012	150	50	2.5 J
ITMW-9	ITMW-9-20121018	10/18/2012	120	53	5.2
ITMW-9	ITMW-9-20130424	4/24/2013	140	44	1.6 J
ITMW-9	ITMW-9-101713	10/17/2013	83	42	16
ITMW-9	ITMW-9-201403	3/8/2014	112	40.4	0.41 J
ITMW-9	ITMW-9-201405	5/14/2014	113	42.2	0.64 J
ITMW-9	ITMW-9-201407	7/30/2014	141	44.4	0.53 J
ITMW-9	DUP-6-201407	7/30/2014	143	43.9	0.54 J
ITMW-9	ITMW-9-201410	10/15/2014	76.9	39.1	1.8 J
ITMW-9	DUP-02-201410	10/15/2014	75.3	38.8	1.7 J
ITMW-9	ITMW-9-201501	1/13/2015	89.6	39.1	1.4
ITMW-9	DUP-02-201501	1/13/2015	89.4	39.1	1.4
ITMW-9	ITMW-9-201504	4/15/2015	100	35.4	< 0.13 U
ITMW-9	ITMW-9-201507	7/21/2015	142	35.5	0.40 J
ITMW-9	ITMW-9-201510	10/7/2015	55.6	26.6	1.0
ITMW-9	DUP-09-201510	10/7/2015	55.2	26.8	1.1
ITMW-9	ITMW-9-201601	1/13/2016	92.4	35.3	1.1
ITMW-9	DUP-04-201601	1/13/2016	91.3	34.1	1.1
ITMW-9	ITMW-9-201605	5/5/2016	97.3	31.6	0.48 J
ITMW-9	ITMW-9-201611	11/8/2016	2550	73.0 J	0.17 J

RAMBOLL

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
ITMW-9	ITMW-9-201612	12/14/2016	193	40.1	1
ITMW-9	ITMW-9-201710	10/25/2017	797	60.8	1.7
ITMW-9	ITMW-9-201811	11/15/2018	1390	77.1	2.0
ITMW-9	ITMW-9-201910	10/23/2019	2720	96.3	2.0
ITMW-9	DUP-07-201910	10/23/2019	2810	95.0	2.0
ITMW-10	ITMW-10-19900101	1/1/1990	< ND		< ND
ITMW-10	ITMW-10-19961201	12/1/1996	4		< ND
ITMW-10	ITMW-10-19990201	2/1/1999	25	13	< ND
ITMW-10	ITMW-10-20000301	3/1/2000	23	17	< ND
ITMW-10	ITMW-10-20000920	9/20/2000	18.1	15.9	< 10 U
ITMW-10	ITMW-10-20010328	3/28/2001	40	21	< 10 U
ITMW-10	ITMW-10-20010913	9/13/2001	29	28	< 10 U
ITMW-10	ITMW-10-20010913-FD	9/13/2001	30	27	< 10 U
ITMW-10	ITMW-10-20020910	9/10/2002	55	38	< 10 U
ITMW-10	ITMW-10-20030228	2/28/2003	57.6	50.9	< 10 U
ITMW-10	ITMW-10-20030716	7/16/2003	55.3	49.2	< 10 U
ITMW-10	ITMW-10-20030923	9/23/2003	65.9	56.5	< 10 U
ITMW-10	ITMW-10-20040414	4/14/2004	80	57.4	< 10 U
ITMW-10	ITMW-10-20040922	9/22/2004	59.6	50	< 10 U
ITMW-10	ITMW-10-20050406	4/6/2005	72.1	57.7	< 10 U
ITMW-10	ITMW-10-20050928	9/28/2005	57.6	41.6	< 10 U
ITMW-10	ITMW-10-20060314	3/14/2006	82	67.2	< 10 U
ITMW-10	ITMW-10-20061010	10/10/2006	88	54	5 J
ITMW-10	ITMW-10-20070417	4/17/2007	76	52.4	< 10 U
ITMW-10	ITMW-10-20070920	9/20/2007	67	48	5 J
ITMW-10	ITMW-10-20080428	4/28/2008	61 0	46 0	< 10 U
ITMW-10	ITMW-10-20081209	12/9/2008	78	50	< 5 U
ITMW-10	ITMW-10-20090427	4/27/2009	87	52	4.4 J
ITMW-10	ITMW-10-20091027	10/27/2009	110	50	4.2 J
ITMW-10	ITMW-10-20100511	5/11/2010	85	46	2.4 J
ITMW-10	ITMW-10-20110322	3/22/2011	92	42	2.7 J
ITMW-10	ITMW-10-20111025	10/25/2011	94	39	2.5 J
ITMW-10	ITMW-10-20121018	10/18/2012	100	37	2.5
ITMW-10	ITMW-10-101513	10/15/2013	100	32	3.1
ITMW-10	ITMW-10-201403	3/6/2014	166	32.3	1.2 J
ITMW-10	ITMW-10-201405	5/14/2014	184	32.4	1.4 J
ITMW-10	ITMW-10-201407	7/30/2014	273	38.3	1.8 J
ITMW-10	ITMW-10-201410	10/15/2014	243	32.3	1.7 J
ITMW-10	ITMW-10-201501	1/14/2015	403	38.9	1.4
ITMW-10	ITMW-10-201504	4/15/2015	258	34.8	0.98 J
ITMW-10	DUP-08-201504	4/16/2015	303	36.1	1.2
ITMW-10	ITMW-10-201507	7/22/2015	504	36.2	1.3
ITMW-10	DUP-01-201507	7/22/2015	501	36.7	1.5
ITMW-10	ITMW-10-201510	10/7/2015	437	37.5	1.5
ITMW-10	DUP-04-201510	10/7/2015	445	37.9	1.6
ITMW-10	ITMW-10-201601	1/13/2016	761	44.4	1.6
ITMW-10	DUP-01-201601	1/13/2016	735	45.5	1.7
ITMW-10	ITMW-10-201605	5/5/2016	743	36.6	1.1
ITMW-10	DUP-01-201605	5/5/2016	673	34.0	1.1
ITMW-10	ITMW-10-201611	11/10/2016	113	12.5	0.52 J
ITMW-10	ITMW-10-201704	4/28/2017	132	18.3	0.71 J
ITMW-10	ITMW-10-201710	10/25/2017	72.9	13.3	0.82 J
ITMW-10	ITMW-10-201804	4/19/2018	65.4	12.2	0.65 J
ITMW-10	ITMW-10-201811	11/14/2018	45.0	10.9	0.77 J
ITMW-10	ITMW-10-201904	4/25/2019	60.5	8.1	0.39 J
ITMW-10	DUP-07-201904	4/25/2019	59.4	7.9	0.32 J
ITMW-10	ITMW-10-201910	10/24/2019	127	6.3	0.40 J
ITMW-11	ITMW-11-19900101	1/1/1990	19000		180
ITMW-11	ITMW-11-19901101	11/1/1990	4700		93
ITMW-11	ITMW-11-19910201	2/1/1991	3400		< ND
ITMW-11	ITMW-11-19931101	11/1/1993	2300		43
ITMW-11	ITMW-11-19961201	12/1/1996	510		< ND
ITMW-11	ITMW-11-19990201	2/1/1999	650	10	< ND
ITMW-11	ITMW-11-20000301	3/1/2000	3370	206	< ND
ITMW-11	ITMW-11-20000919	9/19/2000	8030	327	11.7
ITMW-11	ITMW-11-20010327	3/27/2001	7000	200	< 10 U
ITMW-11	ITMW-11-20010913	9/13/2001	6000	183	< 10 U
ITMW-11	ITMW-11-20011120	11/20/2001	< 5 U	< 5 U	< 10 U
ITMW-11	ITMW-11L-20020909	9/9/2002	7100	206	10
ITMW-11	ITMW-11T-20020909	9/9/2002	800	72	< 10 U
ITMW-11	ITMW-11-20030226	2/26/2003	4110	346	58.8
ITMW-11	ITMW-11-20030226-FD	2/26/2003	3630	306	60.7
ITMW-11	ITMW-11-20030924	9/24/2003	3990	269	11.8
ITMW-11	ITMW-11-20040413	4/13/2004	3160	240	37.8
ITMW-11	ITMW-11-20040921	9/21/2004	3450	204	< 10 U
ITMW-11	ITMW-11-20050407	4/7/2005	4210	282	66.7
ITMW-11	ITMW-11-20050929	9/29/2005	3910	199	18
ITMW-11	ITMW-11-20060316	3/16/2006	14600	1290	482
ITMW-11	ITMW-11-20060316-FD	3/16/2006	12800	1210	381
ITMW-11	ITMW-11-20061013	10/13/2006	8000	340	47
ITMW-11	ITMW-11-20070419	4/19/2007	3970	199	< 200 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
ITMW-11	ITMW-11-20070921	9/21/2007	7600	180	21
ITMW-11	ITMW-11-20080430	4/30/2008	4500 0	210 0	58 0
ITMW-11	ITMW-11-20081210	12/10/2008	5800	190	27
ITMW-11	ITMW-11-20090427	4/27/2009	2500	200	24
ITMW-11	ITMW-11-20100511-FD	5/11/2010	6200	290	28
ITMW-11	ITMW-11-20100511	5/11/2010	6200	290	45
ITMW-11	ITMW-11-20110323	3/23/2011	9700	520	130
ITMW-11	ITMW-11-20111026	10/26/2011	8800	310	16
ITMW-11	ITMW-11-20121019	10/19/2012	1400	34	2.4
ITMW-11	ITMW-11-101713	10/17/2013	180	8.7	2.9
ITMW-11	ITMW-11-201403	3/8/2014	2980	187 M1	22.5
ITMW-11	ITMW-11-201405	5/15/2014	1590	99.5	5.5
ITMW-11	DUP-4-201405	5/15/2014	1470	107	4.9
ITMW-11	ITMW-11-201407	7/31/2014	7380	156	6.9
ITMW-11	ITMW-11-201410	10/15/2014	2050	70.4	3.5
ITMW-11	ITMW-11-20141204	12/4/2014	1530	55.0	6.4
ITMW-11	ITMW-11-201501	1/15/2015	68.3	9.8	1.9
ITMW-11	ITMW-11-201504	4/15/2015	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-11	ITMW-11-201507	7/22/2015	33.2	5.9	< 0.13 U
ITMW-11	ITMW-11-201510	10/7/2015	721	57.9	0.96 J
ITMW-11	ITMW-11-201601	1/13/2016	605	100	13.1
ITMW-11	DUP-03-201601	1/13/2016	2100	199	65.3
ITMW-11	ITMW-11-201605	5/5/2016	4630	173	11.2
ITMW-11	ITMW-11-201904	4/25/2019	3670	89.9	0.19 J
ITMW-11	DUP-05-201904	4/25/2019	4060	93.2	2.0
ITMW-11	ITMW-11-201910	10/24/2019	9.9	0.39 J	< 0.11 U
ITMW-12	ITMW-12-19901101	11/1/1990	2400		140
ITMW-12	ITMW-12-19910201	2/1/1991	2100		< ND
ITMW-12	ITMW-12-19931101	11/1/1993	2500		35
ITMW-12	ITMW-12-19961201	12/1/1996	1200		< ND
ITMW-12	ITMW-12-19990201	2/1/1999	3100	480	34
ITMW-12	ITMW-12-20000301	3/1/2000	3110	320	19
ITMW-12	ITMW-12-20000919	9/19/2000	3350	180	12
ITMW-12	ITMW-12-20010327	3/27/2001	3900	200	20
ITMW-12	ITMW-12-20010913	9/13/2001	3100	159	< 10 U
ITMW-12	ITMW-12-20011120	11/20/2001	2400	300	20
ITMW-12	ITMW-12-20020911	9/11/2002	4200	300	< 10 U
ITMW-12	ITMW-12-20030226	2/26/2003	3460	287	< 10 U
ITMW-12	ITMW-12-20030226-FD	2/26/2003	3940	308	< 10 U
ITMW-12	ITMW-12-20030924	9/24/2003	2920	242	< 10 U
ITMW-12	ITMW-12-20040413	4/13/2004	2410	245	< 10 U
ITMW-12	ITMW-12-20040921	9/21/2004	1780	238	< 10 U
ITMW-12	ITMW-12-20050929	9/29/2005	2120	273	< 10 U
ITMW-12	ITMW-12-20061013	10/13/2006	3500	310	9 J
ITMW-12	ITMW-12-20070921	9/21/2007	2100	220	< 10 U
ITMW-12	ITMW-12-20081209	12/9/2008	1500	180	< 5 U
ITMW-12	ITMW-12-20111026	10/26/2011	1600	230	1.8 J
ITMW-12	ITMW-12-20121019	10/19/2012	2500	200	3.6
ITMW-12	ITMW-12-101713	10/17/2013	2300	190	3.2
ITMW-12	ITMW-12-20131017-FD	10/17/2013	2300	160	4.1
ITMW-12	ITMW-12-201403	3/8/2014	1910	148	3.4
ITMW-12	ITMW-12-201403-FD	3/8/2014	2400	207	3.4
ITMW-12	ITMW-12-201405	5/14/2014	2740	164	14.0
ITMW-12	ITMW-12-201407	7/31/2014	2710	173	13.6
ITMW-12	ITMW-12-201410	10/15/2014	2570	188	3.5
ITMW-12	DUP-04-201410	10/15/2014	2950	192	3.7
ITMW-12	ITMW-12-20141204	12/4/2014	468	51.1	0.88 J
ITMW-12	ITMW-12-201501	1/15/2015	57.1	4.2	< 0.50 U
ITMW-12	DUP-04-201501	1/15/2015	59.3	4.8	< 0.50 U
ITMW-12	ITMW-12-201504	4/15/2015	2260	149	< 0.13 U
ITMW-12	ITMW-12-201507	7/23/2015	652	46.2	0.58 J
ITMW-12	ITMW-12-201510	10/7/2015	314	34.6	0.42 J
ITMW-12	ITMW-12-201601	1/13/2016	465	70.5	< 0.13 U
ITMW-12	ITMW-12-201605	5/5/2016	675	78.9	< 0.13 U
ITMW-12R	ITMW-12R-201910	10/24/2019	11800	275	7.1
ITMW-13	ITMW-13-19901101	11/1/1990	34		18
ITMW-13	ITMW-13-19910201	2/1/1991	32		35
ITMW-13	ITMW-13-19931101	11/1/1993			29
ITMW-13	ITMW-13-19961201	12/1/1996	36		36
ITMW-13	ITMW-13-19990201	2/1/1999	36	140	48
ITMW-13	ITMW-13-20000301	3/1/2000	37	121	53
ITMW-13	ITMW-13-20000919	9/19/2000	22.4	112	50.5
ITMW-13	ITMW-13-20010328	3/28/2001	44	92	40
ITMW-13	ITMW-13-20010913	9/13/2001	35	111	80
ITMW-13	ITMW-13L-20020909	9/9/2002	99	110	10
ITMW-13	ITMW-13T-20020909	9/9/2002	81	86	20
ITMW-13	ITMW-13-20030226	2/26/2003	70.2	85.5	< 10 U
ITMW-13	ITMW-13-20030924	9/24/2003	159	130	< 10 U
ITMW-13	ITMW-13-20040413	4/13/2004	48.4	87.2	< 10 U
ITMW-13	ITMW-13-20040921	9/21/2004	25.5	71.6	< 10 U
ITMW-13	ITMW-13-20050407	4/7/2005	71.8	103	< 10 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
ITMW-13	ITMW-13-20050930	9/30/2005	72.7	114	17.9
ITMW-13	ITMW-13-20060316	3/16/2006	141	187	< 10 U
ITMW-13	ITMW-13-20061014	10/14/2006	100	150	17
ITMW-13	ITMW-13-20070418	4/18/2007	83.1	78	4.3 J
ITMW-13	ITMW-13-20070920	9/20/2007	28	40	< 10 U
ITMW-13	ITMW-13-20080429	4/29/2008	69 0	72 0	< 10 U
ITMW-13	ITMW-13-20081210	12/10/2008	26	23	< 5 U
ITMW-13	ITMW-13-20090427	4/27/2009	79	78	< 5 U
ITMW-13	ITMW-13-20091027	10/27/2009	18	22	< 5 U
ITMW-13	ITMW-13-20100512	5/12/2010	97	72	< 5 U
ITMW-13	ITMW-13-20110323	3/23/2011	130	83	< 5 U
ITMW-13	ITMW-13-20111027-FD	10/27/2011	64	40	< 5 U
ITMW-13	ITMW-13-20111027	10/27/2011	65	41	< 5 U
ITMW-13	ITMW-13-20120419	4/19/2012	97	63	< 5 U
ITMW-13	ITMW-13-20121018	10/18/2012	400	260	1.0 J
ITMW-13	ITMW-13-20130425	4/25/2013	86	52	0.14 J
ITMW-13	ITMW-13-101613	10/16/2013	150	74	< 0.11 U
ITMW-13	ITMW-13-201403	3/8/2014	69.3	45.3	< 0.13 U
ITMW-13	ITMW-13-201405	5/14/2014	54.0	34.7	0.17 J
ITMW-13	ITMW-13-201407	7/30/2014	36.5	27.5	< 0.50 U
ITMW-13	ITMW-13-201410	10/15/2014	40.8	25.9	< 0.50 U
ITMW-13	ITMW-13-201501	1/14/2015	45.8	28.5	< 0.50 U
ITMW-13	ITMW-13-201504	4/15/2015	43.1	26.5	< 0.13 U
ITMW-13	DUP-03-201504	4/15/2015	47.7	26.7	< 0.13 U
ITMW-13	ITMW-13-201507	7/22/2015	37.3	20.1	0.18 J
ITMW-13	DUP-02-201507	7/22/2015	36.1	20.8	0.17 J
ITMW-13	ITMW-13-201510	10/7/2015	29.9	17.8	0.20 J
ITMW-13	DUP-01-201510	10/7/2015	25.5	17.6	0.18 J
ITMW-13	ITMW-13-201601	1/13/2016	47.6	26.7	0.17 J
ITMW-13	DUP-02-201601	1/13/2016	51.6	26.1	< 0.13 U
ITMW-13	ITMW-13-201605	5/5/2016	41.9	20.8	0.17 J
ITMW-14	ITMW-14-19901101	11/1/1990	< ND		13
ITMW-14	ITMW-14-19910201	2/1/1991	< ND		< ND
ITMW-14	ITMW-14-19931101	11/1/1993	6		< ND
ITMW-14	ITMW-14-19961201	12/1/1996	< ND		< ND
ITMW-14	ITMW-14-19990201	2/1/1999	< ND	29	20
ITMW-14	ITMW-14-20000301	3/1/2000	< ND	24	12
ITMW-14	ITMW-14-20000919	9/19/2000	< 5 U	13.6	< 10 U
ITMW-14	ITMW-14-20010327	3/27/2001	< 5 U	24	10
ITMW-14	ITMW-14-20010913	9/13/2001	< 5 U	5	< 10 U
ITMW-14	ITMW-14-20020911	9/11/2002	41	6	< 10 U
ITMW-14	ITMW-14-20030226	2/26/2003	< 5 U	< 5 U	< 10 U
ITMW-14	ITMW-14-20030924	9/24/2003	< 5 U	< 5 U	< 10 U
ITMW-14	ITMW-14-20040413	4/13/2004	< 5 U	< 5 U	< 10 U
ITMW-14	ITMW-14-20040921	9/21/2004	< 5 U	< 5 U	< 10 U
ITMW-14	ITMW-14-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
ITMW-14	ITMW-14-20061014	10/14/2006	4 J	8	< 10 UJ
ITMW-14	ITMW-14-20070921	9/21/2007	5 J	9	< 10 U
ITMW-14	ITMW-14-20081210	12/10/2008	5.7	9.3	< 5 U
ITMW-14	ITMW-14-20101104	11/4/2010	110	14	< 5 U
ITMW-14	ITMW-14-20111027	10/27/2011	6.3	11	< 5 U
ITMW-14	ITMW-14-20120419	4/19/2012	7.6	16	< 5 U
ITMW-14	ITMW-14-20121019	10/19/2012	5.4	11	< 0.11 U
ITMW-14	ITMW-14-20130425	4/25/2013	6.8	14	< 0.11 U
ITMW-14	ITMW-14-101613	10/16/2013	2.9 J	4.9 J	< 0.11 U
ITMW-14	ITMW-14-201403	3/8/2014	6.1	11.9	< 0.13 U
ITMW-14	ITMW-14-201405	5/14/2014	5.3	11.3	< 0.13 U
ITMW-14	ITMW-14-201407	7/30/2014	4.0 J	9.2	< 0.50 U
ITMW-14	ITMW-14-201410	10/15/2014	4.1 J	9.4	< 0.50 U
ITMW-14	ITMW-14-201501	1/14/2015	4.9	11.5	< 0.50 U
ITMW-14	ITMW-14-201504	4/15/2015	5.0	10.7	< 0.13 U
ITMW-14	ITMW-14-201507	7/22/2015	4.3	9.6	< 0.13 U
ITMW-14	ITMW-14-201510	10/7/2015	4.6	9.8	< 0.13 U
ITMW-14	ITMW-14-201601	1/12/2016	4.3	10	< 0.13 U
ITMW-14	ITMW-14-201605	5/5/2016	3.9	8.6	< 0.13 U
ITMW-15	ITMW-15-19901101	11/1/1990	2500		55
ITMW-15	ITMW-15-19910201	2/1/1991	1700		< ND
ITMW-15	ITMW-15-19910415	4/15/1991	2000		< ND
ITMW-15	ITMW-15-19910419	4/19/1991	2100		< ND
ITMW-15	ITMW-15-19910420	4/20/1991	2400		< ND
ITMW-15	ITMW-15-19931101	11/1/1993	4300		10
ITMW-15	ITMW-15-19961201	12/1/1996	240		< ND
ITMW-15	ITMW-15-19990201	2/1/1999	400	120	< ND
ITMW-15	ITMW-15-20000301	3/1/2000	339	97	< ND
ITMW-15	ITMW-15-20000919	9/19/2000	362	92.7	< 10 U
ITMW-15	ITMW-15-20000919-FD	9/19/2000	376	91	< 10 U
ITMW-15	ITMW-15-20010328	3/28/2001	290	57	< 10 U
ITMW-15	ITMW-15-20010913	9/13/2001	380	87	< 10 U
ITMW-15	ITMW-15-20010913-FD	9/13/2001	370	80	< 10 U
ITMW-15	ITMW-15-20011120	11/20/2001	157	30	< 10 U
ITMW-15	ITMW-15-20020911	9/11/2002	320	75	< 10 U

RAMBOLL

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
ITMW-15	ITMW-15-20030226	2/26/2003	301	98.7	< 10 U
ITMW-15	ITMW-15-20030925	9/25/2003	490	91.9	< 10 U
ITMW-15	ITMW-15-20040414	4/14/2004	334	126	< 10 U
ITMW-15	ITMW-15-20040921	9/21/2004	774	118	< 10 U
ITMW-15	ITMW-15-20050407	4/7/2005	685	133	< 10 U
ITMW-15	ITMW-15-20050929	9/29/2005	862	189	< 10 U
ITMW-15	ITMW-15-20060316	3/16/2006	908	183	12
ITMW-15	ITMW-15-20061013	10/13/2006	680	140	7 J
ITMW-15	ITMW-15-20070419	4/19/2007	591	110	8.5 J
ITMW-15	ITMW-15-20070921	9/21/2007	1000	190	27
ITMW-15	ITMW-15-20080429	4/29/2008	100 0	18 0	< 10 U
ITMW-15	ITMW-15-20081210	12/10/2008	1100	150	< 5 U
ITMW-15	ITMW-15-20090427	4/27/2009	2800	130	17
ITMW-15	ITMW-15-20100511	5/11/2010	2800	160	11
ITMW-15	ITMW-15-20111026	10/26/2011	1100	74	< 5 U
ITMW-15	ITMW-15-20121019	10/19/2012	240	14	1.1 J
ITMW-15	ITMW-15-101613	10/16/2013	2800	170	14
ITMW-15	ITMW-15-201403	3/8/2014	1630	152	11.6
ITMW-15	DUP2-201405	5/14/2014	899	61.7	4.4
ITMW-15	ITMW-15-201405	5/14/2014	729	60.7	4.1
ITMW-15	ITMW-15-201407	7/30/2014	1820	82.5	3.1
ITMW-15	DUP-4-201407	7/30/2014	1850	82.8	3.0
ITMW-15	ITMW-15-201410	10/16/2014	1490	63.0	2.0
ITMW-15	DUP-05-201410	10/16/2014	1660	66.4	1.8 J
ITMW-15	ITMW-15-20141205	12/5/2014	63.0	< 0.50 U	< 0.50 U
ITMW-15	ITMW-15-201501	1/15/2015	56.5	2.9	< 0.50 U
ITMW-15	DUP-05-201501	1/15/2015	61.7	3.8	< 0.50 U
ITMW-15	ITMW-15-201504	4/15/2015	101	7.5	< 0.13 U
ITMW-15	ITMW-15-201507	7/22/2015	110	22.4	1.3
ITMW-15	ITMW-15-201510	10/8/2015	38.9	2.4	< 0.13 U
ITMW-15	ITMW-15-201601	1/13/2016	797	67.0	4.9
ITMW-15	ITMW-15-201605	5/5/2016	659	48.8	5.8
ITMW-16	ITMW-16-19910201	2/1/1991	31		< ND
ITMW-16	ITMW-16-19931101	11/1/1993	41		7
ITMW-16	ITMW-16-19961201	12/1/1996	< ND		< ND
ITMW-16	ITMW-16-19990201	2/1/1999	< ND	< ND	< ND
ITMW-16	ITMW-16-20000301	3/1/2000	7	< ND	< ND
ITMW-16	ITMW-16-20000921	9/21/2000	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20010326	3/26/2001	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20010913	9/13/2001	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20020911	9/11/2002	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20030925	9/25/2003	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20040415	4/15/2004	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20040923	9/23/2004	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20050929	9/29/2005	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20050929-FD	9/29/2005	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20061014	10/14/2006	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20070920	9/20/2007	< 5 U	< 5 U	< 10 U
ITMW-16	ITMW-16-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
ITMW-16	ITMW-16-20101106	11/6/2010	17	< 5 U	< 5 U
ITMW-16	ITMW-16-20111027	10/27/2011	< 5 U	< 5 U	< 5 U
ITMW-16	ITMW-16-20120418	4/18/2012	< 5 U	< 5 U	< 5 U
ITMW-16	ITMW-16-20121018	10/18/2012	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-16	ITMW-16-20130424	4/24/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-16	ITMW-16-101613	10/16/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-16	ITMW-16-201403	3/7/2014	0.30 J	< 0.080 U	< 0.13 U
ITMW-16	ITMW-16-201405	5/13/2014	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-16	ITMW-16-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-16	ITMW-16-201410	10/15/2014	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-16	ITMW-16-201501	1/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-16	ITMW-16-201504	4/14/2015	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-16	ITMW-16-201507	7/22/2015	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-16	ITMW-16-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-16	ITMW-16-201601	1/13/2016	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-16	ITMW-16-201605	5/5/2016	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-16	ITMW-16-201611	11/9/2016	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-16	ITMW-16-201710	10/25/2017	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-16	ITMW-16-201811	11/13/2018	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-16	ITMW-16-201910	10/24/2019	< 0.17 U	< 0.17 U	< 0.11 U
ITMW-16	DUP-10-201910	10/24/2019	< 0.17 U	0.31 J	< 0.11 U
ITMW-17	ITMW-17-19910201	2/1/1991	21000		< ND
ITMW-17	ITMW-17-19910415	4/15/1991	21000		< ND
ITMW-17	ITMW-17-19910424	4/24/1991	21000		< ND
ITMW-17	ITMW-17-19931101	11/1/1993	18000		15
ITMW-17	ITMW-17-19961201	12/1/1996	9300		< ND
ITMW-17	ITMW-17-19990201	2/1/1999	11000	240	< ND
ITMW-17	ITMW-17-20000301	3/1/2000	6780	171	< ND
ITMW-17	ITMW-17-20000919	9/19/2000	5500	180	< 10 U
ITMW-17	ITMW-17-20010105	1/5/2001	8310	179	< 10 U
ITMW-17	ITMW-17-20010328	3/28/2001	6700	134	< 10 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
ITMW-17	ITMW-17-20010913	9/13/2001	6300	158	< 10 U
ITMW-17	ITMW-17-20020911	9/11/2002	6500	153	< 10 U
ITMW-17	ITMW-17-20030226	2/26/2003	4380	134	< 10 U
ITMW-17	ITMW-17-20030925	9/25/2003	6090	136	< 10 U
ITMW-17	ITMW-17-20040414	4/14/2004	5050	184	< 10 U
ITMW-17	ITMW-17-20040414-FD	4/14/2004	4920	182	< 10 U
ITMW-17	ITMW-17-20040921	9/21/2004	5760	156	< 10 U
ITMW-17	ITMW-17-20050407	4/7/2005	5750	156	< 10 U
ITMW-17	ITMW-17-20050929	9/29/2005	5460	111	< 10 U
ITMW-17	ITMW-17-20060315	3/15/2006	15900	211 E	26.3
ITMW-17	ITMW-17-20061012	10/12/2006	19000	220	21
ITMW-17	ITMW-17-20070418	4/18/2007	13000	298	< 10 U
ITMW-17	ITMW-17-20070921	9/21/2007	11000	210	3 J
ITMW-17	ITMW-17-20080429	4/29/2008	6200 0	140 0	< 10 U
ITMW-17	ITMW-17-20081210	12/10/2008	5600	130	< 5 U
ITMW-17	ITMW-17-20090427	4/27/2009	5200	130	< 5 U
ITMW-17	ITMW-17-20100511	5/11/2010	4500	85	< 5 U
ITMW-17	ITMW-17-20101104	11/4/2010	5400	110	< 5 U
ITMW-17	ITMW-17-20110322	3/22/2011	5300	100	< 5 U
ITMW-17	ITMW-17-20111026	10/26/2011	4500	98	< 5 U
ITMW-17	ITMW-17-20120419	4/19/2012	4700	110	< 5 U
ITMW-17	ITMW-17-20121019	10/19/2012	3500	100	0.48 J
ITMW-17	ITMW-17-20130425	4/25/2013	5600	130	0.90 J
ITMW-17	ITMW-17-101713	10/17/2013	4800	79	< 0.11 U
ITMW-17	ITMW-17-201403	3/8/2014	3770	86.1	0.57 J
ITMW-17	ITMW-17-201403-FD	3/8/2014	4040	87.3	0.74 J
ITMW-17	ITMW-17-201405	5/15/2014	3630	82.9	1.3 J
ITMW-17	DUP-3-201405	5/15/2014	3370	88.5	1.1 J
ITMW-17	ITMW-17-201407	7/30/2014	2260	64.7	< 0.50 U
ITMW-17	ITMW-17-201410	10/16/2014	3510	70.5	3.2
ITMW-17	ITMW-17-20141205	12/5/2014	4630	210 J	7.7
ITMW-17	ITMW-17-201501	1/15/2015	3840	110	1.5
ITMW-17	ITMW-17-201504	4/15/2015	3920	142	< 0.13 U
ITMW-17	ITMW-17-201507	7/22/2015	5350	116	0.51 J
ITMW-17	ITMW-17-201510	10/8/2015	3970	77.2	2.5
ITMW-17	ITMW-17-201601	1/13/2016	2600	44.7	2.2
ITMW-17	ITMW-17-201605	5/5/2016	2720	77.7	< 0.13 U
ITMW-18	ITMW-18-19910201	2/1/1991	3700		< ND
ITMW-18	ITMW-18-19931101	11/1/1993	4500		6
ITMW-18	ITMW-18-19961201	12/1/1996	1600		< ND
ITMW-18	ITMW-18-19990201	2/1/1999	6300	480	< ND
ITMW-18	ITMW-18-20000301	3/1/2000	3560	401	< ND
ITMW-18	ITMW-18-20000919	9/19/2000	4080	409	< 10 U
ITMW-18	ITMW-18-20010327	3/27/2001	4000	400	< 10 U
ITMW-18	ITMW-18-20010327-FD	3/27/2001	4200	370	< 100 U
ITMW-18	ITMW-18-20010911	9/11/2001	4100	300	< 10 U
ITMW-18	ITMW-18-20020911	9/11/2002	6700	300	< 10 U
ITMW-18	ITMW-18-20030226	2/26/2003	5110	290	< 10 U
ITMW-18	ITMW-18-20030924	9/24/2003	7700	415	< 10 U
ITMW-18	ITMW-18-20040413	4/13/2004	7740	410	< 10 U
ITMW-18	ITMW-18-20040921	9/21/2004	7050	380	< 10 U
ITMW-18	ITMW-18-20050408	4/8/2005	7080	389	< 10 U
ITMW-18	ITMW-18-20050929	9/29/2005	4660	241	< 10 U
ITMW-18	ITMW-18-20060315	3/15/2006	5750	373	< 50 U
ITMW-18	ITMW-18-20061013	10/13/2006	6600	300	< 10 U
ITMW-18	ITMW-18-20070418	4/18/2007	15000	387	< 10 U
ITMW-18	ITMW-18-20070921	9/21/2007	8300	310	< 100 U
ITMW-18	ITMW-18-20080430	4/30/2008	9000 0	350 0	< 10 U
ITMW-18	ITMW-18-20081209	12/9/2008	7200	320	< 5 U
ITMW-18	ITMW-18-20090427	4/27/2009	7100	320	< 5 U
ITMW-18	ITMW-18-20091027	10/27/2009	7800	360	< 5 U
ITMW-18	ITMW-18-20100511	5/11/2010	11000	360	< 5 U
ITMW-18	ITMW-18-20111026	10/26/2011	8500	290	< 5 U
ITMW-18	ITMW-18-20120419	4/19/2012	9800	360	2.9 J
ITMW-18	ITMW-18-20121019	10/19/2012	7600	260	1.2 J
ITMW-18	ITMW-18-20130425	4/25/2013	7200	270	0.90 J
ITMW-18	ITMW-18-101713	10/17/2013	7000	280	0.64 J
ITMW-18	ITMW-18-201403	3/8/2014	9380	285	< 0.13 U
ITMW-18	ITMW-18-201403-FD	3/8/2014	8550	242 J	1.7 J
ITMW-18	ITMW-18-201405	5/15/2014	2940	101	< 0.13 U
ITMW-18	DUP-5-201405	5/15/2014	2500	108	< 0.13 U
ITMW-18	ITMW-18-201407	7/31/2014	5360	139	1.6 J
ITMW-18	ITMW-18-201410	10/15/2014	3540	68.5	< 0.50 U
ITMW-18	ITMW-18-20141204	12/4/2014	3690	74.3	< 0.50 U
ITMW-18	ITMW-18-201501	1/15/2015	488	26.5	< 0.50 U
ITMW-18	ITMW-18-201504	4/16/2015	43.5	1.6	< 0.13 U
ITMW-18	DUP-04-201504	4/16/2015	42.8	1.7	< 0.13 U
ITMW-18	ITMW-18-201507	7/23/2015	22.9	0.69 J	< 0.13 U
ITMW-18	DUP-07-201507	7/23/2015	24.7	0.81 J	< 0.13 U
ITMW-18	ITMW-18-201510	10/8/2015	12.9	0.40 J	< 0.13 U
ITMW-18	DUP-06-201510	10/8/2015	12.4	0.41 J	< 0.13 U

RAMBOLL

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
ITMW-18	ITMW-18-201601	1/13/2016	48.8	4.6	< 0.13 U
ITMW-18	ITMW-18-201605	5/5/2016	13.9	0.49 J	< 0.13 U
ITMW-18	ITMW-18-201611	11/9/2016	10.1	< 0.080 U	< 0.13 U
ITMW-18	ITMW-18-201710	10/26/2017	15.0	0.47 J	< 0.13 U
ITMW-18	FD-07-201710	10/26/2017	16.0	0.50 J	< 0.13 U
ITMW-18	ITMW-18-201811	11/14/2018	641	55.3	< 0.13 U
ITMW-18	ITMW-18-201910	10/24/2019	769	68.4	< 0.11 U
ITMW-19	ITMW-19-19910201	2/1/1991	9900		< ND
ITMW-19	ITMW-19-19931101	11/1/1993	27000		7
ITMW-19	ITMW-19-19961201	12/1/1996	25000		< ND
ITMW-19	ITMW-19-19990201	2/1/1999	33000	150	< ND
ITMW-19	ITMW-19-20000301	3/1/2000	33100	128	< ND
ITMW-19	ITMW-19-20000919	9/19/2000	35700	197	< 10 U
ITMW-19	ITMW-19-20010105	1/5/2001	34000	166	< 10 U
ITMW-19	ITMW-19-20010328	3/28/2001	38000	119	< 10 U
ITMW-19	ITMW-19-20010913	9/13/2001	19000	132	< 10 U
ITMW-19	ITMW-19-20020911	9/11/2002	27000	167	< 10 U
ITMW-19	ITMW-19-20030226	2/26/2003	16200	126	< 10 U
ITMW-19	ITMW-19-20030924	9/24/2003	27300	186	< 10 U
ITMW-19	ITMW-19-20040413	4/13/2004	19400	186	< 10 U
ITMW-19	ITMW-19-20040921	9/21/2004	20000	148	< 10 U
ITMW-19	ITMW-19-20050407	4/7/2005	18300	146	< 10 U
ITMW-19	ITMW-19-20050407-FD	4/7/2005	16200	145	< 10 U
ITMW-19	ITMW-19-20050929	9/29/2005	25700	144	< 10 U
ITMW-19	ITMW-19-20060315	3/15/2006	21300	177	< 100 U
ITMW-19	ITMW-19-20061012	10/12/2006	16000	150	2 J
ITMW-19	ITMW-19-20070418	4/18/2007	20000	131	< 10 U
ITMW-19	ITMW-19-20070921	9/21/2007	19000	110	< 200 U
ITMW-19	ITMW-19-20080429	4/29/2008	17000 0	98 0	< 100 U
ITMW-19	ITMW-19-20081210	12/10/2008	11000	93	< 5 U
ITMW-19	ITMW-19-20090427	4/27/2009	13000	100	< 5 U
ITMW-19	ITMW-19-20100511	5/11/2010	19000	130	< 5 U
ITMW-19	ITMW-19-20101104-FD	11/4/2010	19000	150	< 5 U
ITMW-19	ITMW-19-20101104	11/4/2010	18000	140	< 5 U
ITMW-19	ITMW-19-20110322	3/22/2011	16000	110	1 J
ITMW-19	ITMW-19-20111026	10/26/2011	17000	120	< 5 U
ITMW-19	ITMW-19-20120419-FD	4/19/2012	15000	110	< 5 U
ITMW-19	ITMW-19-20120419	4/19/2012	18000	110	< 5 U
ITMW-19	ITMW-19-20121019	10/19/2012	15000	110	0.89 J
ITMW-19	ITMW-19-20130425	4/25/2013	13000	110	0.57 J
ITMW-19	ITMW-19-101813	10/18/2013	16000	91 J	< 0.11 U
ITMW-19	ITMW-19-10182013-FD	10/18/2013	14000	100 J	< 0.11 U
ITMW-19	ITMW-19-201403	3/8/2014	8850	66.7	0.57 J
ITMW-19	ITMW-19-201403-FD	3/8/2014	8270	60.8 J	< 0.13 U
ITMW-19	ITMW-19-201405	5/15/2014	9780 J	65.8	0.85 J
ITMW-19	DUP-6-201405	5/15/2014	15300 J	67.2	0.87 J
ITMW-19	ITMW-19-201407	7/31/2014	13300	85.5	0.96 J
ITMW-19	ITMW-19-201410	10/16/2014	12800	76.7	1.9 J
ITMW-19	ITMW-19-20141205	12/5/2014	33.5	< 0.50 U	< 0.50 U
ITMW-19	ITMW-19-201501	1/15/2015	17.4	< 0.50 U	< 0.50 U
ITMW-19	ITMW-19-201504	4/15/2015	594	2.2	< 0.13 U
ITMW-19	ITMW-19-201507	7/23/2015	15.2	< 0.080 U	< 0.13 U
ITMW-19	ITMW-19-201510	10/8/2015	87.1	0.41 J	< 0.13 U
ITMW-19	ITMW-19-201601	1/13/2016	336	1.2	< 0.13 U
ITMW-19	ITMW-19-201605	5/5/2016	105	0.28 J	< 0.13 U
ITMW-19	ITMW-19-201611	11/9/2016	137	< 0.080 U	< 0.13 U
ITMW-19	ITMW-19-201710	10/26/2017	165	0.52 J	< 0.13 U
ITMW-19	ITMW-19-201811	11/15/2018	204	1.3	< 0.13 U
ITMW-19	ITMW-19-201910	10/24/2019	240 J	1.8	< 0.11 U
ITMW-20	ITMW-20-19910301	3/1/1991	< ND		< ND
ITMW-20	ITMW-20-19931101	11/1/1993	< ND		< ND
ITMW-20	ITMW-20-19961201	12/1/1996	290		< ND
ITMW-20	ITMW-20-19970501	5/1/1997	< ND	< ND	< ND
ITMW-20	ITMW-20-19990201	2/1/1999	< ND	< ND	< ND
ITMW-20	ITMW-20-20000301	3/1/2000	< ND	< ND	< ND
ITMW-20	MW-20-20000921-FS	9/21/2000	< 5 U	< 5 U	< 10 U
ITMW-20	MW-20-20010327-FS	3/27/2001	< 5 U	< 5 U	< 10 U
ITMW-20	MW-20-20010911-FS	9/11/2001	21	< 5 U	< 10 U
ITMW-20	ITMW-20-20020910	9/10/2002	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20030924	9/24/2003	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20040414	4/14/2004	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20040922	9/22/2004	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20050929	9/29/2005	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20061012	10/12/2006	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
ITMW-20	ITMW-20-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
ITMW-20	ITMW-20-20091029	10/29/2009	< 5 U	< 5 U	< 5 U
ITMW-20	ITMW-20-20100512	5/12/2010	< 5 U	< 5 U	< 5 U
ITMW-20	ITMW-20-20101105	11/5/2010	15	< 5 U	< 5 U
ITMW-20	ITMW-20-20111026-FD	10/26/2011	< 5 U	< 5 U	< 5 U

RAMBOLL

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
ITMW-20	ITMW-20-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
ITMW-20	ITMW-20-20120418	4/18/2012	< 5 U	< 5 U	< 5 U
ITMW-20	ITMW-20-20121018	10/18/2012	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-20	ITMW-20-20130423	4/23/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-20	ITMW-20-101413	10/14/2013	< 1.6 U	< 0.56 U	< 0.11 U
ITMW-20	ITMW-20-201403	3/5/2014	< 0.17 U	< 0.080 U	0.15 J
ITMW-20	ITMW-20-201405	5/12/2014	0.21 J	< 0.080 U	< 0.13 U
ITMW-20	ITMW-20-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-20	ITMW-20-201410	10/15/2014	< 0.50 U	< 0.50 U	< 0.50 U
ITMW-20	ITMW-20-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50
ITMW-20	ITMW-20-201504	4/13/2015	< 0.17 U	< 0.080 U	< 0.13
ITMW-20	ITMW-20-201507	7/22/2015	0.20 J	< 0.080 U	< 0.13 U
ITMW-20	ITMW-20-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-20	ITMW-20-201601	1/12/2016	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-20	ITMW-20-201605	5/2/2016	< 0.17	< 0.080 U	< 0.13 U
ITMW-20	ITMW-20-201611	11/9/2016	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-20	ITMW-20-201704	4/26/2017	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-20	ITMW-20-201710	10/25/2017	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-20	ITMW-20-201804	4/18/2018	< 0.17 U	< 0.080 U	< 0.13 U
ITMW-20	ITMW-20-201811	11/14/2018	< 0.17	< 0.080 U	< 0.13 U
ITMW-20	ITMW-20-201904	4/24/2019	< 0.17 U	< 0.17 U	< 0.11 U
ITMW-20	ITMW-20-201910	10/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
ITMW-20	DUP-05-201910	10/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
ITMW-21	ITMW-21-19910301	3/1/1991	21		< ND
ITMW-21	ITMW-21-19931101	11/1/1993	37		< ND
ITMW-21	ITMW-21-19961201	12/1/1996	150		< ND
ITMW-21	ITMW-21-19990201	2/1/1999	190	< ND	< ND
ITMW-21	ITMW-21-20000301	3/1/2000	196	< ND	< ND
ITMW-21	ITMW-21-20000919	9/19/2000	192	< 5 U	< 10 U
ITMW-21	ITMW-21-20010328	3/28/2001	123	< 5 U	< 10 U
ITMW-21	ITMW-21-20010913	9/13/2001	116	< 5 U	< 10 U
ITMW-21	ITMW-21-20020910	9/10/2002	13	< 5 U	< 10 U
ITMW-21	ITMW-21-20030226	2/26/2003	39.5	< 5 U	< 10 U
ITMW-21	ITMW-21-20030923	9/23/2003	9.09	< 5 U	< 10 U
ITMW-21	ITMW-21-20040414	4/14/2004	52.9	< 5 U	< 10 U
ITMW-21	ITMW-21-20040922	9/22/2004	7.8	< 5 U	< 10 U
ITMW-21	ITMW-21-20050928	9/28/2005	6.45	< 5 U	< 10 U
ITMW-21	ITMW-21-20061012	10/12/2006	9	< 5 U	< 10 U
ITMW-21	ITMW-21-20070921	9/21/2007	10	< 5 U	< 10 U
ITMW-21	ITMW-21-20081209	12/9/2008	15	< 5 U	< 5 U
ITMW-21	ITMW-21-20091027	10/27/2009	14	< 5 U	< 5 U
ITMW-21	ITMW-21-20101104	11/4/2010	1100	4.4 J	< 5 U
ITMW-21	ITMW-21-20110322	3/22/2011	24	< 5 U	< 5 U
ITMW-21	ITMW-21-20111025	10/25/2011	11	< 5 U	< 5 U
ITMW-21	ITMW-21-20120417	4/17/2012	30	< 5 U	< 5 U
ITMW-21	ITMW-21-20121019	10/19/2012	7.7	< 0.56 U	< 0.11 U
ITMW-21	ITMW-21-20130424	4/24/2013	18	< 0.56 U	< 0.11 U
ITMW-21	ITMW-21-101513	10/15/2013	20	< 0.56 U	< 0.11 U
ITMW-21	ITMW-21-201403	3/6/2014	14.8	< 0.080 U	< 0.13 U
ITMW-21	ITMW-21-201405	5/14/2014	17.6	< 0.080 U	< 0.13 U
ITMW-21	ITMW-21-201407	7/30/2014	9.4	< 0.50 U	< 0.50 U
ITMW-21	DUP-3-201407	7/30/2014	9.3	< 0.50 U	< 0.50 U
ITMW-21	ITMW-21-201410	10/15/2014	6.0	< 0.50 U	< 0.50 U
ITMW-21	ITMW-21-201501	1/14/2015	10.8	< 0.50 U	< 0.50 U
ITMW-21	ITMW-21-201504	4/14/2015	12.7	< 0.080 U	< 0.13 U
ITMW-21	ITMW-21-201507	7/22/2015	7.6	0.20 J	< 0.13 U
ITMW-21	ITMW-21-201510	10/8/2015	7.2	0.29 J	< 0.13 U
ITMW-21	ITMW-21-201601	1/13/2016	9.8	0.27 J	< 0.13 U
ITMW-21	ITMW-21-201605	5/5/2016	11.1	0.30 J	< 0.13 U
ITMW-21	ITMW-21-201611	11/9/2016	8.1	< 0.080 U	< 0.13 U
ITMW-21	ITMW-21-201704	4/28/2017	11.9	0.31 J	< 0.13 U
ITMW-21	ITMW-21-201710	10/25/2017	7.9	0.25 J	< 0.13 U
ITMW-21	ITMW-21-201804	4/19/2018	13.2	0.38 J	< 0.13 U
ITMW-21	ITMW-21-201811	11/15/2018	8.0	< 0.080 U	< 0.13 U
ITMW-21	ITMW-21-201904	4/24/2019	12.3	0.36 J	< 0.11 U
ITMW-21	ITMW-21-201910	10/24/2019	6.0	0.30 J	< 0.11 U
MW-172	MW-172-20141022	10/22/2014	3010	21.4	2.4
MW-172	MW-172-20141205	12/5/2014	1810	15.6	1.3 J
MW-172	MW-172-201501	1/15/2015	3600	22.4	1.2
MW-172	MW-172-201504	4/16/2015	1740	11.9	0.92 J
MW-172	MW-172-201507	7/23/2015	2140	12.4	0.69 J
MW-172	MW-172-201510	10/8/2015	2110	12.4	0.51 J
MW-172	MW-172-201601	1/13/2016	3190	13.5	< 0.13 U
MW-172	MW-172-201605	5/5/2016	2160	13.3	< 0.13 U
MW-173	MW-173-201504	4/15/2015	< 0.50 U	< 0.50 U	< 0.50
MW-173	MW-173-201507	7/22/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-173	MW-173-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-173	MW-173-201601	1/12/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-173	MW-173-201605	5/4/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-174	MW-174-GW-20150120	1/20/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-174	MW-174-201504	4/14/2015	0.68 J	< 0.50 U	< 0.50

RAMBOLL

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-174	MW-174-201507	7/21/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-174	MW-174-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-174	MW-174-201601	1/12/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-174	MW-174-201605	5/4/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-175	MW-175-GW-20150120	1/20/2015	123	2.0	< 0.50 U
MW-175	MW-175-201504	4/15/2015	98.8	1.5	< 0.50
MW-175	MW-175-201507	7/21/2015	20.3	0.32 J	< 0.13 U
MW-175	MW-175-201510	10/7/2015	78.6	1.6	0.19 J
MW-175	MW-175-201601	1/11/2016	52.6	1.1	< 0.13 U
MW-175	MW-175-201605	5/3/2016	54.9	1.2	< 0.13 U
MW-175	MW-175-201611	11/8/2016	50.9	0.49 J	< 0.13 U
MW-175	MW-175-201704	4/28/2017	53.2	1.3	< 0.13 U
MW-175	MW-175-201710	10/24/2017	72.2	0.27 J	< 0.13 U
MW-175	MW-175-201804	4/18/2018	117	1.9	0.15 J
MW-175	MW-175-201811	11/13/2018	70.7	1.5	0.17 J
MW-175	MW-175-201904	4/23/2019	102	1.6	< 0.11 U
MW-175	MW-175-201910	10/23/2019	138	2.2	0.16 J
MW-176	MW-176-GW-20150120	1/20/2015	720	16.8	0.57 J
MW-176	MW-176-201504	4/14/2015	528	16.7	0.69 J
MW-176	MW-176-201507	7/21/2015	575	21.5	0.79 J
MW-176	MW-176-201510	10/6/2015	420	111	1.2
MW-176	MW-176-201601	1/12/2016	306	125	1.3
MW-176	MW-176-201605	5/3/2016	389	93.7	0.45 J
MW-176	MW-176-201611	11/8/2016	320	202	1.6
MW-176	MW-176-201704	4/28/2017	355	140	0.63 J
MW-176	MW-176-201710	10/24/2017	281	187	0.29 J
MW-176	MW-176-201804	4/17/2018	426	105	1.1
MW-176	MW-176-201811	11/13/2018	397	127	2.1
MW-176	MW-176-201904	4/23/2019	503	67.0	1.6
MW-176	MW-176-201910	10/22/2019	317	28.8	16.5
MW-177	MW-177-GW-20150121	1/21/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-177	MW-177-201504	4/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-177	MW-177-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-177	MW-177-201601	1/11/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-177	MW-177-201605	5/2/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-178	MW-178-GW-20150118	1/18/2015	5.2	0.99 J	< 0.50 U
MW-178	MW-178-201504	4/16/2015	5.0	1.3	< 0.13 U
MW-178	MW-178-201507	7/22/2015	4.6	1.1	< 0.13 U
MW-178	MW-178-201510	10/7/2015	5.8	1.4	< 0.13 U
MW-178	MW-178-201611	11/10/2016	3.2	0.15 J	< 0.13 U
MW-178	MW-178-201704	4/27/2017	4.6	1.3	< 0.13 U
MW-178	MW-178-201710	10/25/2017	3.9	0.97 J	< 0.13 U
MW-178	FD-06-201710	10/25/2017	3.6	0.96 J	< 0.13 U
MW-178	MW-178-201804	4/18/2018	5.3	1.4	< 0.13 U
MW-178	MW-178-201811	11/14/2018	4.5	1.4	< 0.13 U
MW-178	MW-178-201904	4/24/2019	2.9	0.79 J	< 0.11 U
MW-178	MW-178-201910	10/23/2019	4.1	1.2	< 0.11 U
MW-179	MW-179-201504	4/16/2015	41.2	1.6	< 0.13
MW-179	MW-179-201507	7/22/2015	27.3	1.1	< 0.13 U
MW-179	MW-179-201601	1/13/2016	30.6	1.1	< 0.13 U
MW-179	MW-179-201605	5/4/2016	6.6	< 0.080 U	< 0.13 U
MW-179	MW-179-201704	4/28/2017	20.4	1.0	< 0.13 U
MW-179	MW-179-201710	10/26/2017	10.7	0.35 J	< 0.13 U
MW-179	MW-179-201804	4/19/2018	21.7	0.85 J	< 0.13 U
MW-179	MW-179-201811	11/13/2018	1.4	< 0.080 U	< 0.13 U
MW-179	MW-179-201904	4/24/2019	8.9	0.23 J	< 0.11 U
MW-179	MW-179-201910	10/24/2019	23.7	0.74 J	< 0.11 U
MW-180	MW-180-GW-20150119	1/19/2015	23.7	3.4	< 0.50 U
MW-180	MW-180-201504	4/16/2015	21.4	3.8	< 0.13
MW-180	MW-180-201507	7/22/2015	22.1	3.0	< 0.13 U
MW-180	MW-180-201510	10/7/2015	18.5	3.0	< 0.13 U
MW-180	MW-180-201601	1/14/2016	10.6	1.5	< 0.13 U
MW-180	MW-180-201605	5/5/2016	10.3	1.4	< 0.13 U
MW-181	MW-181-GW-20150121	1/21/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-181	MW-181-201504	4/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-181	MW-181-201507	7/21/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-181	MW-181-201601	1/11/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-181	MW-181-201605	5/4/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-182	MW-182-201507	7/23/2015	193	17.8	0.28 J
MW-182	MW-182-201510	10/5/2015	196	17.2	0.25 J
MW-182	MW-182-201601	1/13/2016	258	19.9	0.30 J
MW-182	MW-182-201605	5/4/2016	283	18.9	0.31 J
MW-182	DUP-09-201605	5/4/2016	271	16.6	0.32 J
MW-182	MW-182-201611	11/9/2016	192	14.6	0.28 J
MW-182	DUP-02-201611	11/9/2016	204	15.5	0.20 J
MW-182	MW-182-201710	10/24/2017	92.2	5.7	< 0.13 U
MW-182	MW-182-201804	4/19/2018	58.3	3.9	< 0.13 U
MW-182	DUP-06-201804	4/19/2018	59.3	4.1	< 0.13 U
MW-182	MW-182-201811	11/15/2018	40.8	2.5	< 0.13 U
MW-182	MW-182-201904	4/24/2019	29.1	1.8	< 0.11 U
MW-182	MW-182-201910	10/23/2019	26.3	1.8	< 0.11 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-183	MW-183-201510	10/6/2015	2.0	0.30 J	< 0.13 U
MW-183	MW-183-201601	1/12/2016	2.7	0.32 J	< 0.13 U
MW-183	MW-183-201605	5/4/2016	2.8	0.34 J	< 0.13 U
MW-183	MW-183-201611	11/9/2016	5.3	< 0.080 U	< 0.13 U
MW-183	MW-183-201704	4/26/2017	2.0	0.26 J	< 0.13 U
MW-183	DUP-03-201704	4/26/2017	1.9	0.17 J	< 0.13 U
MW-183	MW-183-201710	10/25/2017	2.8	0.24 J	< 0.13 U
MW-183	MW-183-201804	4/18/2018	1.9	0.14 J	< 0.13 U
MW-183R	MW-183R-201811	11/14/2018	1.1	< 0.080 U	< 0.13 U
MW-183R	MW-183R-201904	4/24/2019	0.54 J	< 0.17 U	< 0.11 U
MW-183R	MW-183R-201910	10/23/2019	1.2	< 0.17 U	< 0.11 U
MW-184	MW-184-201510	10/5/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-184	MW-184-201601	1/11/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-184	MW-184-201605	5/3/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-184	MW-184-201611	11/8/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-184	MW-184-201704	4/28/2017	0.45	< 0.080 U	< 0.13 U
MW-184	MW-184-201710	10/24/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-184	MW-184-201804	4/18/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-184	MW-184-201811	11/14/2018	< 0.17	< 0.080 U	< 0.13 U
MW-184	MW-184-201904	4/24/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-184	MW-184-201910	10/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-185	MW-185-GW-091615	9/16/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-185	MW-185-201510	10/5/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-185	MW-185-201601	1/11/2016	0.87 J	< 0.080 U	< 0.13 U
MW-185	MW-185-201605	5/4/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-185	MW-185-201611	11/8/2016	3.1	< 0.080 U	< 0.13 U
MW-185	MW-185-201704	4/26/2017	8.0	< 0.080 U	< 0.13 U
MW-185	MW-185-201710	10/24/2017	12.7	< 0.080 U	< 0.13 U
MW-185	MW-185-201804	4/19/2018	12.0	1.4	< 0.13 U
MW-185	DUP-07-201804	4/19/2018	11.1	1.4	< 0.13 U
MW-185	MW-185-201807	7/31/2018	11.7	1.4	< 0.13 U
MW-185	MW-185-201811	11/14/2018	11.7	2.6	< 0.13 U
MW-185	MW-185-201904	4/25/2019	17.0	3.4	< 0.11 U
MW-185	MW-185-201910	10/24/2019	52.7	6.3	0.12 J
MW-186	MW-186-GW-091415	9/14/2015	< 0.17 U	0.37 J	< 0.13 U
MW-186	MW-186-201510	10/5/2015	1.2	2.4	< 0.13 U
MW-186	MW-186-201601	1/7/2016	3.0	3.2	< 0.13 U
MW-186	MW-186-201605	5/4/2016	4.0	3.0	< 0.13 U
MW-186	MW-186-201611	11/7/2016	5.2	3.3	0.16 J
MW-186	MW-186-201704	4/26/2017	4.7	2.7	< 0.13 U
MW-186	DUP-02-201704	4/26/2017	5.0 B	2.8	< 0.13 U
MW-186	MW-186-201710	10/24/2017	7.8	4.1	0.14 J
MW-186	FD-04-201710	10/24/2017	7.8	3.8	0.16 J
MW-186	MW-186-20180402	4/2/2018	13.1	4.2	0.22 J
MW-186	DUP-01-20180402	4/2/2018	12.9	4.7	0.21 J
MW-186	MW-186-201804	4/19/2018	14.2	4.8	0.23 J
MW-186	MW-186-201807	8/3/2018	17.7	4.5	0.15 J
MW-186	MW-186-201811	11/14/2018	10.2 F1	6.5	< 0.13 U
MW-186	MW-186-201904	4/26/2019	5.6	8.8	0.14 J
MW-186	MW-186-201910	10/24/2019	2.9	3.0	2.2
MW-187	MW-187-GW-091415	9/14/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-187	MW-187-201510	10/5/2015	< 0.17 U	0.21 J	< 0.13 U
MW-187	MW-187-201601	1/8/2016	0.22 J	0.27 J	< 0.13 U
MW-187	MW-187-201605	5/4/2016	0.56 J	0.59 J	< 0.13 U
MW-187	MW-187-201611	11/9/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-187	MW-187-201704	4/26/2017	0.46 J	0.55 J	< 0.13 U
MW-187	MW-187-201710	10/24/2017	0.65 J	0.73 J	< 0.13 U
MW-187	MW-187-201804	4/18/2018	< 0.17 U	0.77 J	< 0.13 U
MW-187	MW-187-201811	11/14/2018	0.86 J	0.81 J	< 0.13 U
MW-187	MW-187-201904	4/24/2019	1.4	1.3	< 0.11 U
MW-187	MW-187-201910	10/22/2019	3.5	2.2	< 0.11 U
MW-188	MW-188A-GW-091715	9/17/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-188	MW-188-201510	10/5/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-188	MW-188-201601	1/8/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-188	MW-188-201605	5/3/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-188	MW-188-201611	11/9/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-188	MW-188-201704	4/27/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-188	MW-188-201710	10/24/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-188	MW-188-201804	4/19/2018	0.20 J	< 0.080 U	< 0.13 U
MW-188	DUP-04-201804	4/19/2018	0.18 J	< 0.080 U	< 0.13 U
MW-188	MW-188-201811	11/14/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-188	MW-188-201904	4/24/2019	0.88 J	0.33 J	< 0.11 U
MW-188	MW-188-201910	10/22/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-189	MW-189A-GW-091715	9/17/2015	2.4	3.1	< 0.13 U
MW-189	MW-189-201510	10/5/2015	4.1	4.5	0.14 J
MW-189	MW-189-201601	1/7/2016	4.5	5.4	0.19 J
MW-189	MW-189-201605	5/4/2016	5.5	6.1	0.19 J
MW-189	MW-189-201611	11/7/2016	10.2	9.7	0.31 J
MW-189	MW-189-201704	4/26/2017	30.1	11.1	0.29 J
MW-189	MW-189-201710	10/25/2017	195	9.5	0.40 J
MW-189	MW-189-201804	4/19/2018	385	11.1	0.48 J

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-189	MW-189-201811	11/15/2018	670	11.3	0.64 J
MW-189	MW-189-201904	4/25/2019	188	3.1	0.14 J
MW-189	MW-189-201910	10/24/2019	510	8.9	0.47 J
MW-189	DUP-08-201910	10/24/2019	506	8.7	0.50 J
MW-190	MW-190-GW-091415	9/14/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-190	MW-190-201510	10/5/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-190	MW-190-201601	1/11/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-190	MW-190-201605	5/4/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-190	MW-190-201611	11/8/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-190	MW-190-201704	4/26/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-190	MW-190-201710	10/25/2017	0.94 U	< 0.080 U	< 0.13 U
MW-190	MW-190-201804	4/18/2018	0.58 J	< 0.080 U	< 0.13 U
MW-190	MW-190-201811	11/15/2018	< 0.17	< 0.080 U	< 0.13 U
MW-190	MW-190-201904	4/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-190	MW-190-201910	10/22/2019	< 0.17 U	0.21 J	< 0.11 U
MW-191	MW-191-GW-091515	9/15/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-191	MW-191-201510	10/5/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-191	MW-191-201601	1/11/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-191	MW-191-201605	5/4/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-191	MW-191-201611	11/8/2016	< 0.17 U	< 0.080 U	< 0.13
MW-191	MW-191-201704	4/26/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-191	MW-191-201710	10/25/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-191	MW-191-201804	4/18/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-191	MW-191-201811	11/14/2018	< 0.17	< 0.080 U	< 0.13 U
MW-191	MW-191-201904	4/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-191	MW-191-201910	10/22/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-192	MW-192-GW-091615	9/16/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-192	MW-192-201510	10/5/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-192	MW-192-201601	1/11/2016	0.30 J	< 0.080 U	< 0.13 U
MW-192	MW-192-201605	5/4/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-192	MW-192-201611	11/9/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-192	MW-192-201704	4/26/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-192	MW-192-201710	10/25/2017	0.25 U	< 0.080 U	< 0.13 U
MW-192	MW-192-201804	4/18/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-192	DUP-07-201811	11/14/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-192	MW-192-201811	11/14/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-192	MW-192-201904	4/24/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-192	MW-192-201910	10/22/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-193	MW-193-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-193	MW-193-201601	1/11/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-193	MW-193-201605	5/2/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-194	MW-194-GW-080516	8/5/2016	6.6	0.66 J	< 0.13 U
MW-194	MW-194-201611	11/7/2016	12.7	< 0.080 U	< 0.13 U
MW-194	MW-194-201704	4/26/2017	10.8	< 0.080 U	< 0.13 U
MW-194	MW-194-201710	10/23/2017	15.4	1.1	< 0.13 U
MW-194	MW-194-201804	4/17/2018	9.4	0.57 J	< 0.13 U
MW-194	MW-194-201807	7/31/2018	13.3	0.79 J	< 0.13 U
MW-194	MW-194-201811	11/14/2018	10.7	0.87 J	< 0.13 U
MW-194	MW-194-201904	4/25/2019	8.6	0.75 J	< 0.11 U
MW-194	MW-194-201910	10/23/2019	10.8	0.97 J	< 0.11 U
MW-195	MW-195-GW-080516	8/5/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-195	MW-195-201611	11/9/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-195	MW-195-201704	4/28/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-195	MW-195-201710	10/23/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-195	MW-195-201804	4/17/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-195	DUP-02-201804	4/17/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-195	MW-195-201811	11/13/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-195	MW-195-201904	4/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-195	MW-195-201910	10/22/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-196	MW-196-GW-080516	8/5/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-196	MW-196-201611	11/9/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-196	MW-196-201704	4/26/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-196	MW-196-201710	10/24/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-196	MW-196-201804	4/17/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-196	MW-196-201811	11/13/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-196	MW-196-201904	4/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-196	MW-196-201910	10/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-22	MW-22-19961201	12/1/1996	< ND		< ND
MW-22	MW-22-19970501	5/1/1997	< ND	5	< ND
MW-22	MW-22-19990201	2/1/1999	< ND	5	< ND
MW-22	MW-22-20000301	3/1/2000	< ND	< ND	< ND
MW-22	MW-22-20000919	9/19/2000	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20010327	3/27/2001	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20010913	9/13/2001	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20020910	9/10/2002	9	< 5 U	< 10 U
MW-22	MW-22-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20030923	9/23/2003	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20030923-FD	9/23/2003	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20040413	4/13/2004	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20040921	9/21/2004	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20050930	9/30/2005	< 5 U	< 5 U	< 10 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-22	MW-22-20061014	10/14/2006	< 5 U	< 5 U	< 10 UJ
MW-22	MW-22-20070920	9/20/2007	< 5 U	< 5 U	< 10 U
MW-22	MW-22-20081209	12/9/2008	< 5 U	< 5 U	< 5 U
MW-22	MW-22-20091027	10/27/2009	< 5 U	< 5 U	< 5 U
MW-22	MW-22-20101103	11/3/2010	< 5 U	< 5 U	< 5 U
MW-22	MW-22-20111027	10/27/2011	2.1 J	< 5 U	< 5 U
MW-22	MW-22-20120418	4/18/2012	< 5 U	< 5 U	< 5 U
MW-22	MW-22-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-22	MW-22-20130423	4/23/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-22	MW-22-101413	10/14/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-22	MW-22-201403	3/5/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-22	MW-22-201405	5/12/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-22	MW-22-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-22	MW-22-201410	10/15/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-22	MW-22-201501	1/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-22	MW-22-201504	4/13/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-22	MW-22-201507	7/22/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-22	MW-22-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-22	MW-22-201601	1/12/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-22	MW-22-201605	5/4/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-22	MW-22-201611	11/8/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-22	MW-22-201710	10/25/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-22	MW-22-201811	11/14/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-22	MW-22-201910	10/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-23	MW-23-19961201	12/1/1996	210		< ND
MW-23	MW-23-19970501	5/1/1997	2400		< ND
MW-23	MW-23-19990201	2/1/1999	350	10	< ND
MW-23	MW-23-19990201-FD	2/1/1999	440	10	< ND
MW-23	MW-23-20000301-FD	3/1/2000	147	< ND	< ND
MW-23	ITMW-23-20000921	9/21/2000	67	< 5 U	< 10 U
MW-23	ITMW-23-20010105	1/5/2001	137	< 5 U	< 10 U
MW-23	ITMW-23-20010326	3/26/2001	87	< 5 U	< 10 U
MW-23	ITMW-23-20010911	9/11/2001	23	< 5 U	< 10 U
MW-23	ITMW-23-20020911	9/11/2002	111	< 5 U	< 10 U
MW-23	MW-23-20020911-FD	9/11/2002	105	< 5 U	< 10 U
MW-23	ITMW-23-20030227	2/27/2003	54	< 5 U	< 10 U
MW-23	ITMW-23-20030925	9/25/2003	83.9	< 5 U	< 10 U
MW-23	ITMW-23-20040415	4/15/2004	70.3	< 5 U	< 10 U
MW-23	ITMW-23-20040922	9/22/2004	73.4	< 5 U	< 10 U
MW-23	ITMW-23-20050405	4/5/2005	55.5	< 5 U	< 10 U
MW-23	ITMW-23-20050929	9/29/2005	65.8	< 5 U	< 10 U
MW-23	ITMW-23-20060317	3/17/2006	47.1	< 5 U	< 10 U
MW-23	ITMW-23-20061014	10/14/2006	59	< 5 U	< 10 UJ
MW-23	ITMW-23-20070419	4/19/2007	39.9	9.79	< 10 U
MW-23	ITMW-23-20070919	9/19/2007	47	< 5 U	< 10 U
MW-23	ITMW-23-20080429	4/29/2008	29	< 5 U	< 10 U
MW-23	ITMW-23-20081210	12/10/2008	69	< 5 U	< 5 U
MW-23	ITMW-23-20090427	4/27/2009	32	< 5 U	< 5 U
MW-23	ITMW-23-20091029	10/29/2009	45	< 5 U	< 5 U
MW-23	MW-23-20100512-FD	5/12/2010	55	< 5 U	< 5 U
MW-23	ITMW-23-20100512	5/12/2010	52	< 5 U	< 5 U
MW-23	ITMW-23-20101105	11/5/2010	76	< 5 U	< 5 U
MW-23	ITMW-23-20110323	3/23/2011	46	< 5 U	< 5 U
MW-23	ITMW-23-20111027	10/27/2011	41	< 5 U	< 5 U
MW-23	ITMW-23-20120418	4/18/2012	36	< 5 U	< 5 U
MW-23	ITMW-23-20121019	10/19/2012	43	< 0.56 U	< 0.11 U
MW-23	ITMW-23-20130425	4/25/2013	20	< 0.56 U	< 0.11 U
MW-23	MW-23-101613	10/16/2013	54	< 0.56 U	< 0.11 U
MW-23	MW-23-20140522	5/22/2014	22.8	< 0.080 U	< 0.13 U
MW-23	20140708-GW-MW-23	7/8/2014	27.8	0.68 J	< 0.50 U
MW-23	MW-23-201409	9/12/2014	62.1	1.8 J	< 0.50 U
MW-23	MW-23-20141023	10/23/2014	189	3.5 J	< 0.50 U
MW-23	MW-23-201501	1/15/2015	115	2.2	< 0.50 U
MW-23	MW-23-201504	4/14/2015	57.5	1.1	< 0.50 U
MW-23	MW-23-201507	7/23/2015	37.8	0.95 J	< 0.13 U
MW-23	MW-23-201510	10/8/2015	0.65 J	< 0.080 U	< 0.13 U
MW-23	MW-23-201511	11/5/2015	0.40 J	< 0.080 U	< 0.13 U
MW-23	MW-23-201512	12/1/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-23	MW-23-201601	1/7/2016	0.48 J	< 0.080 U	< 0.13 U
MW-23	MW-23-201605	5/5/2016	0.90 J	< 0.080 U	< 0.13 U
MW-24	MW-24-19990201	2/1/1999	1400	49	< ND
MW-24	MW-24-20000301	3/1/2000	403	25	< ND
MW-24	MW-24-20000301-FD	3/1/2000	595	24	< ND
MW-24	MW-24-20000921	9/21/2000	128	11	< 10 U
MW-24	MW-24-20010105	1/5/2001	247	12	< 10 U
MW-24	MW-24-20010326	3/26/2001	330	11	< 10 U
MW-24	MW-24-20010911	9/11/2001	124	6	< 10 U
MW-24	MW-24-20020911	9/11/2002	199	6	< 10 U
MW-24	MW-24-20030227	2/27/2003	253	7.01	< 10 U
MW-24	MW-24-20030925	9/25/2003	155	< 5 U	< 10 U
MW-24	MW-24-20040415	4/15/2004	181	5.12	< 10 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-24	MW-24-20040923	9/23/2004	116	< 5 U	< 10 U
MW-24	MW-24-20050406	4/6/2005	152	6.04	< 10 U
MW-24	MW-24-20050929	9/29/2005	161	< 5 U	< 10 U
MW-24	MW-24-20060316	3/16/2006	347	7.57	< 10 U
MW-24	MW-24-20061014	10/14/2006	620	11	2 J
MW-24	MW-24-20070419	4/19/2007	196	11.6	< 10 U
MW-24	MW-24-20070920	9/20/2007	140	< 5 U	< 10 U
MW-24	MW-24-20070920-FD	9/20/2007	150	< 5 U	< 10 U
MW-24	MW-24-20080429	4/29/2008	150	3 J	< 10 U
MW-24	MW-24-20081210	12/10/2008	150	3.4 J	< 5 U
MW-24	MW-24-20081210-FD	12/10/2008	130	3.4 J	< 5 U
MW-24	MW-24-20090427	4/27/2009	120	< 5 U	< 5 U
MW-24	MW-24-20091029	10/29/2009	110	2.6 J	< 5 U
MW-24	MW-24-20100512	5/12/2010	150	4.3 J	< 5 U
MW-24	MW-24-20110323	3/23/2011	170	3.6 J	< 5 U
MW-24	MW-24-20111027	10/27/2011	170	1.9 J	< 5 U
MW-24	MW-24-20111027-FD	10/27/2011	170	1.4 J	< 5 U
MW-24	MW-24-20120418	4/18/2012	150	2.9 J	< 5 U
MW-24	MW-24-20121019	10/19/2012	190	3.7 J	< 0.11 U
MW-24	MW-24-20130425	4/25/2013	110	3.5 J	0.23 J
MW-24	MW-24-20140522	5/22/2014	79.7	1.2 J	< 0.13 U
MW-24	20140708-GW-MW-24	7/8/2014	102	1.4 J	< 0.50 U
MW-24	MW-24-201409	9/12/2014	55.7	0.66 J	< 0.50 U
MW-24	MW-24-20141023	10/23/2014	33.1	< 0.50 U	< 0.50 U
MW-24	MW-24-201501	1/15/2015	26.9	< 0.50 U	< 0.50 U
MW-24	MW-24-201504	4/16/2015	18.8	< 0.080 U	< 0.13 U
MW-24	MW-24-201507	7/23/2015	178	3.1	< 0.13 U
MW-24	MW-24-201510	10/8/2015	44.1	0.83 J	< 0.13 U
MW-24	MW-24-201511	11/5/2015	75.8	0.20 J	< 0.13 U
MW-24	MW-24-201512	12/2/2015	84.1	0.59 J	< 0.13 U
MW-24	MW-24-201601	1/7/2016	49.3	0.48 J	< 0.13 U
MW-24	MW-24-201605	5/4/2016	23.8 J	0.27 J	< 0.13 U
MW-24	MW-24-201611	11/8/2016	4.2	< 0.080 U	< 0.13 U
MW-24	MW-24-201710	10/25/2017	20.9	< 0.080 U	< 0.13 U
MW-24	DUP-02-201811	11/15/2018	12.5	< 0.080 U	< 0.13 U
MW-24	MW-24-201811	11/15/2018	12.6	< 0.080 U	< 0.13 U
MW-24	MW-24-2019110	10/23/2019	19.0	0.24 J	< 0.11 U
MW-25	MW-25-19990201	2/1/1999	29000	170	100
MW-25	MW-25-19990201-FD	2/1/1999	27000	180	110
MW-25	MW-25-19991201	12/1/1999	94500	< ND	< ND
MW-25	MW-25-20000301	3/1/2000	35900	245	63
MW-25	MW-25-20000921	9/21/2000	59000	300	50
MW-25	MW-25-20010328	3/28/2001	34000	117	60
MW-25	MW-25-20010913	9/13/2001	60000	300	< 200 U
MW-25	MW-25L-20020909	9/9/2002	157000	440	180
MW-25	MW-25T-20020909	9/9/2002	56000	370	200
MW-25	MW-25-20030226	2/26/2003	45900	557	75.7
MW-25	MW-25-20030717	7/17/2003	62200	621	243
MW-25	MW-25-20030924	9/24/2003	103000	775	< 500 U
MW-25	MW-25-20040414	4/14/2004	25600	255	31.8
MW-25	MW-25-20040921	9/21/2004	85200	819	422
MW-25	MW-25-20050407	4/7/2005	21100	353	61.1
MW-25	MW-25-20050928	9/28/2005	136000	837	< 500 U
MW-25	MW-25-20060315	3/15/2006	36300	774	< 200 U
MW-25	MW-25-20061012	10/12/2006	64000	1300	610
MW-25	MW-25-20061012-FD	10/12/2006	65000	1400	600
MW-25	MW-25-20070418	4/18/2007	19000	321	20
MW-25	MW-25-20070418-FD	4/18/2007	18000	319	20
MW-25	MW-25-20070921	9/21/2007	54000	1200	800
MW-25	MW-25-20070921-FD	9/21/2007	55000	1200	780
MW-25	MW-25-20080429	4/29/2008	23000	470	10 J
MW-25	MW-25-20080429-FD	4/29/2008	25000	510	10 J
MW-25	MW-25-20081210	12/10/2008	100000	1200	430
MW-25	MW-25-20090427	4/27/2009	36000	2100	140
MW-25	MW-25-20090427-FD	4/27/2009	39000	2000	190
MW-25	MW-25-20091027	10/27/2009	140000	1500	570
MW-25	MW-25-20100511	5/11/2010	81000	1400	11
MW-25	MW-25-20101104	11/4/2010	270000	1500	400
MW-25	MW-25-20110322	3/22/2011	57000	2400	34
MW-25	MW-25-20111026	10/26/2011	120000	2100	< 250 U
MW-25	MW-25-20120417	4/17/2012	18000	690	18
MW-25	MW-25-20121019	10/19/2012	56000	4200	1500
MW-25	MW-25-20121019-FD	10/19/2012	49000	3600	1500
MW-25	MW-25-20130425	4/25/2013	9100	330	7.9
MW-25	MW-25-20130425-FD	4/25/2013	9500	380	11
MW-25	MW-25-101813	10/18/2013	43000	2900	1300
MW-25	MW-25-201403	3/8/2014	14500	625	33.6 J
MW-25	MW-25-201405	5/15/2014	18500	600 J	30.3
MW-25	20140709-GW-MW-25	7/9/2014	49900	1750	< 0.50 U
MW-25	MW-25-201407	7/31/2014	71700	2310 J	< 0.50 U
MW-25	MW-25-201410	10/16/2014	42500	2870 J	540 J

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-25	MW-25-20141024	10/24/2014	59800	2650 J	0.66 J
MW-25	MW-25-20141205	12/5/2014	2620 J	31.5	2.1
MW-25	MW-25-201501	1/15/2015	2510	126	1.6
MW-25	MW-25-201504	4/16/2015	4650	204	6.4
MW-25	MW-25-201507	7/23/2015	39800	580 J	66.4
MW-25	MW-25-201510	10/8/2015	68700	957 J	< 0.13 U
MW-25	MW-25-201601	1/13/2016	43400	608 J	55.0
MW-25	MW-25-201605	5/5/2016	53000	83.6	< 0.13 U
MW-25	MW-25-201611	11/9/2016	36900	509 J	< 0.13 U
MW-25	MW-25-201710	10/26/2017	97400	22900	< 0.13 U
MW-25	FD-08-201710	10/26/2017	95900	20900	< 0.13 U
MW-25	MW-25-201811	11/16/2018	94300	18200	762 J
MW-25R	MW-25R-201910	10/25/2019	5410	1880	113
MW-26	MW-26-19990201	2/1/1999	360	150	< ND
MW-26	MW-26-19990601	6/1/1999	< ND	< ND	< ND
MW-26	MW-26-20000301	3/1/2000	< ND	< ND	< ND
MW-26	MW-26-20000921	9/21/2000	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20010326	3/26/2001	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20010911	9/11/2001	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20010911-FD	9/11/2001	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20020910	9/10/2002	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20030924	9/24/2003	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20040414	4/14/2004	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20040922	9/22/2004	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20050929	9/29/2005	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20061012	10/12/2006	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-26	MW-26-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-26	MW-26-20091029	10/29/2009	< 5 U	< 5 U	< 5 U
MW-26	MW-26-20100512	5/12/2010	< 5 U	< 5 U	< 5 U
MW-26	MW-26-20101105	11/5/2010	22	< 5 U	< 5 U
MW-26	MW-26-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
MW-26	MW-26-20120418	4/18/2012	< 5 U	< 5 U	< 5 U
MW-26	MW-26-20121018	10/18/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-26	MW-26-20130423	4/23/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-26	MW-26-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-26	MW-26-201403	3/5/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-26	MW-26-201405	5/12/2014	0.25 J	< 0.080 U	< 0.13 U
MW-26	MW-26-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-26	MW-26-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-26	MW-26-201501	1/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-26	MW-26-201504	4/13/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-26	MW-26-201507	7/22/2015	0.18 J	< 0.080 U	< 0.13 U
MW-26	MW-26-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-26	MW-26-201601	1/13/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-26	MW-26-201605	5/2/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-26	MW-26-201611	11/9/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-26	MW-26-201704	4/28/2017	0.28 J	< 0.080 U	< 0.13 U
MW-26	MW-26-201710	10/25/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-26	MW-26-201804	4/18/2018	1.0	< 0.080 U	< 0.13 U
MW-26	MW-26-201811	11/14/2018	< 0.17	< 0.080 U	< 0.13 U
MW-26	DUP-09-201811	11/14/2018	0.46 J	< 0.080 U	< 0.13 U
MW-26	MW-26-201904	4/24/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-26	MW-26-201910	10/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-27	MW-27-19991201	12/1/1999	< ND	< ND	< ND
MW-27	MW-27-19991207	12/7/1999	< 5 U	< 5 U	< 10 U
MW-27	MW-27-19991209	12/9/1999	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20000301	3/1/2000	< ND	< ND	< ND
MW-27	MW-27-20000921	9/21/2000	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20010105	1/5/2001	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20010105-FD	1/5/2001	5.55	< 5 U	< 10 U
MW-27	MW-27-20010326	3/26/2001	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20010911	9/11/2001	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20020911	9/11/2002	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20020911-FD	9/11/2002	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20030925	9/25/2003	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20040415	4/15/2004	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20040922	9/22/2004	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20050929	9/29/2005	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20061014	10/14/2006	2 J	< 5 U	< 10 U
MW-27	MW-27-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-27	MW-27-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-27	MW-27-20100512	5/12/2010	3.1 J	< 5 U	< 5 U
MW-27	MW-27-20101105	11/5/2010	42	< 5 U	< 5 U
MW-27	MW-27-20111027	10/27/2011	< 5 U	< 5 U	< 5 U
MW-27	MW-27-20120418	4/18/2012	2.6 J	< 5 U	< 5 U
MW-27	MW-27-20121018	10/18/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-27	MW-27-20130424	4/24/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-27	MW-27-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-27	MW-27-201403	3/7/2014	0.31 J	< 0.080 U	< 0.13 U
MW-27	MW-27-201405	5/13/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-27	MW-27-201407	7/30/2014	0.63 J	< 0.50 U	< 0.50 U
MW-27	MW-27-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-27	MW-27-201501	1/14/2015	0.84 J	0.59 J	< 0.50 U
MW-27	MW-27-201504	4/13/2015	0.59 J	< 0.080 U	< 0.13 U
MW-27	MW-27-201507	7/22/2015	0.18 J	< 0.080 U	< 0.13 U
MW-27	MW-27-201510	10/7/2015	0.55 J	0.33 J	< 0.13 U
MW-27	MW-27-201601	1/12/2016	0.61 J	0.42 J	< 0.13 U
MW-27	MW-27-201605	5/4/2016	0.35 J	0.18 J	< 0.13 U
MW-27	MW-27-201611	11/9/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-27	MW-27-201710	10/25/2017	0.41 U	< 0.080 U	< 0.13 U
MW-27	MW-27-201811	11/13/2018	0.92 J	0.27 J	< 0.13 U
MW-27	MW-27-201910	10/24/2019	1.9	0.40 J	< 0.11 U
MW-28	MW-28-19991201	12/1/1999	< ND	< ND	< ND
MW-28	MW-28-19991209	12/9/1999	< 5 U	< 5 U	< 10 U
MW-28	MW-28-19991209-FD	12/9/1999	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20000301	3/1/2000	< ND	< ND	< ND
MW-28	MW-28-20000921	9/21/2000	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20010327	3/27/2001	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20010327-FD	3/27/2001	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20010911	9/11/2001	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20020911	9/11/2002	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20030925	9/25/2003	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20040415	4/15/2004	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20040922	9/22/2004	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20061014	10/14/2006	< 5 U	< 5 U	< 10 UJ
MW-28	MW-28-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-28	MW-28-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-28	MW-28-20091029	10/29/2009	< 5 U	< 5 U	< 5 U
MW-28	MW-28-20100512	5/12/2010	2.6 J	< 5 U	< 5 U
MW-28	MW-28-20101105	11/5/2010	54	< 5 U	< 5 U
MW-28	MW-28-20110323	3/23/2011	1.6 J	< 5 U	< 5 U
MW-28	MW-28-20111027	10/27/2011	< 5 U	< 5 U	< 5 U
MW-28	MW-28-20120419	4/19/2012	< 5 U	< 5 U	< 5 U
MW-28	MW-28-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-28	MW-28-20130424	4/24/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-28	MW-28-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-28	MW-28-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-28	MW-28-201405	5/13/2014	0.30 J	< 0.080 U	< 0.13 U
MW-28	MW-28-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-28	MW-28-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-28	MW-28-201501	1/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-28	MW-28-201504	4/13/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-28	MW-28-201507	7/22/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-28	MW-28-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-28	MW-28-201601	1/12/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-28	MW-28-201605	5/4/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-28	MW-28-201611	11/9/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-28	MW-28-201710	10/25/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-28	MW-28-201811	11/13/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-28	MW-28-201910	10/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-29	MW-29-19991201	12/1/1999	< ND	< ND	< ND
MW-29	MW-29-19991209	12/9/1999	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20000301	3/1/2000	< ND	< ND	< ND
MW-29	MW-29-20000920	9/20/2000	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20010327	3/27/2001	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20010911	9/11/2001	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20020910	9/10/2002	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20030227	2/27/2003	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20030924	9/24/2003	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20040414	4/14/2004	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20040922	9/22/2004	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20050928	9/28/2005	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20061012	10/12/2006	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-29	MW-29-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-29	MW-29-20081210-FD	12/10/2008	< 5 U	< 5 U	< 5 U
MW-29	MW-29-20091029	10/29/2009	< 5 U	< 5 U	< 5 U
MW-29	MW-29-20111025	10/25/2011	< 5 U	< 5 U	< 5 U
MW-29	MW-29-20120418	4/18/2012	< 5 U	< 5 U	< 5 U
MW-29	MW-29-20121018	10/18/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-29	MW-29-20130423	4/23/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-29	MW-29-101413	10/14/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-29	MW-29-201403	3/5/2014	0.52 J	< 0.080 U	< 0.13 U
MW-29	MW-29-201405	5/13/2014	0.18 J	< 0.080 U	< 0.13 U
MW-29	MW-29-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-29	MW-29-201410	10/15/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-29	MW-29-201501	1/13/2015	< 0.50 U	< 0.50 U	< 0.50 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-29	MW-29-201504	4/14/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-29	MW-29-201507	7/22/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-29	MW-29-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-29	MW-29-201601	1/13/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-29	MW-29-201605	5/3/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-29	MW-29-201611	11/9/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-29	MW-29-201704	4/27/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-29	MW-29-201710	10/25/2017	0.19 U	0.16 J	< 0.13 U
MW-29	MW-29-201804	4/19/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-29	MW-29-201811	11/15/2018	< 0.17	< 0.080 U	< 0.13 U
MW-29	MW-29-201904	4/24/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-29	MW-29-201910	10/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-30	MW-30-19991201	12/1/1999	115	34	< ND
MW-30	MW-30-19991209	12/9/1999	115	34	< 10 U
MW-30	MW-30-20000301	3/1/2000	86	25	< ND
MW-30	MW-30-20000920	9/20/2000	102	25	< 10 U
MW-30	MW-30-20010327	3/27/2001	43	11	< 10 U
MW-30	MW-30-20010911	9/11/2001	63	18	< 10 U
MW-30	MW-30-20020910	9/10/2002	48	14	< 10 U
MW-30	MW-30-20030227	2/27/2003	60	20.3	< 10 U
MW-30	MW-30-20030924	9/24/2003	46.8	13.7	< 10 U
MW-30	MW-30-20040414	4/14/2004	36.6	11.8	< 10 U
MW-30	MW-30-20040922	9/22/2004	36.2	12.1	< 10 U
MW-30	MW-30-20050928	9/28/2005	59.6	15.6	< 10 U
MW-30	MW-30-20061012	10/12/2006	53	15	< 10 U
MW-30	MW-30-20070920	9/20/2007	39	11	< 10 U
MW-30	MW-30-20081210	12/10/2008	37	11	< 5 U
MW-30	MW-30-20101103	11/3/2010	50	15	< 5 U
MW-30	MW-30-20111026	10/26/2011	57	16	< 5 U
MW-30	MW-30-20120418	4/18/2012	150	32	< 5 U
MW-30	MW-30-20121018	10/18/2012	65	19	< 0.11 U
MW-30	MW-30-20130425	4/25/2013	49	18	0.49 J
MW-30	MW-30-101413	10/14/2013	40	16	< 0.11 U
MW-31	MW-31-20010105	1/5/2001	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20010326	3/26/2001	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20010913	9/13/2001	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20020911	9/11/2002	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20030228	2/28/2003	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20030925	9/25/2003	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20040415	4/15/2004	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20040923	9/23/2004	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20050405	4/5/2005	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20050927	9/27/2005	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20060315	3/15/2006	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20061011	10/11/2006	3 J	< 5 U	< 10 U
MW-31	MW-31-20070419	4/19/2007	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20070918	9/18/2007	< 5 U	< 5 U	< 10 U
MW-31	MW-31-20080430	4/30/2008	2 J	< 5 U	< 10 U
MW-31	MW-31-20081211	12/11/2008	< 5 U	< 5 U	< 5 U
MW-31	MW-31-20090425	4/25/2009	< 5 U	< 5 U	< 5 U
MW-31	MW-31-20100512	5/12/2010	< 5 U	< 5 U	< 5 U
MW-31	MW-31-20101107	11/7/2010	48	< 5 U	< 5 U
MW-31	MW-31-20110323	3/23/2011	< 5 U	< 5 U	< 5 U
MW-31	MW-31-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
MW-31	MW-31-20121019	10/19/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-31	MW-31-101813	10/18/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-31	MW-31-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-31	MW-31-201405	5/13/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-31	DUP-1-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-31	MW-31-201407	7/30/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-31	MW-31-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-31	MW-31-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-31R	MW-31R-GW-20150119	1/19/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-31R	MW-31R-201504	4/14/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-31R	MW-31R-201507	7/21/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-31R	MW-31R-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-31R	MW-31R-201601	1/12/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-31R	MW-31R-201604	4/18/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-32	MW-32-20010105	1/5/2001	108	< 5 U	< 10 U
MW-32	MW-32-20010327	3/27/2001	174	< 5 U	< 10 U
MW-32	MW-32-20010913	9/13/2001	95	< 5 U	< 10 U
MW-32	MW-32-20020911	9/11/2002	109	< 5 U	< 10 U
MW-32	MW-32-20030228	2/28/2003	133	< 5 U	< 10 U
MW-32	MW-32-20030925	9/25/2003	32.3	< 5 U	< 10 U
MW-32	MW-32-20040415	4/15/2004	76.9	< 5 U	< 10 U
MW-32	MW-32-20040923	9/23/2004	51.4	< 5 U	< 10 U
MW-32	MW-32-20050405	4/5/2005	158	< 5 U	< 10 U
MW-32	MW-32-20050927	9/27/2005	97.6	< 5 U	< 10 U
MW-32	MW-32-20060315	3/15/2006	111	< 5 U	< 10 U
MW-32	MW-32-20061012	10/12/2006	85	4 J	< 10 U
MW-32	MW-32-20070419	4/19/2007	66.3	10.1	< 10 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-32	MW-32-20070918	9/18/2007	78	< 5 U	< 10 U
MW-32	MW-32-20080430	4/30/2008	70	2 J	< 10 U
MW-32	MW-32-20081211	12/11/2008	60	< 5 U	< 5 U
MW-32	MW-32-20090425	4/25/2009	47	< 5 U	< 5 U
MW-32	MW-32-20091028	10/28/2009	68	1.8 J	< 5 U
MW-32	MW-32-20100512	5/12/2010	58	< 5 U	< 5 U
MW-32	MW-32-20101106	11/6/2010	120	< 5 U	< 5 U
MW-32	MW-32-20110324	3/24/2011	66	1.4 J	< 5 U
MW-32	MW-32-20111026	10/26/2011	73	< 5 U	< 5 U
MW-32	MW-32-20121019	10/19/2012	61	1.2 J	< 0.11 U
MW-32	MW-32-101813	10/18/2013	48	1.4 J	< 0.11 U
MW-32	MW-32-201403	3/8/2014	36.8	1.1 J	< 0.13 U
MW-32	MW-32-201405	5/13/2014	33.1	0.19 J	< 0.13 U
MW-32	MW-32-201407	7/29/2014	37.2	1.0 J	< 0.50 U
MW-32	MW-32-201410	10/14/2014	29.7	0.80 J	< 0.50 U
MW-32	MW-32-201501	1/14/2015	20.2	0.55 J	< 0.50 U
MW-32R	MW-32R-GW-20150119	1/19/2015	12.9	< 0.50 U	< 0.50 U
MW-32R	MW-32R-201504	4/15/2015	11.2	< 0.080 U	< 0.13 U
MW-32R	MW-32R-201507	7/21/2015	7.4	0.29 J	< 0.13 U
MW-32R	MW-32R-201510	10/7/2015	8.2	0.37 J	< 0.13 U
MW-32R	MW-32R-201601	1/12/2016	13.1	0.45 J	< 0.13 U
MW-32R	MW-32R-201604	4/18/2016	8.8	< 0.080 U	< 0.13 U
MW-33	MW-33-20010105	1/5/2001	120	< 5 U	< 10 U
MW-33	MW-33-20010327	3/27/2001	260	7	< 10 U
MW-33	MW-33-20010913	9/13/2001	310	8	< 10 U
MW-33	MW-33-20020911	9/11/2002	450	8	< 10 U
MW-33	MW-33-20030228	2/28/2003	274	6.62	< 10 U
MW-33	MW-33-20030925	9/25/2003	198	5.95	< 10 U
MW-33	MW-33-20040415	4/15/2004	871	21.3	< 10 U
MW-33	MW-33-20040923	9/23/2004	798	15.3	< 10 U
MW-33	MW-33-20050405	4/5/2005	1430	24.5	< 10 U
MW-33	MW-33-20050927	9/27/2005	1030	15.2	< 10 U
MW-33	MW-33-20060315	3/15/2006	1610	20.5	< 10 U
MW-33	MW-33-20061012	10/12/2006	1300	19	< 10 U
MW-33	MW-33-20070419	4/19/2007	1430	9.2 J	< 50 U
MW-33	MW-33-20070918	9/18/2007	1700	25	< 10 U
MW-33	MW-33-20080430	4/30/2008	1100	16	< 10 U
MW-33	MW-33-20081211	12/11/2008	1200	18	< 5 U
MW-33	MW-33-20090425	4/25/2009	1200	19	< 5 U
MW-33	MW-33-20090527	5/27/2009	1000	19	< 5 U
MW-33	MW-33-20091028	10/28/2009	1200	20	< 5 U
MW-33	MW-33-20100512	5/12/2010	1100	21	< 5 U
MW-33	MW-33-20101106	11/6/2010	1200	17	< 5 U
MW-33	MW-33-20110304-FS	3/4/2011	500	14	< 0.85 U
MW-33	MW-33-20110523-FS	5/23/2011	1300	18	
MW-33	MW-33-20111026	10/26/2011	1000	16	< 5 U
MW-33	MW-33-20121019	10/19/2012	1300	18	0.56 J
MW-33	MW-33-101813	10/18/2013	1100	19	< 0.11 U
MW-33	MW-33-201403	3/8/2014	918	15.9	0.56 J
MW-33	MW-33-201405	5/14/2014	954	15.1	0.56 J
MW-33	MW-33-201407	7/29/2014	1600	20.8	0.59 J
MW-33	MW-33-201410	10/15/2014	1290	15.3	< 0.50 U
MW-33	MW-33-201501	1/14/2015	1080	13.9	< 0.50 U
MW-33R	MW-33R-GW-20150118	1/18/2015	799	9.9	< 0.50 U
MW-33R	MW-33R-201504	4/15/2015	570	12.2	0.37 J
MW-33R	DUP-01-201504	4/15/2015	624	10.5	< 0.13 U
MW-33R	MW-33R-201507	7/22/2015	488	6.8	< 0.13 U
MW-33R	DUP-04-201507	7/22/2015	447	6.1	< 0.13 U
MW-33R	MW-33R-201510	10/8/2015	562	6.1	0.31 J
MW-33R	DUP-05-201510	10/8/2015	460	6.3	0.28 J
MW-33R	MW-33R-201511	11/5/2015	752	8.0	0.39 J
MW-33R	MW-33R-201512	12/2/2015	675	6.5	0.30 J
MW-33R	MW-33R-201601	1/8/2016	724	7.6	< 0.13 U
MW-33R	MW-33R-201604	4/18/2016	776	6.7	0.23 J
MW-34	MW-34-20010328	3/28/2001	83	< 5 U	< 10 U
MW-34	MW-34-20010913	9/13/2001	61	< 5 U	< 10 U
MW-34	MW-34L-20020909	9/9/2002	84	< 5 U	< 10 U
MW-34	MW-34-20030228	2/28/2003	< 5 U	< 5 U	< 10 U
MW-34	MW-34-20030925	9/25/2003	28.4	< 5 U	< 10 U
MW-34	MW-34-20031114	11/14/2003	121	< 5 U	< 10 U
MW-34	MW-34-20040415	4/15/2004	119	< 5 U	< 10 U
MW-34	MW-34-20040923	9/23/2004	81.1	< 5 U	< 10 U
MW-34	MW-34-20041209	12/9/2004	93.3	< 5 U	< 10 U
MW-34	MW-34-20050405	4/5/2005	65.8	< 5 U	< 10 U
MW-34	MW-34-20050930	9/30/2005	83.7	< 5 U	< 10 U
MW-34	MW-34-20060314	3/14/2006	77.1	< 5 U	< 10 U
MW-34	MW-34-20061011	10/11/2006	63	4 J	< 10 U
MW-34	MW-34-20070418	4/18/2007	41	9.79	< 10 U
MW-34	MW-34-20070919	9/19/2007	61	< 5 U	< 10 U
MW-34	MW-34-20080430	4/30/2008	32	< 5 U	< 10 U
MW-34	MW-34-20081210	12/10/2008	53	< 5 U	< 5 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-34	MW-34-20090424	4/24/2009	43	< 5 U	< 5 U
MW-34	MW-34-20090527	5/27/2009	12	< 5 U	< 5 U
MW-34	MW-34-20091028	10/28/2009	34	< 5 U	< 5 U
MW-34	MW-34-20100512	5/12/2010	38	< 5 U	< 5 U
MW-34	MW-34-20101107-FD	11/7/2010	70	< 5 U	< 5 U
MW-34	MW-34-20101107	11/7/2010	73	< 5 U	< 5 U
MW-34	MW-34-20110324-FD	3/24/2011	40	< 5 U	< 5 U
MW-34	MW-34-20110324	3/24/2011	42	< 5 U	< 5 U
MW-34	MW-34-20111026	10/26/2011	56	< 5 U	< 5 U
MW-34	MW-34-20121020	10/20/2012	90	1.6 J	< 0.11 U
MW-34	MW-34-101713	10/17/2013	43	0.90 J	< 0.11 U
MW-34	MW-34-201403	3/8/2014	28.7	0.61 J	< 0.13 U
MW-34	MW-34-201405	5/13/2014	19.9	< 0.080 U	< 0.13 U
MW-34	MW-34-201407	7/29/2014	78.2	1.7 J	< 0.50 U
MW-34	MW-34-201410	10/15/2014	47.7	0.96 J	< 0.50 U
MW-34	MW-34-201501	1/13/2015	22.0	< 0.50 U	< 0.50 U
MW-34	MW-34-201504	4/14/2015	13.8	< 0.080 U	< 0.13 U
MW-34R	MW-34R-201507	7/21/2015	3.5	< 0.080 U	< 0.13 U
MW-34R	MW-34R-201510	10/8/2015	4.5	0.16 J	< 0.13 U
MW-34R	MW-34R-201601	1/11/2016	2.6	0.30 J	< 0.13 U
MW-34R	MW-34R-201605	5/3/2016	2.5	0.56 J	< 0.13 U
MW-35R	MW-35R-20010328	3/28/2001	960	34	< 10 U
MW-35R	MW-35R-20010913	9/13/2001	1030	40	< 20 U
MW-35R	MW-35L-20020909	9/9/2002	900	31	< 10 U
MW-35R	MW-35R-20030228	2/28/2003	246	15.1	< 10 U
MW-35R	MW-35R-20030925	9/25/2003	297	19.8	< 10 U
MW-35R	MW-35R-20031114	11/14/2003	990	34.9	< 10 U
MW-35R	MW-35R-20040415	4/15/2004	1150	45.8	< 10 U
MW-35R	MW-35R-20040923	9/23/2004	685	28.4	< 10 U
MW-35R	MW-35R-20041209	12/9/2004	880	42	< 10 U
MW-35R	MW-35R-20050406	4/6/2005	886	35	< 10 U
MW-35R	MW-35R-20050930	9/30/2005	804	29.3	< 10 U
MW-35R	MW-35R-20060314	3/14/2006	858	24.2	< 10 U
MW-35R	MW-35R-20060406	4/6/2006	1540	52.5	< 10 U
MW-35R	MW-35R-20061011	10/11/2006	910	29	< 10 U
MW-35R	MW-35R-20070418	4/18/2007	900	27.6	< 10 U
MW-35R	MW-35R-20070919	9/19/2007	1100	28	< 10 U
MW-35R	MW-35R-20080430	4/30/2008	1100	33	< 10 U
MW-35R	MW-35R-20081211	12/11/2008	790	27	< 5 U
MW-35R	MW-35R-20090424	4/24/2009	1100	37	< 5 U
MW-35R	MW-35R-20090507	5/7/2009	< 5 U	< 5 U	< 5 U
MW-35R	MW-35R-20090527	5/27/2009	< 5 U	< 5 U	< 5 U
MW-35R	MW-35R-20101105	11/5/2010	240	9.9	< 5 U
MW-35R	MW-35R-20110304-FS	3/4/2011	180	8.4	< 0.85 U
MW-35R	MW-35R-20110523-FS	5/23/2011	260	13	
MW-35R	MW-35R-20111025	10/25/2011	280	12	< 5 U
MW-35R	MW-35R-20121020	10/20/2012	280	10	< 0.11 U
MW-35R	MW-35R-101713	10/17/2013	200	12	< 0.11 U
MW-35R	MW-35R-20131017-FD	10/17/2013	220	13	
MW-35R	MW-35R-201403	3/8/2014	345	14.9	< 0.13 U
MW-35R	MW-35R-201405	5/13/2014	183	6.1	< 0.13 U
MW-35R	MW-35R-201407	7/30/2014	64.7	2.8 J	< 0.50 U
MW-35R	MW-35R-201410	10/14/2014	79.2	2.6 J	< 0.50 U
MW-35R	MW-35R-201501	1/13/2015	10.9	< 0.50 U	< 0.50 U
MW-35R	MW-35R-201504	4/14/2015	39.5	1.3	< 0.13 U
MW-35R	MW-35R-201507	7/21/2015	33.7	1.0	< 0.13 U
MW-35R	MW-35R-201510	10/7/2015	15.4	0.58 J	< 0.13 U
MW-35R	MW-35R-201511	11/4/2015	23.6	0.36 J	< 0.13 U
MW-35R	MW-35R-201512	12/2/2015	0.89 J	< 0.080 U	< 0.13 U
MW-35R	MW-35R-201601	1/11/2016	13.2	0.34 J	< 0.13 U
MW-35R	MW-35R-201605	5/3/2016	19.3	0.49 J	< 0.13 U
MW-36	MW-36-20010328	3/28/2001	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20010913	9/13/2001	< 5 U	< 5 U	< 10 U
MW-36	MW-36L-20020909	9/9/2002	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20030228	2/28/2003	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20030925	9/25/2003	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20031114	11/14/2003	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20040415	4/15/2004	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20040923	9/23/2004	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20050406	4/6/2005	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20060317	3/17/2006	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20061011	10/11/2006	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20070418	4/18/2007	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20070920	9/20/2007	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20080430	4/30/2008	< 5 U	< 5 U	< 10 U
MW-36	MW-36-20081211	12/11/2008	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20090507	5/7/2009	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20090508	5/8/2009	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20090528	5/28/2009	< 5 U	< 5 U	< 5 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-36	MW-36-20091028	10/28/2009	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20100512	5/12/2010	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20101107	11/7/2010	9.9	< 5 U	< 5 U
MW-36	MW-36-20110324	3/24/2011	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
MW-36	MW-36-20121019	10/19/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-36	MW-36-101713	10/17/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-36	MW-36-201403	3/6/2014	0.22 J	< 0.080 U	< 0.13 U
MW-36	MW-36-201405	5/13/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-36	MW-36-201407	7/29/2014	0.61 J	< 0.50 U	< 0.50 U
MW-36	MW-36-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-36	MW-36-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-36	MW-36-201504	4/14/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-36R	MW-36R-201507	7/20/2015	< 0.17 UJ	< 0.080 UJ	< 0.13 UJ
MW-36R	MW-36R-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-36R	MW-36R-201601	1/11/2016	0.31 J	< 0.080 U	< 0.13 U
MW-36R	MW-36R-201605	5/3/2016	1.7	< 0.080 U	< 0.13 U
MW-37	MW-37-20010914	9/14/2001	5000	340	< 100 U
MW-37	MW-37-20011120	11/20/2001	< 5 U	< 5 U	< 10 U
MW-37	MW-37-20020911	9/11/2002	1400	10000	300
MW-37	MW-37-20030227	2/27/2003	4050	5660	2500
MW-37	MW-37-20030717	7/17/2003	2560	1710	316
MW-37	MW-37-20030924	9/24/2003	3700	7020	973
MW-37	MW-37-20040413	4/13/2004	5190	3160	1180
MW-37	MW-37-20040921	9/21/2004	5030	5650	1370
MW-37	MW-37-20050405	4/5/2005	5310	2360	1030 E
MW-37	MW-37-20050929	9/29/2005	6780	3210	910 E
MW-37	MW-37-20060316	3/16/2006	11200	5020	1730
MW-37	MW-37-20061013	10/13/2006	13000	5300	1200
MW-37	MW-37-20061013-FD	10/13/2006	13000	5000	1200
MW-37	MW-37-20070419	4/19/2007	9490	3010	780
MW-37	MW-37-20070921	9/21/2007	22000	9100	2800
MW-37	MW-37-20080430	4/30/2008	16000	3300	1800
MW-37	MW-37-20081210	12/10/2008	24000	6300	1800
MW-37	MW-37-20090427	4/27/2009	11000	3200	1200
MW-37	MW-37-20091027	10/27/2009	37000	7400	2200
MW-37	MW-37-20100511	5/11/2010	33000	7200	2400
MW-37	MW-37-20101104	11/4/2010	54000	10000	2200
MW-37	MW-37-20110322	3/22/2011	36000	6000	2300
MW-37	MW-37-20111026	10/26/2011	57000	9700	2500
MW-37	MW-37-20120418	4/18/2012	29000	5300	2100
MW-37	MW-37-20121019	10/19/2012	4800	1100	230
MW-37	MW-37-20130425	4/25/2013	1700	900	230
MW-37	MW-37-101713	10/17/2013	1100	1500	1300
MW-37	MW-37-201904	4/24/2019	8080	1410	375
MW-37	MW-37-201910	10/24/2019	12100	1950	662
MW-38	MW-38-20010914	9/14/2001	620	90	< 20 U
MW-38	MW-38-20050929	9/29/2005	< 5 U	98.9	2150
MW-38	MW-38-20061013	10/13/2006	26	130	2000 J
MW-38	MW-38-20081210	12/10/2008	44	110	1400
MW-38	MW-38-20111026	10/26/2011	580	870	1100
MW-38	MW-38-20121018	10/18/2012	1000	750	700
MW-38	MW-38-101613	10/16/2013	2300	1200	560
MW-38	MW-38-201403	3/8/2014	1790	535	68.4
MW-38	DUP1-201405	5/14/2014	2040	426 J	98.2
MW-38	MW-38-201405	5/14/2014	1650	428	97.9
MW-38	MW-38-201407	7/31/2014	1720	637	197
MW-38	MW-38-201410	10/16/2014	6750	781	321
MW-38	DUP-06-201410	10/16/2014	6970	869	370
MW-38	MW-38-20141204	12/4/2014	3190	697	193
MW-38	MW-38-201501	1/15/2015	5440	1900	133
MW-38	DUP-06-201501	1/15/2015	3910	1190	143
MW-38	MW-38-201504	4/16/2015	3060	2060	33.7
MW-38	MW-38-201507	7/23/2015	3420	1340	119
MW-38	MW-38-201510	10/8/2015	2740	1340	190
MW-38	MW-38-201601	1/13/2016	3680	1180	84.3
MW-38	MW-38-201605	5/5/2016	3040	950	18.1
MW-38	MW-38-201611	11/10/2016	2860	1070	597
MW-38	MW-38-201704	4/28/2017	2550	949	23.9
MW-38	MW-38-201710	10/26/2017	2240	823	< 0.13 U
MW-38	MW-38-201804	4/19/2018	2560	777	23.6
MW-38	MW-38-201811	11/15/2018	2340	675	360
MW-38	MW-38-201904	4/25/2019	1760	388	15.9
MW-38	DUP-02-201904	4/25/2019	1890	416	14.1
MW-38	MW-38-201910	10/23/2019	2180	542	307
MW-39	MW-39-20030718	7/18/2003	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20030925	9/25/2003	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20031114	11/14/2003	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20040415	4/15/2004	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20040923	9/23/2004	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20050408	4/8/2005	< 5 U	< 5 U	< 10 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-39	MW-39-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20060317	3/17/2006	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20061011	10/11/2006	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20070418	4/18/2007	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20080430	4/30/2008	< 5 U	< 5 U	< 10 U
MW-39	MW-39-20081209	12/9/2008	< 5 U	< 5 U	< 5 U
MW-39	MW-39-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-39	MW-39-20091027	10/27/2009	< 5 U	< 5 U	< 5 U
MW-39	MW-39-20100511	5/11/2010	< 5 U	< 5 U	< 5 U
MW-39	MW-39-20101107	11/7/2010	20	< 5 U	< 5 U
MW-39	MW-39-20110324	3/24/2011	< 5 U	< 5 U	< 5 U
MW-39	MW-39-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
MW-39	MW-39-20121019	10/19/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-39	MW-39-101813	10/18/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-39	MW-39-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-39	MW-39-201405	5/13/2014	0.23 J	< 0.080 U	< 0.13 U
MW-39	MW-39-201407	7/29/2014	0.79 J	< 0.50 U	< 0.50 U
MW-39	MW-39-201410	10/13/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-39	MW-39-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-39	MW-39-201504	4/14/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-39R	MW-39R-201507	7/20/2015	< 0.17 UJ	< 0.080 UJ	< 0.13 UJ
MW-39R	MW-39R-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-39R	MW-39R-201601	1/12/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-39R	MW-39R-201605	5/2/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-39R	MW-39R-201611	11/7/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-39R	MW-39R-201704	4/27/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-39R	MW-39R-201710	10/25/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-39R	FD-05-201710	10/25/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-39R	MW-39R-201804	4/18/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-39R	MW-39R-201811	11/15/2018	< 0.17	< 0.080 U	< 0.13 U
MW-39R	MW-39R-201904	4/24/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-39R	MW-39R-201910	10/22/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-40	MW-40-20030718	7/18/2003	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20030925	9/25/2003	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20031114	11/14/2003	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20031114-FD	11/14/2003	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20040415	4/15/2004	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20040923	9/23/2004	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20050407	4/7/2005	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20050929	9/29/2005	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20060314	3/14/2006	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20061010	10/10/2006	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20070418	4/18/2007	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20070918	9/18/2007	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20080428	4/28/2008	< 5 U	< 5 U	< 10 U
MW-40	MW-40-20081211	12/11/2008	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20090527	5/27/2009	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20091029	10/29/2009	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20100512	5/12/2010	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20101104	11/4/2010	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20110323	3/23/2011	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
MW-40	MW-40-20120418	4/18/2012	3.9 J	< 5 U	< 5 U
MW-40	MW-40-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-40	MW-40-20130423	4/23/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-40	MW-40-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-40	MW-40-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-40	MW-40-201405	5/12/2014	0.76 J	< 0.080 U	< 0.13 U
MW-40	MW-40-201407	7/29/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-40	MW-40-201410	10/13/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-40	MW-40-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-40	MW-40-201504	4/14/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-40R	MW-40R-201507	7/20/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-40R	MW-40R-201510	10/6/2015	0.30 J	0.23 J	< 0.13 U
MW-40R	DUP-03-201510	10/6/2015	0.83 J	< 0.080 U	< 0.13 U
MW-40R	MW-40R-201601	1/12/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-40R	DUP-06-201601	1/12/2016	0.28 J	0.22 J	< 0.13 U
MW-40R	MW-40R-201605	5/2/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-40R	MW-40R-201611	11/7/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-40R	MW-40R-201704	4/27/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-40R	MW-40R-201710	10/24/2017	0.31 J	< 0.080 U	< 0.13 U
MW-40R	MW-40R-201804	4/17/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-40R	MW-40R-201811	11/14/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-40R	MW-40R-201904	4/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-40R	MW-40R-201910	10/22/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-41	MW-41-20030718	7/18/2003	972	50.6	< 10 U
MW-41	MW-41-20030718-FD	7/18/2003	964	45.5	< 10 U
MW-41	MW-41-20030925	9/25/2003	722	37.8	< 10 U
MW-41	MW-41-20031114	11/14/2003	331	205	< 10 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-41	MW-41-20040415	4/15/2004	760	54.2	< 10 U
MW-41	MW-41-20040923	9/23/2004	1060	48	< 10 U
MW-41	MW-41-20050407	4/7/2005	1170	58	< 10 U
MW-41	MW-41-20050930	9/30/2005	1120	55.8	< 10 U
MW-41	MW-41-20060317	3/17/2006	917	52.5	< 10 U
MW-41	MW-41-20061013	10/13/2006	970	43	< 10 UJ
MW-41	MW-41-20070418	4/18/2007	900	30.1	< 10 U
MW-41	MW-41-20070920	9/20/2007	850	32	< 10 U
MW-41	MW-41-20080430	4/30/2008	730	31	< 10 U
MW-41	MW-41-20081211	12/11/2008	820	29	< 5 U
MW-41	MW-41-20090424	4/24/2009	660	25	< 5 U
MW-41	MW-41-20090507	5/7/2009	180	4.7 J	< 5 U
MW-41	MW-41-20090508	5/8/2009	180	4.7 J	< 5 U
MW-41	MW-41-20090527	5/27/2009	230	16	< 5 U
MW-41	MW-41-20091028	10/28/2009	180	4 J	< 5 U
MW-41	MW-41-20100513	5/13/2010	610	19	< 5 U
MW-41	MW-41-20101105	11/5/2010	930	31	< 5 U
MW-41	MW-41-20110304-FS	3/4/2011	120	20	< 0.85 U
MW-41	MW-41-20110523-FS	5/23/2011	370	15	
MW-41	MW-41-20111025	10/25/2011	420	18	< 5 U
MW-41	MW-41-20121020	10/20/2012	620	23	< 0.11 U
MW-41	MW-41-20121020-FD	10/20/2012	550	21	< 0.11 U
MW-41	MW-41-101613	10/16/2013	520	24	< 0.11 U
MW-41	MW-41-201403	3/7/2014	501	19.7	0.68 J
MW-41	MW-41-201405	5/14/2014	518	18.0	0.50 J
MW-41	MW-41-201407	7/30/2014	480	19.7	< 0.50 U
MW-41	DUP-2-201407	7/30/2014	511	19.1	< 0.50 U
MW-41	MW-41-201410	10/15/2014	491	16.9	< 0.50 U
MW-41	MW-41-201501	1/14/2015	425	15.6	< 0.50 U
MW-41	MW-41-201504	4/15/2015	386	15.2	0.27 J
MW-41	DUP-02-201504	4/15/2015	410	13.5	< 0.13
MW-41R	MW-41R-201507	7/21/2015	40.4	3.3	< 0.13 U
MW-41R	DUP-03-201507	7/21/2015	43.0	2.8	< 0.13 U
MW-41R	MW-41R-201510	10/6/2015	48.7	36.7	0.39 J
MW-41R	DUP-07-201510	10/6/2015	46.4	35.2	0.33 J
MW-41R	MW-41R-201601	1/12/2016	59.9	40.9	0.38 J
MW-41R	DUP-07-201601	1/12/2016	56.6	40.1	0.35 J
MW-41R	MW-41R-201605	5/3/2016	87.8	17.3	0.18 J
MW-41R	DUP-03-201605	5/3/2016	82.9	17.5	0.20 J
MW-42B	MW-42B-20031114	11/14/2003	481	21.1	< 10 U
MW-42B	MW-42B-20040415	4/15/2004	856	29.3	< 10 U
MW-42B	MW-42B-20040923	9/23/2004	400	19.8	< 10 U
MW-42B	MW-42B-20050405	4/5/2005	1310	32	< 10 U
MW-42B	MW-42B-20050927	9/27/2005	1470	27.3	< 10 U
MW-42B	MW-42B-20060315	3/15/2006	2270	37.2	< 10 U
MW-42B	MW-42B-20061010	10/10/2006	2000	35	2 J
MW-42B	MW-42B-20070417	4/17/2007	1600	36.8	< 10 U
MW-42B	MW-42B-20070918	9/18/2007	2100	39	4 J
MW-42B	MW-42B-20080429	4/29/2008	1600	33	3 J
MW-42B	MW-42B-20081209	12/9/2008	1100	30	< 5 U
MW-42B	MW-42B-20090425	4/25/2009	1500	35	< 5 U
MW-43	MW-43-20031114	11/14/2003	223	18.5	< 10 U
MW-43	MW-43-20040415	4/15/2004	510	12.1	< 10 U
MW-43	MW-43-20040923	9/23/2004	64.7	6.31	< 10 U
MW-43	MW-43-20050405	4/5/2005	304	11.9	< 10 U
MW-43	MW-43-20050927	9/27/2005	518	21.3	< 10 U
MW-43	MW-43-20060315	3/15/2006	1300	35	< 10 U
MW-43	MW-43-20061011	10/11/2006	920	30	< 10 U
MW-43	MW-43-20070417	4/17/2007	220	14.1	< 10 U
MW-43	MW-43-20070918	9/18/2007	350	13	< 10 U
MW-43	MW-43-20080428	4/28/2008	120	4 J	< 10 U
MW-43	MW-43-20081209	12/9/2008	150	5.3	< 5 U
MW-43	MW-43-20090425	4/25/2009	120	< 5 U	< 5 U
MW-43	MW-43-20090507	5/7/2009	180	6	< 5 U
MW-43	MW-43-20090508	5/8/2009	180	6	< 5 U
MW-46R	MW-46R-20031114	11/14/2003	39.9	< 5 U	< 10 U
MW-46R	MW-46R-20040415	4/15/2004	77.1	27.2	< 10 U
MW-46R	MW-46R-20040923	9/23/2004	142	21.2	< 10 U
MW-46R	MW-46R-20050406	4/6/2005	210	28.4	< 10 U
MW-46R	MW-46R-20050928	9/28/2005	222	15.6	< 10 U
MW-46R	MW-46R-20060316	3/16/2006	111	6.37	< 10 U
MW-46R	MW-46R-20060406	4/6/2006	300	< 5 U	< 10 U
MW-46R	MW-46R-20061011	10/11/2006	450	8	< 10 U
MW-46R	MW-46R-20070417	4/17/2007	440	12.5	< 10 U
MW-46R	MW-46R-20070918	9/18/2007	420	9	< 10 U
MW-46R	MW-46R-20080429	4/29/2008	430	8	< 10 U
MW-46R	MW-46R-20081209	12/9/2008	310	19	< 5 U
MW-46R	MW-46R-20090425	4/25/2009	460	11	< 5 U
MW-46R	MW-46R-20090527	5/27/2009	< 5 U	< 5 U	< 5 U
MW-46R	MW-46R-20091027	10/27/2009	390	12	< 5 U
MW-46R	MW-46R-20091221-FS	12/21/2009	410	10	< 1.6 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-46R	MW-46R-20100511	5/11/2010	610	13	< 5 U
MW-46R	MW-46R-20101105	11/5/2010	650	12	< 5 U
MW-46R	MW-46R-20110307-FS	3/7/2011	670	14	< 0.85 U
MW-46R	MW-46R-20110322	3/22/2011	680	11	< 5 U
MW-46R	MW-46R-20110523-FS	5/23/2011	610	13	
MW-46R	MW-46R-20111026	10/26/2011	460	10	< 5 U
MW-46R	MW-46R-20120418	4/18/2012	680	14	< 5 U
MW-46R	MW-46R-20121020	10/20/2012	410	7.9	0.44 J
MW-46R	MW-46R-20130423	4/23/2013	470	7.6	0.91 J
MW-46R	MW-46R-101813	10/18/2013	410	11	< 0.11 U
MW-46R	MW-46R-201403	3/7/2014	469	12.8	0.46 J
MW-46R	MW-46R-201405	5/14/2014	471	12.8	0.76 J
MW-46R	MW-46R-201407	7/29/2014	472	13.7	0.64 J
MW-46R	MW-46R-201410	10/16/2014	410	24.6	< 0.50 U
MW-46R	DUP-03-201410	10/16/2014	373	25.2	< 0.50 U
MW-46R	MW-46R-201501	1/13/2015	452	11.6	0.71 J
MW-46R	DUP-03-201501	1/13/2015	428	12.0	0.90 J
MW-46R	MW-46R-201504	4/14/2015	220 J	13.8	0.47 J
MW-46R	DUP-07-201504	4/14/2015	482	13.9	0.51 J
MW-46R	MW-46R-201507	7/21/2015	460	11.2	0.37 J
MW-46R	DUP-05-201507	7/21/2015	444	10.3	0.40 J
MW-46R	MW-46R-201510	10/7/2015	371	10.2	0.43 J
MW-46R	MW-46R-201601	1/12/2016	432	10.9	0.56 J
MW-46R	MW-46R-201605	5/3/2016	445	12.6	0.40 J
MW-46R	DUP-10-201605	5/3/2016	461	11.1	0.52 J
MW-46R	MW-46R-201611	11/8/2016	411	10.3	0.79 J
MW-46R	MW-46R-201704	4/27/2017	486	12.4	0.47 J
MW-46R	MW-46R-201710	10/24/2017	408	10.7	0.51 J
MW-46R	MW-46R-201804	4/18/2018	520	12.6	0.56 J
MW-46R	MW-46R-201811	11/14/2018	603	14.4	1.2
MW-46R	MW-46R-201904	4/24/2019	560 M1	13.4 J-	0.46 J
MW-46R	MW-46R-201910	10/23/2019	555	22.1	0.69 J
MW-46R	DUP-03-201910	10/23/2019	560	16.5	0.56 J
MW-50	MW-50-20040415	4/15/2004	6.51	< 5 U	< 10 U
MW-50	MW-50-20040923	9/23/2004	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20041210	12/10/2004	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20050406	4/6/2005	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20050928	9/28/2005	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20060317	3/17/2006	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20061012	10/12/2006	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20070419	4/19/2007	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20080429	4/29/2008	< 5 U	< 5 U	< 10 U
MW-50	MW-50-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-50	MW-50-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-50	MW-50-20091027	10/27/2009	< 5 U	< 5 U	< 5 U
MW-50	MW-50-20100511	5/11/2010	< 5 U	< 5 U	< 5 U
MW-50	MW-50-20101105	11/5/2010	< 5 U	< 5 U	< 5 U
MW-50	MW-50-20110323	3/23/2011	< 5 U	< 5 U	< 5 U
MW-50	MW-50-20111025	10/25/2011	< 5 U	< 5 U	< 5 U
MW-50	MW-50-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-50	MW-50-101613	10/16/2013	1.6 J	< 0.56 U	< 0.11 U
MW-50	MW-50-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-50	MW-50-201405	5/13/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-50	MW-50-201407	7/28/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-50	MW-50-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-50	MW-50-201501	1/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-50	MW-50-201504	4/14/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-50	MW-50-201710	10/23/2017	0.26 J	< 0.080 U	< 0.13 U
MW-50R	MW-50R-201507	7/21/2015	0.22 J	< 0.080 U	< 0.13 U
MW-50R	MW-50R-201510	10/6/2015	0.35 J	< 0.080 U	< 0.13 U
MW-50R	MW-50R-201601	1/11/2016	0.42 J	< 0.080 U	< 0.13 U
MW-50R	MW-50R-201605	5/2/2016	0.46 J	< 0.080 U	< 0.13 U
MW-50R	MW-50R-201611	11/7/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-50R	MW-50R-201704	4/26/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-50R	MW-50R-201804	4/17/2018	0.61 J	< 0.080 U	< 0.13 U
MW-50R	MW-50R-201811	11/13/2018	0.73 J	< 0.080 U	< 0.13 U
MW-50R	MW-50R-201904	4/23/2019	0.72 J	< 0.17 U	< 0.11 U
MW-50R	MW-50R-201910	10/23/2019	0.61 J	< 0.17 U	< 0.11 U
MW-55	MW-55-20041209	12/9/2004	< 5 U	< 5 U	< 10 U
MW-55	MW-55-20050408	4/8/2005	< 5 U	< 5 U	< 10 U
MW-55	MW-55-20050928	9/28/2005	< 5 U	< 5 U	< 10 U
MW-55	MW-55-20060316	3/16/2006	< 5 U	< 5 U	< 10 U
MW-55	MW-55-20061013	10/13/2006	2 J	< 5 U	< 10 UJ
MW-55	MW-55-20070419	4/19/2007	2.6 J	< 5 U	< 10 U
MW-55	MW-55-20070919	9/19/2007	5 J	< 5 U	< 10 U
MW-55	MW-55-20080429	4/29/2008	< 5 U	< 5 U	< 10 U
MW-55	MW-55-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-55	MW-55-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-55	MW-55-20091027	10/27/2009	3.6 J	< 5 U	< 5 U
MW-55	MW-55-20100512	5/12/2010	4.2 J	< 5 U	< 5 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-55	MW-55-20101106	11/6/2010	14	< 5 U	< 5 U
MW-55	MW-55-20110323	3/23/2011	5.5	< 5 U	< 5 U
MW-55	MW-55-20111025	10/25/2011	7	< 5 U	< 5 U
MW-55	MW-55-20121020	10/20/2012	9.2	< 0.56 U	< 0.11 U
MW-55	MW-55-101613	10/16/2013	13	< 0.56 U	< 0.11 U
MW-55R	MW-55R-201507	7/20/2015	8.2	0.42 J	0.13 J
MW-55R	MW-55R-201510	10/6/2015	4.4	0.53 J	0.14 J
MW-55R	MW-55R-201601	1/12/2016	0.26 J	< 0.080 U	< 0.13 U
MW-55R	MW-55R-201605	5/2/2016	2.1	< 0.080 U	< 0.13 U
MW-55R	MW-55R-201611	11/7/2016	3.1	< 0.080 U	< 0.13 U
MW-55R	MW-55R-201704	4/27/2017	7.0	0.58 J	< 0.13 U
MW-55R	MW-55R-201710	10/25/2017	10.9	0.77 J	0.15 J
MW-55R	MW-55R-201804	4/18/2018	17.0	0.77 J	< 0.13 U
MW-55R	DUP-05-201804	4/18/2018	18.1	0.82 J	0.16 J
MW-55R	MW-55R-201811	11/15/2018	22.3	0.91 J	< 0.13 U
MW-55R	DUP-08-201811	11/15/2018	23.1	0.85 J	< 0.13 U
MW-55R	MW-55R-201904	4/25/2019	10.9	0.60 J	< 0.11 U
MW-55R	MW-55R-201910	10/23/2019	26.4	0.98 J	0.16 J
MW-55R	DUP-04-2019110	10/23/2019	27.7	1.2	0.18 J
MW-56	MW-56-20041210	12/10/2004	90.2	< 5 U	< 10 U
MW-56	MW-56-20050408	4/8/2005	88.2	< 5 U	< 10 U
MW-56	MW-56-20050928	9/28/2005	207	< 5 U	< 10 U
MW-56	MW-56-20060316	3/16/2006	8.7	< 5 U	< 10 U
MW-56	MW-56-20061014	10/14/2006	110	2 J	< 10 UJ
MW-56	MW-56-20070419	4/19/2007	< 5 U	< 5 U	< 10 U
MW-56	MW-56-20070919	9/19/2007	38	< 5 U	< 10 U
MW-56	MW-56-20080429	4/29/2008	4 J	< 5 U	< 10 U
MW-56	MW-56-20081210	12/10/2008	93	< 5 U	< 5 U
MW-56	MW-56-20090424	4/24/2009	14	< 5 U	< 5 U
MW-56	MW-56-20091027	10/27/2009	8.7	< 5 U	< 5 U
MW-56	MW-56-20100512	5/12/2010	230	6.4	< 5 U
MW-56	MW-56-20110323	3/23/2011	71	2.6 J	< 5 U
MW-56	MW-56-20111025	10/25/2011	150	11	1.9 J
MW-56	MW-56-20121020	10/20/2012	470	11	< 0.11 U
MW-56	MW-56-101713	10/17/2013	590	17	< 0.11 U
MW-56	MW-56-201403	3/7/2014	618	15.3	0.15 J
MW-56	MW-56-201405	6/11/2014	307	17.6	0.16 J
MW-56	MW-56-201407	7/29/2014	516	19.3	< 0.50 U
MW-56	MW-56-201410	10/15/2014	408	12.1	< 0.50 U
MW-56	MW-56-201501	1/13/2015	326	10	< 0.50 U
MW-56	MW-56-201504	4/16/2015	495	8.2	< 0.13 U
MW-56R	MW-56R-201507	7/20/2015	156	8.0	0.31 J
MW-56R	MW-56R-201510	10/6/2015	278	18.1	0.42 J
MW-56R	MW-56R-201601	1/11/2016	408	19.2	0.32 J
MW-56R	MW-56R-201605	5/3/2016	734	19.7	0.52 J
MW-56R	MW-56R-201611	11/8/2016	679	27.8	0.37 J
MW-56R	MW-56R-201710	10/24/2017	815	33.8	< 0.13 U
MW-56R	MW-56R-201811	11/14/2018	902	21.1	0.38 J
MW-56R	MW-56R-201904	4/25/2019	803	20.0	0.36 J
MW-56R	DUP-03-201904	4/25/2019	798	20.3	0.31 J
MW-56R	MW-56R-201910	10/23/2019	649	16.9	0.32 J
MW-57	MW-57-20041210	12/10/2004	207	6.72	< 10 U
MW-57	MW-57-20050408	4/8/2005	282	6.83	< 10 U
MW-57	MW-57-20050928	9/28/2005	96	< 5 U	< 10 U
MW-57	MW-57-20060316	3/16/2006	254	7.56	< 10 U
MW-57	MW-57-20061013	10/13/2006	64	< 5 U	< 10 UJ
MW-57	MW-57-20070419	4/19/2007	201	3.77 J	< 10 U
MW-57	MW-57-20070920	9/20/2007	250	5 J	< 10 U
MW-57	MW-57-20080430	4/30/2008	14	< 5 U	< 10 U
MW-57	MW-57-20081210	12/10/2008	130	7.4	< 5 U
MW-57	MW-57-20090424	4/24/2009	96	4.2 J	< 5 U
MW-57	MW-57-20091027	10/27/2009	100	2.6 J	< 5 U
MW-57	MW-57-20100512	5/12/2010	210	6	< 5 U
MW-57	MW-57-20110323	3/23/2011	110	2.3 J	< 5 U
MW-57	MW-57-20111025	10/25/2011	59	2 J	< 5 U
MW-57	MW-57-20121020	10/20/2012	120	5.1	< 0.11 U
MW-57	MW-57-101713	10/17/2013	210	7.4	< 0.11 U
MW-57	MW-57-201403	3/7/2014	134	3.0 J	0.14 J
MW-57	MW-57-201405	6/11/2014	167	4.4 J	< 0.13 U
MW-57	MW-57-201407	7/29/2014	308	8.2	< 0.50 U
MW-57	MW-57-201410	10/15/2014	172	4.2 J	< 0.50 U
MW-57	MW-57-201501	1/13/2015	177	5.4	< 0.50 U
MW-57	MW-57-201504	4/16/2015	194	4.8	< 0.13 U
MW-57R	MW-57R-201507	7/20/2015	409	10.6	0.53 J
MW-57R	MW-57R-201510	10/6/2015	400	13.0	0.42 J
MW-57R	MW-57R-201601	1/11/2016	422	15.7	0.48 J
MW-57R	MW-57R-201605	5/3/2016	425	12.8	0.51 J
MW-57R	MW-57R-201611	11/8/2016	441	23.0	0.44 J
MW-57R	DUP-07-201611	11/8/2016	453	24.3	0.45 J
MW-57R	MW-57R-201710	10/24/2017	441	17.5	< 0.13 U
MW-57R	MW-57R-201811	11/14/2018	286	7.7	0.21 J

RAMBOLL

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-57R	MW-57R-201904	4/25/2019	393	10.4	0.45 J
MW-57R	MW-57R-201910	10/23/2019	317	12.4	0.39 J
MW-58	MW-58-20041209	12/9/2004	526	14.5	< 10 U
MW-58	MW-58-20050407	4/7/2005	809	18.8	< 10 U
MW-58	MW-58-20050928	9/28/2005	486	10.9	< 10 U
MW-58	MW-58-20060316	3/16/2006	421	8.66	< 10 U
MW-58	MW-58-20061013	10/13/2006	620	14	< 10 UJ
MW-58	MW-58-20070419	4/19/2007	784	30.7	< 25 U
MW-58	MW-58-20070419-FD	4/19/2007	717	9.54 J	< 25 U
MW-58	MW-58-20070919	9/19/2007	650	17	< 10 U
MW-58	MW-58-20070919-FD	9/19/2007	640	16	< 10 U
MW-58	MW-58-20080430	4/30/2008	630	15	< 10 U
MW-58	MW-58-20080430-FD	4/30/2008	580	14	< 10 U
MW-58	MW-58-20081211	12/11/2008	530	12	< 5 U
MW-58	MW-58-20081211-FD	12/11/2008	510	13	< 5 U
MW-58	MW-58-20090425	4/25/2009	590	14	< 5 U
MW-58	MW-58-20090425-FD	4/25/2009	580	15	< 5 U
MW-58	MW-58-20091028	10/28/2009	480	11	< 5 U
MW-58	MW-58-20091028-FD	10/28/2009	480	11	< 5 U
MW-58	MW-58-20100512	5/12/2010	660	14	< 5 U
MW-58	MW-58-20101106-FD	11/6/2010	560	11	< 5 U
MW-58	MW-58-20101106	11/6/2010	580	12	< 5 U
MW-58	MW-58-20110324	3/24/2011	710	12	< 5 U
MW-58	MW-58-20110324-FD	3/24/2011	700	14	1.1 J
MW-58	MW-58-20121020	10/20/2012	440	18	0.84 J
MW-58	MW-58-101713	10/17/2013	410	13	1.5 J
MW-58	MW-58-20131017-FD	10/17/2013	420	12	1.1 J
MW-58	MW-58-201403	3/7/2014	293	22.3	0.93 J
MW-58	MW-58-201405	5/12/2014	397	12.1	0.72 J
MW-58	MW-58-201407	7/29/2014	399	12.7	0.76 J
MW-58	MW-58-201410	10/15/2014	360	10.8	0.68 J
MW-58	MW-58-201501	1/14/2015	385	14.7	0.71 J
MW-58	MW-58-201504	4/16/2015	356	19.7	1.5
MW-58R	MW-58R-201507	7/21/2015	337	9.5	0.57 J
MW-58R	MW-58R-201510	10/8/2015	299	10.5	0.55 J
MW-58R	MW-58R-201601	1/12/2016	312	28.7	0.67 J
MW-58R	DUP-10-201601	1/12/2016	319	29.4	0.66 J
MW-58R	MW-58R-201605	5/4/2016	352	29.7	0.81 J
MW-58R	DUP-04-201605	5/4/2016	308	25.2	0.64 J
MW-58R	MW-58R-201611	11/10/2016	< 0.17 U	28.5	0.85 J
MW-58R	MW-58R-201612	12/14/2016	265	30.3	0.61 J
MW-58R	MW-58R-201710	10/24/2017	360	10.0	0.65 J
MW-58R	MW-58R-201811	11/15/2018	312	10.2	0.43 J
MW-58R	DUP-05-201811	11/15/2018	319	9.8	0.47 J
MW-58R	MW-58R-201904	4/25/2019	305	9.8	0.48 J
MW-58R	MW-58R-201910	10/23/2019	299	9.1	0.51 J
MW-58R	DUP-01-201910	10/23/2019	311	9.6	0.55 J
MW-60	MW-60-20050401	4/1/2005	< 5 U	< 5 U	< 10 U
MW-60	MW-60-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
MW-60	MW-60-20060317	3/17/2006	< 5 U	< 5 U	< 10 U
MW-60	MW-60-20061012	10/12/2006	< 5 U	< 5 U	< 10 U
MW-60	MW-60-20070419	4/19/2007	< 5 U	< 5 U	< 10 U
MW-60	MW-60-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-60	MW-60-20080429	4/29/2008	< 5 U	< 5 U	< 10 U
MW-60	MW-60-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-60	MW-60-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-60	MW-60-20091027	10/27/2009	< 5 U	< 5 U	< 5 U
MW-60	MW-60-20100511	5/11/2010	< 5 U	< 5 U	< 5 U
MW-60	MW-60-20101104	11/4/2010	< 5 U	< 5 U	< 5 U
MW-60	MW-60-20110323	3/23/2011	< 5 U	< 5 U	< 5 U
MW-60	MW-60-20111025	10/25/2011	< 5 U	< 5 U	< 5 U
MW-60	MW-60-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-60	MW-60-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-60	MW-60-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-60	MW-60-201405	5/13/2014	0.21 J	< 0.080 U	< 0.13 U
MW-60	MW-60-201407	7/28/2014	1.0 J	< 0.50 U	< 0.50 U
MW-60	MW-60-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-60	MW-60-201501	1/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-60	MW-60-201504	4/14/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-60R	MW-60R-201507	7/21/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-60R	MW-60R-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-60R	MW-60R-201601	1/11/2016	0.22 J	< 0.080 U	< 0.13 U
MW-60R	MW-60R-201605	5/2/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-60R	MW-60R-201611	11/8/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-60R	MW-60R-201704	4/26/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-60R	MW-60R-201710	10/24/2017	0.83 J	< 0.080 U	< 0.13 U
MW-60R	MW-60R-201804	4/17/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-60R	MW-60R-201811	11/14/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-60R	MW-60R-201904	4/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-60R	MW-60R-201910	10/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-61	MW-61-20050401	4/1/2005	< 5 U	< 5 U	< 10 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-61	MW-61-20050401-FD	4/1/2005	< 5 U	< 5 U	< 10 U
MW-61	MW-61-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
MW-61	MW-61-20060317	3/17/2006	< 5 U	< 5 U	< 10 U
MW-61	MW-61-20061012	10/12/2006	< 5 U	< 5 U	< 10 U
MW-61	MW-61-20070419	4/19/2007	< 5 U	< 5 U	< 10 U
MW-61	MW-61-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-61	MW-61-20080429	4/29/2008	< 5 U	< 5 U	< 10 U
MW-61	MW-61-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-61	MW-61-20090424	4/24/2009	4 J	< 5 U	< 5 U
MW-61	MW-61-20091027	10/27/2009	< 5 U	< 5 U	< 5 U
MW-61	MW-61-20100511	5/11/2010	< 5 U	< 5 U	< 5 U
MW-61	MW-61-20101104	11/4/2010	< 5 U	< 5 U	< 5 U
MW-61	MW-61-20110323	3/23/2011	1.8 J	< 5 U	< 5 U
MW-61	MW-61-20111025	10/25/2011	< 5 U	< 5 U	< 5 U
MW-61	MW-61-20121017	10/17/2012	2.4 J	< 0.56 U	< 0.11 U
MW-61	MW-61-101613	10/16/2013	4.0 J	< 0.56 U	< 0.11 U
MW-61	MW-61-201403	3/6/2014	4.7 J	< 0.080 U	< 0.13 U
MW-61	MW-61-201405	5/13/2014	6.6	< 0.080 U	< 0.13 U
MW-61	MW-61-201407	7/28/2014	8.1	< 0.50 U	< 0.50 U
MW-61	MW-61-201410	10/14/2014	7.9	< 0.50 U	< 0.50 U
MW-61	MW-61-201501	1/13/2015	10.2	< 0.50 U	< 0.50 U
MW-61	MW-61-201504	4/14/2015	10.9	< 0.080 U	< 0.13 U
MW-61R	MW-61R-201507	7/21/2015	14.7	< 0.080 U	< 0.13 U
MW-61R	MW-61R-GW-091815	9/18/2015	16.5	< 0.080 U	< 0.13 U
MW-61R	MW-61R-201510	10/8/2015	11.7	< 0.080 U	< 0.13 U
MW-61R	DUP-02-201510	10/8/2015	13.3	< 0.080 U	< 0.13 U
MW-61R	MW-61R-201511	11/4/2015	9.2	1.1	< 0.13 U
MW-61R	MW-61R-201512	12/1/2015	5.0	4.6	< 0.13 U
MW-61R	MW-61R-201601	1/8/2016	3.9	4.6	< 0.13 U
MW-61R	MW-61R-201605	5/3/2016	5.3	3.8	< 0.13 U
MW-61R	MW-61R-201611	11/7/2016	2.3	2.9	< 0.13 U
MW-61R	MW-61R-201704	4/27/2017	2.4	2.6	< 0.13 U
MW-61R	MW-61R-201710	10/23/2017	2.9	2.1	< 0.13 U
MW-61R	MW-61R-201804	4/17/2018	4.0	1.9	< 0.13 U
MW-61R	MW-61R-201807	7/31/2018	7.0	1.8	< 0.13 U
MW-61R	MW-61R-201811	11/13/2018	7.7	1.9	< 0.13 U
MW-61R	DUP-06-201811	11/13/2018	7.7	1.8	< 0.13 U
MW-61R	MW-61R-201904	4/25/2019	14.9	1.1	< 0.11 U
MW-61R	MW-61R-201910	10/23/2019	20.8	1.7	< 0.11 U
MW-62	MW-62-20050401	4/1/2005	< 5 U	< 5 U	< 10 U
MW-62	MW-62-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
MW-62	MW-62-20060316	3/16/2006	< 5 U	< 5 U	< 10 U
MW-62	MW-62-20061012	10/12/2006	< 5 U	< 5 U	< 10 U
MW-62	MW-62-20070419	4/19/2007	< 5 U	< 5 U	< 10 U
MW-62	MW-62-20070919	9/19/2007	< 5 U	< 5 U	< 10 U
MW-62	MW-62-20080429	4/29/2008	< 5 U	< 5 U	< 10 U
MW-62	MW-62-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-62	MW-62-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-62	MW-62-20091027	10/27/2009	< 5 U	< 5 U	< 5 U
MW-62	MW-62-20100511	5/11/2010	< 5 U	< 5 U	< 5 U
MW-62	MW-62-20110323	3/23/2011	< 5 U	< 5 U	< 5 U
MW-62	MW-62-20111025	10/25/2011	1.9 J	< 5 U	< 5 U
MW-62	MW-62-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-62	MW-62-101713	10/17/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-62	MW-62-201403	3/7/2014	0.18 J	< 0.080 U	< 0.13 U
MW-62	MW-62-201405	5/14/2014	0.62 J	< 0.080 U	< 0.13 U
MW-62	MW-62-201407	7/29/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-62	MW-62-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-62	MW-62-201501	1/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-62	MW-62-201504	4/14/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-62R	MW-62R-201507	7/21/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-62R	MW-62R-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-62R	MW-62R-201601	1/11/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-62R	MW-62R-201605	5/3/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-62R	MW-62R-201611	11/7/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-62R	MW-62R-201704	4/26/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-62R	FD-02-201710	10/24/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-62R	MW-62R-201710	10/25/2017	0.38 U	0.17 J	< 0.13 U
MW-62R	MW-62R-201804	4/17/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-62R	MW-62R-201811	11/14/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-62R	MW-62R-201904	4/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-62R	MW-62R-201910	10/22/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-63	MW-63-20050401	4/1/2005	8.14	< 5 U	< 10 U
MW-63	MW-63-20050930	9/30/2005	< 5 U	< 5 U	< 10 U
MW-63	MW-63-20060316	3/16/2006	9.76	< 5 U	< 10 U
MW-63	MW-63-20060406	4/6/2006	11.6	< 5 U	< 10 U
MW-63	MW-63-20061012	10/12/2006	4 J	< 5 U	< 10 U
MW-63	MW-63-20070419	4/19/2007	4.08 J	< 5 U	< 10 U
MW-63	MW-63-20070919	9/19/2007	8	< 5 U	< 10 U
MW-63	MW-63-20080430	4/30/2008	3 J	< 5 U	< 10 U
MW-63	MW-63-20081210	12/10/2008	< 5 U	< 5 U	< 5 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-63	MW-63-20090424	4/24/2009	4.3 J	< 5 U	< 5 U
MW-63	MW-63-20091027	10/27/2009	7.7	< 5 U	< 5 U
MW-63	MW-63-20100511	5/11/2010	7.6	< 5 U	< 5 U
MW-63	MW-63-20101106	11/6/2010	11	< 5 U	< 5 U
MW-63	MW-63-20110323	3/23/2011	12	< 5 U	< 5 U
MW-63	MW-63-20111025	10/25/2011	9.8	< 5 U	< 5 U
MW-63	MW-63-20121019	10/19/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-63	MW-63-101713	10/17/2013	7.5	< 0.56 U	< 0.11 U
MW-63	MW-63-201403	3/7/2014	9.4	1.3 J	< 0.13 U
MW-63	MW-63-201405	5/14/2014	12.2	0.61 J	0.13 J
MW-63	MW-63-201407	7/28/2014	8.3	0.99 J	< 0.50 U
MW-63	MW-63-201410	10/14/2014	9.4	0.98 J	< 0.50 U
MW-63	MW-63-201501	1/13/2015	8.2	1.0	< 0.50 U
MW-63	MW-63-201504	4/14/2015	9.2	0.99 J	< 0.13 U
MW-63R	MW-63R-201507	7/21/2015	5.6	0.70 J	< 0.13 U
MW-63R	MW-63R-201510	10/8/2015	3.9	0.70 J	< 0.13 U
MW-63R	MW-63R-201601	1/12/2016	3.2	0.39 J	< 0.13 U
MW-63R	MW-63R-201605	5/2/2016	3.3	0.55 J	< 0.13 U
MW-63R	MW-63R-201611	11/7/2016	2.9	0.21 J	< 0.13 U
MW-63R	MW-63R-201704	4/26/2017	3.8 B	< 0.080 U	< 0.13 U
MW-63R	MW-63R-201710	10/23/2017	4.4	0.85 J	< 0.13 U
MW-63R	MW-63R-201804	4/17/2018	4.8	0.44 J	< 0.13 U
MW-63R	DUP-01-201804	4/17/2018	4.9	0.38 J	< 0.13 U
MW-63R	MW-63R-201811	11/14/2018	4.5	0.66 J	< 0.13 U
MW-63R	MW-63R-201904	4/23/2019	4.1	0.52 J	< 0.11 U
MW-63R	MW-63R-201910	10/22/2019	7.4	0.59 J	< 0.11 U
MW-65	MW-65-20061011	10/11/2006	470	19	< 10 U
MW-65	MW-65-20061011-FD	10/11/2006	560	18	< 10 U
MW-65	MW-65-20070419	4/19/2007	1350	23.4	< 10 U
MW-65	MW-65-20070920	9/20/2007	580	17	< 10 U
MW-65	MW-65-20080430	4/30/2008	570	16	< 10 U
MW-65	MW-65-20081211	12/11/2008	460	11	< 5 U
MW-65	MW-65-20090424	4/24/2009	620	19	< 5 U
MW-65	MW-65-20101107	11/7/2010	400	11	< 5 U
MW-65	MW-65-20110304-FS	3/4/2011	370	13	< 0.85 U
MW-65	MW-65-20111025	10/25/2011	310	10	< 5 U
MW-65	MW-65-20121020	10/20/2012	280	8.9	< 0.11 U
MW-65	MW-65-101713	10/17/2013	220	8.6	< 0.11 U
MW-65	MW-65-201403	3/8/2014	199	6.6	< 0.13 U
MW-65	MW-65-201405	5/14/2014	195	6.9	< 0.13 U
MW-65	MW-65-201407	7/30/2014	17.1	< 0.50 U	< 0.50 U
MW-65	MW-65-201410	10/14/2014	30.8	0.54 J	< 0.50 U
MW-65	MW-65-201501	1/13/2015	19.2	< 0.50 U	< 0.50 U
MW-65	MW-65-201504	4/15/2015	16.0	< 0.080 U	< 0.13 U
MW-65	MW-65-201507	7/20/2015	26.3	0.38 J	< 0.13 U
MW-65	MW-65-201510	10/7/2015	0.28 J	< 0.080 U	< 0.13 U
MW-65	MW-65-201511	11/4/2015	7.7	< 0.080 U	< 0.13 U
MW-65	MW-65-201512	12/2/2015	6.6	< 0.080 U	< 0.13 U
MW-65	MW-65-201601	1/11/2016	14.5	0.32 J	< 0.13 U
MW-65	MW-65-201605	5/3/2016	21.5	0.35 J	< 0.13 U
MW-66	MW-66-20060406	4/6/2006	< 5 U	< 5 U	< 10 U
MW-66	MW-66-20061012	10/12/2006	2 J	< 5 U	< 10 U
MW-66	MW-66-20070418	4/18/2007	< 5 U	< 5 U	< 10 U
MW-66	MW-66-20070919	9/19/2007	4 J	< 5 U	< 10 U
MW-66	MW-66-20080429	4/29/2008	< 5 U	< 5 U	< 10 U
MW-66	MW-66-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-66	MW-66-20090425	4/25/2009	< 5 U	< 5 U	< 5 U
MW-66	MW-66-20091028	10/28/2009	< 5 U	< 5 U	< 5 U
MW-66	MW-66-20100511	5/11/2010	< 5 U	< 5 U	< 5 U
MW-66	MW-66-20101103	11/3/2010	< 5 U	< 5 U	< 5 U
MW-66	MW-66-20110324	3/24/2011	1.6 J	< 5 U	< 5 U
MW-66	MW-66-20111026	10/26/2011	1.8 J	< 5 U	< 5 U
MW-66	MW-66-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-66	MW-66-101713	10/17/2013	2.1 J	< 0.56 U	< 0.11 U
MW-66	MW-66-201403	3/7/2014	3.5 J	< 0.080 U	< 0.13 U
MW-66	MW-66-201405	5/13/2014	3.1 J	< 0.080 U	< 0.13 U
MW-66	MW-66-201407	7/28/2014	2.6 J	< 0.50 U	< 0.50 U
MW-66	MW-66-201410	10/13/2014	2.3 J	< 0.50 U	< 0.50 U
MW-66	MW-66-201501	1/14/2015	2.4	< 0.50 U	< 0.50 U
MW-66	MW-66-201504	4/15/2015	2.6	< 0.080 U	< 0.13 U
MW-66	MW-66-201507	7/20/2015	3.3	0.22 J	< 0.13 U
MW-66	MW-66-201510	10/6/2015	2.3	0.18 J	< 0.13 U
MW-66	MW-66-201601	1/11/2016	0.53 J	< 0.080 U	< 0.13 U
MW-66	MW-66-201605	5/2/2016	2.6	0.20 J	< 0.13 U
MW-67	MW-67-20060406	4/6/2006	< 5 U	< 5 U	< 10 U
MW-67	MW-67-20061012	10/12/2006	1 J	< 5 U	< 10 U
MW-67	MW-67-20070419	4/19/2007	< 5 U	< 5 U	< 10 U
MW-67	MW-67-20070918	9/18/2007	< 5 U	< 5 U	< 10 U
MW-67	MW-67-20080429	4/29/2008	< 5 U	< 5 U	< 10 U
MW-67	MW-67-20081210	12/10/2008	< 5 U	< 5 U	< 5 U
MW-67	MW-67-20090425	4/25/2009	< 5 U	< 5 U	< 5 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-67	MW-67-20091028	10/28/2009	< 5 U	< 5 U	< 5 U
MW-67	MW-67-20100511	5/11/2010	< 5 U	< 5 U	< 5 U
MW-67	MW-67-20101103	11/3/2010	< 5 U	< 5 U	< 5 U
MW-67	MW-67-20110324	3/24/2011	< 5 U	< 5 U	< 5 U
MW-67	MW-67-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
MW-67	MW-67-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-67	MW-67-101713	10/17/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-67	MW-67-201403	3/7/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-67	MW-67-201405	5/13/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-67	MW-67-201407	7/28/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-67	MW-67-201410	10/13/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-67	MW-67-201501	1/12/2015	1.3	< 0.50 U	< 0.50 U
MW-67	MW-67-201504	4/15/2015	0.77 J	< 0.080 U	< 0.13 U
MW-67R	MW-67R-201507	7/20/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-67R	MW-67R-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-67R	MW-67R-201601	1/11/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-67R	MW-67R-201605	5/2/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-68	MW-68-20090115	1/15/2009	< 5 U	< 5 U	< 5 U
MW-68	MW-68-20090424	4/24/2009	< 5 U	< 5 U	< 5 U
MW-68	MW-68-20091028	10/28/2009	< 5 U	< 5 U	< 5 U
MW-68	MW-68-20100513	5/13/2010	< 5 U	< 5 U	< 5 U
MW-68	MW-68-20101106	11/6/2010	9.5	< 5 U	< 5 U
MW-68	MW-68-20111026	10/26/2011	< 5 U	< 5 U	< 5 U
MW-68	MW-68-20121017	10/17/2012	< 1.6 U	< 0.56 U	< 0.11 U
MW-68	MW-68-101613	10/16/2013	< 1.6 U	< 0.56 U	< 0.11 U
MW-68	MW-68-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
MW-68	MW-68-201405	5/14/2014	0.49 J	< 0.080 U	< 0.13 U
MW-68	MW-68-201407	7/29/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-68	MW-68-201410	10/14/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-68	MW-68-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-68	MW-68-201504	4/13/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-68	MW-68-201507	7/20/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-68	MW-68-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-68	MW-68-201601	1/12/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-68	MW-68-201605	5/2/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-68	MW-68-201611	11/7/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-68	MW-68-201704	4/27/2017	0.22 J	< 0.080 U	< 0.13 U
MW-68	MW-68-201710	10/24/2017	0.31 J	< 0.080 U	< 0.13 U
MW-68	MW-68-201804	4/17/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-68	MW-68-201811	11/13/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-68	MW-68-201904	4/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-68	MW-68-201910	10/22/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-70	MW-70-20101104	11/4/2010	540	14	< 5 U
MW-70	MW-70-20110322	3/22/2011	170	9.2	1.2 J
MW-70	MW-70-20111026	10/26/2011	320	7.7	< 5 U
MW-70	MW-70-20120418	4/18/2012	330	11	< 5 U
MW-70	MW-70-20121018	10/18/2012	200	11	< 0.11 U
MW-70	MW-70-20130423	4/23/2013	180	3.6 J	0.32 J
MW-70	MW-70-101613	10/16/2013	270	7.2	0.30 J
MW-71	MW-71-20091028	10/28/2009	190	6.3	< 5 U
MW-71	MW-71-20100513	5/13/2010	160	7.4	< 5 U
MW-71	MW-71-20101104	11/4/2010	250	7.2	< 5 U
MW-71	MW-71-20110322	3/22/2011	76	1.6 J	< 5 U
MW-71	MW-71-20111026	10/26/2011	130	2.7 J	< 5 U
MW-71	MW-71-20120418	4/18/2012	160	5.3	< 5 U
MW-71	MW-71-20121020	10/20/2012	210	7.3	< 0.11 U
MW-71	MW-71-20130423	4/23/2013	220	4.8 J	0.23 J
MW-71	MW-71-101613	10/16/2013	160	6.1	0.57 J
MW-71	MW-71-201403	3/7/2014	166	5.8	0.19 J
MW-71	MW-71-201405	5/13/2014	164	5.3	0.33 J
MW-71	MW-71-201407	7/29/2014	181	6.4	< 0.50 U
MW-71	MW-71-201410	10/14/2014	185	6.0	< 0.50 U
MW-71	MW-71-201501	1/14/2015	170	6.0	< 0.50 U
MW-71	MW-71-201504	4/14/2015	156	5.7	< 0.13 U
MW-71	MW-71-201507	7/20/2015	165	5.3	0.48 J
MW-71	MW-71-201510	10/6/2015	179	6.5	0.43 J
MW-71	MW-71-201601	1/11/2016	171	6.1	0.40 J
MW-71	MW-71-201605	5/3/2016	140	5.3	0.23 J
MW-81	MW-81-201405	5/29/2014	512	14.3	0.21 J
MW-81	20140708-GW-MW-81	7/9/2014	518	11.4	< 0.50 U
MW-81	MW-81-201409	9/11/2014	463	13.5	< 0.50 U
MW-81	MW-81-201501	1/13/2015	385	9.9	< 0.50 U
MW-81	MW-81-201504	4/15/2015	198	4.2	< 0.50 U
MW-81	MW-81-201507	7/22/2015	275	7.7	< 0.13 U
MW-81	MW-81-201510	10/8/2015	160	3.8	< 0.13 U
MW-81	MW-81-201511	11/5/2015	233	6.5	< 0.13 U
MW-81	MW-81-201512	12/2/2015	56.1	0.84 J	< 0.13 U
MW-81	MW-81-201601	1/11/2016	157	3.9	< 0.13 U
MW-81	MW-81-201605	5/4/2016	256	8.3	< 0.13 U
MW-82	MW-82-201405	5/28/2014	285	4.8 J	0.14 J
MW-82	20140708-GW-MW-82	7/9/2014	48.2	1.2 J	< 0.50 U

RAMBOLL

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-82	MW-82-201409	9/11/2014	50.0	1.1 J	< 0.50 U
MW-82	MW-82-201501	1/13/2015	66.0	1.2	< 0.50 U
MW-82	MW-82-201504	4/15/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-82	MW-82-201507	7/22/2015	5.3	< 0.080 U	< 0.13 U
MW-82	MW-82-201510	10/6/2015	4.2	< 0.080 U	< 0.13 U
MW-82	MW-82-201601	1/11/2016	5.6	0.18 J	< 0.13 U
MW-82	MW-82-201605	5/4/2016	31.7	0.81 J	< 0.13 U
MW-82	MW-82-201611	11/9/2016	36.2	0.24 J	< 0.13 U
MW-82	MW-82-201710	10/24/2017	34.3	0.80 J	< 0.13 U
MW-82	FD-03-201710	10/24/2017	34.1	0.80 J	< 0.13 U
MW-82	MW-82-201811	11/15/2018	60.3	1.2	< 0.13 U
MW-82	MW-82-201910	10/23/2019	55.6	1.1	< 0.11 U
MW-82	DUP-02-201910	10/23/2019	55.9	0.99 J	< 0.11 U
MW-83	MW-83-20140523	5/23/2014	470	8.3	< 0.13 U
MW-83	MW-83-201409	9/12/2014	213	4.9 J	< 0.50 U
MW-83	MW-83-20141023	10/23/2014	210	5.2	< 0.50 U
MW-83	MW-83-201501	1/15/2015	101	1.8	< 0.50 U
MW-83	MW-83-201504	4/16/2015	151	2.8	< 0.13 U
MW-83	MW-83-201507	7/22/2015	27.9	0.49 J	< 0.13 U
MW-83	MW-83-201510	10/8/2015	9.8	0.25 J	< 0.13 U
MW-83	MW-83-201511	11/5/2015	3.2	< 0.080 U	< 0.13 U
MW-83	MW-83-201512	12/2/2015	1.3	< 0.080 U	< 0.13 U
MW-83	MW-83-201601	1/7/2016	1.1	< 0.080 U	< 0.13 U
MW-83	MW-83-201605	5/4/2016	3.3	< 0.080 U	< 0.13 U
MW-83	MW-83-201611	11/9/2016	0.63 J	< 0.080 U	< 0.13 U
MW-83	MW-83-201710	10/25/2017	4.8	< 0.080 U	< 0.13 U
MW-83	MW-83-201811	11/14/2018	34.2	0.63 J	< 0.13 U
MW-83	MW-83-201910	10/24/2019	41.9	0.85 J	< 0.11 U
MW-84	MW-84-201405	5/27/2014	214	4.6 J	0.16 J
MW-84	MW-84-201409A	9/12/2014	0.93 J	< 0.50 U	< 0.50 U
MW-84	MW-84-20141023	10/23/2014	0.68 J	< 0.50 U	< 0.50 U
MW-84	MW-84-201501	1/14/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-84	MW-84-201504	4/16/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-84	MW-84-201507	7/23/2015	0.29 J	< 0.080 U	< 0.13 U
MW-84	MW-84-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-84	MW-84-201601	1/7/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-84	MW-84-201605	5/5/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-84	MW-84-201611	11/9/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-84	MW-84-201704	4/27/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-84	MW-84-201710	10/25/2017	0.98 U	< 0.080 U	< 0.13 U
MW-84	MW-84-201804	4/18/2018	0.54 J	< 0.080 U	< 0.13 U
MW-84	MW-84-201811	11/14/2018	1.5	< 0.080 U	< 0.13 U
MW-84	MW-84-201904	4/23/2019	0.61 J	< 0.17 U	< 0.11 U
MW-84	DUP-01-201904	4/23/2019	0.69 J	< 0.17 U	< 0.11 U
MW-84	MW-84-201910	10/23/2019	2.4	< 0.17 U	< 0.11 U
MW-85	MW-85-201405	5/29/2014	1970	99.4	23.1
MW-85	20140708-GW-MW-85	7/8/2014	3780	133	3.9
MW-85	MW-85-201409	9/11/2014	5820	226 J	35.3
MW-85	MW-85-20141205	12/5/2014	27700	280	7.7
MW-85	MW-85-201501	1/15/2015	5940	167	1.1
MW-85	MW-85-201504	4/16/2015	256	16.8	< 0.13 U
MW-85	MW-85-201507	7/23/2015	132	6.3	< 0.13 U
MW-85	MW-85-201510	10/8/2015	12000	52.6	1.8
MW-85	MW-85-201601	1/13/2016	6980	32.8	0.70 J
MW-85	MW-85-201605	5/5/2016	678	12.0	0.82 J
MW-85R	MW-85R-201910	10/24/2019	68300	103	4.5
MW-85R	DUP-09-201910	10/24/2019	74500	101	4.8
MW-86	MW-86-201405	5/29/2014	533000	1220 J	341 J
MW-86	MW-86-201409	9/11/2014	129000	91.6	4.1
MW-86	MW-86-20141205	12/5/2014	169000	290 E	24.7
MW-86	MW-86-201501	1/15/2015	81200	128	4.5
MW-86	MW-86-201504	4/16/2015	46700	128	5.8
MW-86	MW-86-201507	7/23/2015	65100	292 J	46.7
MW-86	MW-86-201510	10/8/2015	131000	1020	127
MW-86	MW-86-201601	1/13/2016	95500	610 J	57.1
MW-86	MW-86-201605	5/5/2016	64900	348 J	35.7
MW-86	MW-86-201611	11/9/2016	75100	< 0.080 U	65.4 J
MW-86	MW-86-201704	4/28/2017	29900	1330	< 0.13 U
MW-86	MW-86-201710	10/26/2017	61300	2210	< 0.13 U
MW-86	MW-86-201804	4/19/2018	61200	2450	171
MW-86	MW-86-201811	11/16/2018	188000	19500	2780
MW-86	MW-86-201904	4/25/2019	75000	4350	264 J
MW-87	20140625-GW-MW-87	6/25/2014	564	41.8	< 0.50 U
MW-87	MW-87-201410	10/16/2014	594	47.8	< 0.50 U
MW-87	MW-87-201501	1/14/2015	661	51.3	< 0.50 U
MW-87	MW-87-201504	4/16/2015	758	58.6	0.33 J
MW-87	MW-87-201507	7/23/2015	758	56.5	0.34 J
MW-87	MW-87-201510	10/7/2015	708	54.5	0.31 J
MW-87	MW-87-201601	1/13/2016	757	61.9	0.47 J
MW-87	DUP-09-201601	1/13/2016	781	63.2	0.40 J
MW-87	MW-87-201605	5/5/2016	839	51.6	0.36 J

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-87	MW-87-201611	11/8/2016	701 J	51.9	0.25 J
MW-87	DUP-05-201611	11/8/2016	948 J	49.0	0.39 J
MW-87	MW-87-201710	10/26/2017	486	36.4	< 0.13 U
MW-87	MW-87-201811	11/15/2018	397	28.3	0.77 J
MW-87	MW-87-201910	10/23/2019	315	22.4	0.21 J
MW-88	20140624-GW-MW-88	6/24/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-88	MW-88-201410	10/16/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-88	MW-88-201501	1/13/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-88	MW-88-201504	4/16/2015	0.58 J	< 0.080 U	< 0.13
MW-88	MW-88-201507	7/23/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-88	MW-88-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-88	MW-88-201601	1/12/2016	0.58 J	< 0.080 U	< 0.13 U
MW-88	MW-88-201605	5/4/2016	0.25 J	< 0.080 U	< 0.13 U
MW-89	20140624-GW-MW-89	6/24/2014	19.5	< 0.50 U	< 0.50 U
MW-89	MW-89-201410	10/15/2014	11.3	< 0.50 U	< 0.50 U
MW-89	MW-89-201501	1/13/2015	11.4	< 0.50 U	< 0.50 U
MW-89	MW-89-201504	4/16/2015	15.9	< 0.080 U	< 0.13
MW-89	MW-89-201507	7/23/2015	14.5	0.18 J	< 0.13 U
MW-89	MW-89-201510	10/7/2015	12.7	0.24 J	< 0.13 U
MW-89	MW-89-201601	1/12/2016	11.6	0.20 J	< 0.13 U
MW-89	MW-89-201605	5/3/2016	14.0	0.30 J	< 0.13 U
MW-89	MW-89-201611	11/8/2016	13.4	< 0.080 U	< 0.13 U
MW-89	MW-89-201710	10/26/2017	11.3	0.48 J	< 0.13 U
MW-89	MW-89-201811	11/14/2018	9.7	0.53 J	< 0.13 U
MW-89	MW-89-201910	10/22/2019	9.0	0.51 J	< 0.11 U
MW-90	20140625-GW-MW-90	6/25/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-90	MW-90-201410	10/16/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-90	MW-90-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-90	MW-90-201504	4/15/2015	< 0.50 U	< 0.50 U	< 0.50
MW-90	MW-90-201507	7/22/2015	0.38 J	< 0.080 U	< 0.13 U
MW-90	MW-90-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-90	MW-90-201601	1/12/2016	0.25 J	< 0.080 U	< 0.13 U
MW-90	MW-90-201605	5/4/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-91	20140625-GW-MW-91	6/25/2014	234	21.7	< 0.50 U
MW-91	MW-91-201410	10/16/2014	319	28.8	< 0.50 U
MW-91	MW-91-201501	1/13/2015	354	31.5	< 0.50 U
MW-91	DUP-07-201501	1/13/2015	317	31.0	< 0.50 U
MW-91	MW-91-201504	4/16/2015	438	36.6	0.18 J
MW-91	MW-91-201507	7/23/2015	411	34.8	0.23 J
MW-91	MW-91-201510	10/7/2015	405	35.2	0.17 J
MW-91	DUP-08-201510	10/7/2015	442	35.7	0.19 J
MW-91	MW-91-201601	1/13/2016	413	36.1	0.24 J
MW-91	DUP-08-201601	1/13/2016	422	38.6	0.24 J
MW-91	MW-91-201605	5/4/2016	530	37.8	0.23 J
MW-91	DUP-02-201605	5/4/2016	459	33.4	0.26 J
MW-91	MW-91-201611	11/10/2016	574	41.6	0.36 J
MW-91	DUP-03-201611	11/10/2016	599	40.6	0.38 J
MW-91	MW-91-201704	4/27/2017	605	44.3	0.20 J
MW-91	DUP-04-201704	4/27/2017	556	42.6	0.15 J
MW-91	MW-91-201710	10/25/2017	534	36.4	0.27 J
MW-91	MW-91-201804	4/19/2018	557	38.6	0.21 J
MW-91	MW-91-201811	11/15/2018	437	33.4	0.30 J
MW-91	MW-91-201904	4/25/2019	454	29.9	0.21 J
MW-91	MW-91-201910	10/24/2019	437	26.8	0.18 J
MW-92	MW-92-20141022	10/22/2014	2160	16.0	7.2
MW-92	MW-92-20141204	12/4/2014	2200	23.4	10.3
MW-92	MW-92-201501	1/15/2015	1410	10.4	4.6
MW-92	MW-92-201504	4/16/2015	736	5.4	2.1
MW-92	MW-92-201507	7/23/2015	617	6.7	1.0
MW-92	MW-92-201510	10/8/2015	1400	10.8	1.4
MW-92	MW-92-201601	1/13/2016	1840	7.1	0.66 J
MW-92	MW-92-201605	5/4/2016	2210	25.5	1.8
MW-92	DUP-08-201605	5/4/2016	1840	25.7	1.7
MW-93	MW-93-20141022	10/22/2014	18200	145	5.0
MW-93	MW-93-20141204	12/4/2014	14600	85.7	2.5
MW-93	MW-93-201501	1/15/2015	18000	131	3.4
MW-93	MW-93-201504	4/16/2015	21500	160	3.9
MW-93	MW-93-201507	7/23/2015	20800	164	3.4
MW-93	MW-93-201510	10/8/2015	21100	120	3.3
MW-93	MW-93-201601	1/13/2016	21200	103	2.6
MW-93	MW-93-201605	5/5/2016	17300	127	7.6
MW-93	MW-93-201611	11/9/2016	18300	98.8	0.93 J
MW-93	MW-93-201704	4/28/2017	28200	127	5.8
MW-93	MW-93-201710	10/26/2017	16600	111	9.1
MW-93	MW-93-201804	4/19/2018	17000	97.9	4.5
MW-93	MW-93-201811	11/15/2018	16300	106	3.6
MW-93	MW-93-201904	4/24/2019	13700	124	2.3
MW-93	MW-93-201910	10/24/2019	14700	93.2	2.1
MW-94	MW-94-20141022	10/22/2014	11100	309 J	2.5
MW-94	MW-94-20141204	12/4/2014	9570	250 J	3.0
MW-94	MW-94-201501	1/15/2015	9530	297	2.4

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
MW-94	MW-94-201504	4/16/2015	11800	325	1.3
MW-94	MW-94-201507	7/23/2015	3890	119	0.61 J
MW-94	MW-94-201510	10/8/2015	1990	59.5	0.25 J
MW-94	MW-94-201601	1/13/2016	936	30.3	< 0.13 U
MW-94	MW-94-201605	5/5/2016	424	15.6	< 0.13 U
MW-95	MW-95-20141022	10/22/2014	22300	151	25.7
MW-95	MW-95-20141204	12/4/2014	20900	159	29.9
MW-95	MW-95-201501	1/15/2015	21100	177	25.6
MW-95	MW-95-201504	4/16/2015	26700	184	14.9
MW-95	MW-95-201507	7/23/2015	25200	181	17.1
MW-95	MW-95-201510	10/8/2015	26300	161	32.0
MW-95	MW-95-201601	1/13/2016	24700	161	31.0
MW-95	MW-95-201605	5/5/2016	21600	164	14.8
MW-95	MW-95-201611	11/9/2016	28700	191	46.9 J
MW-95	MW-95-201704	4/28/2017	36300	181	10.7
MW-95	MW-95-201710	10/26/2017	23900	198	51.2
MW-95	MW-95-201804	4/19/2018	24100	153	13.1
MW-95	MW-95-201811	11/15/2018	20300	152	39.6
MW-95	MW-95-201904	4/25/2019	22200	199	10.2
MW-95	DUP-06-201904	4/25/2019	20400	194	8.3
MW-95	MW-95-201910	10/24/2019	24700	265	25.9
MW-96	MW-96-20141022	10/22/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-96	MW-96-201501	1/15/2015	0.59 J	< 0.50 U	< 0.50 U
MW-96	MW-96-201504	4/16/2015	< 0.50 U	< 0.50 U	< 0.50
MW-96	DUP-06-201504	4/16/2015	< 0.50 U	< 0.50 U	< 0.50
MW-96	MW-96-201507	7/23/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-96	DUP-06-201507	7/23/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-96	MW-96-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-96	MW-96-201601	1/12/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-96	MW-96-201605	5/3/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-96	MW-96-201611	11/8/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-96	MW-96-201704	4/27/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-96	MW-96-201710	10/25/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-96	MW-96-201804	4/19/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-96	MW-96-201811	11/15/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-96	MW-96-201904	4/24/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-96	MW-96-201910	10/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-97	MW-97-20141022	10/22/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-97	MW-97-201501	1/15/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-97	MW-97-201504	4/16/2015	< 0.50 U	< 0.50 U	< 0.50
MW-97	MW-97-201507	7/23/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-97	MW-97-201510	10/7/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-97	MW-97-201601	1/12/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-97	MW-97-201605	5/5/2016	< 0.17 U	0.28 J	< 0.13 U
MW-97	MW-97-201611	11/8/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-97	MW-97-201704	4/27/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-97	MW-97-201710	10/25/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-97	MW-97-201804	4/19/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-97	MW-97-201811	11/15/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-97	MW-97-201904	4/24/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-97	MW-97-201910	10/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
MW-98	MW-98-GW-2014 1029	10/29/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-98	MW-98-201501	1/15/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-98	MW-98-201504	4/16/2015	< 0.50 U	< 0.50 U	< 0.50
MW-98	MW-98-201507	7/23/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-98	MW-98-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-98	MW-98-201601	1/11/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-98	MW-98-201605	5/3/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-98	MW-98-201611	11/8/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-98	MW-98-201704	4/27/2017	0.21 J	0.23 J	< 0.13 U
MW-98	MW-98-201710	10/24/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-98	MW-98-201804	4/18/2018	< 0.17 U	< 0.080 U	< 0.13 U
MW-98	MW-98-201811	11/14/2018	0.29 J	< 0.080 U	< 0.13 U
MW-98	MW-98-201904	4/24/2019	0.22 J	< 0.17 U	< 0.11 U
MW-98	MW-98-201910	10/23/2019	0.38 J	< 0.17 U	< 0.11 U
MW-99	MW-99-20141022	10/22/2014	< 0.50 U	< 0.50 U	< 0.50 U
MW-99	MW-99-201501	1/15/2015	< 0.50 U	< 0.50 U	< 0.50 U
MW-99	MW-99-201504	4/16/2015	< 0.50 U	< 0.50 U	< 0.50
MW-99	MW-99-201507	7/23/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-99	MW-99-201510	10/6/2015	< 0.17 U	< 0.080 U	< 0.13 U
MW-99	MW-99-201601	1/11/2016	0.21 J	< 0.080 U	< 0.13 U
MW-99	MW-99-201605	5/3/2016	< 0.17 U	< 0.080 U	< 0.13 U
MW-99	MW-99-201704	4/26/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-99	MW-99-201710	10/24/2017	< 0.17 U	< 0.080 U	< 0.13 U
MW-99	MW-99-201804	4/18/2018	1.3	0.12 J	< 0.13 U
MW-99	MW-99-201811	11/13/2018	8.1	0.64 J	< 0.13 U
MW-99	MW-99-201904	4/24/2019	23.6	1.6	< 0.11 U
MW-99	MW-99-201910	10/23/2019	72.6	4.8	< 0.11 U
NE-Manhole-SW	NE-MANHOLE-SW-20140818	8/18/2014	< 0.50 U	< 0.50 U	< 0.50 U
RW-69	RW-69-20090115	1/15/2009	170	7.1	< 5 U
RW-69	RW-69-20090424	4/24/2009	62	< 5 U	< 5 U
RW-69	RW-69-20090527	5/27/2009	290	10	< 5 U

RAMBOLL

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
RW-69	RW-69-20091221-FS	12/21/2009	200	6.3	< 1.6 U
RW-69	RW-69-20100513	5/13/2010	170	8.2	< 5 U
RW-69	RW-69-20101104	11/4/2010	320	9	< 5 U
RW-69	RW-69-20110303-FS	3/3/2011	200	7.1	< 0.85 U
RW-69	RW-69-20110523-FS	5/23/2011	130	3.0 J	
RW-69	RW-69-20111026	10/26/2011	210	5.7	< 5 U
RW-69	RW-69-20120418	4/18/2012	150	3.6 J	< 5 U
RW-69	RW-69-20121018	10/18/2012	180	5.0	< 0.11 U
RW-69	RW-69-20130423	4/23/2013	190	2.8 J	< 0.11 U
RW-69	RW-69-101613	10/16/2013	190	7.7	< 0.11 U
RW-69	RW-69-201403	3/7/2014	105	3.5 J	0.41 J
RW-69	RW-69-201405	5/13/2014	110	3.3 J	0.30 J
RW-69	RW-69-201407	7/29/2014	164	5.6	0.50 J
RW-69	RW-69-201410	10/14/2014	173	6.9	< 0.50 U
RW-69	RW-69-201501	1/14/2015	115	4.7	< 0.50 U
RW-69	RW-69-201504	4/14/2015	113	4.5	< 0.13 U
RW-69	RW-69-201507	7/21/2015	135	5.5	0.31 J
RW-69	RW-69-201510	10/6/2015	184	6.7	0.24 J
RW-69	RW-69-201601	1/12/2016	128	4.6	< 0.13 U
RW-69	RW-69-201605	5/3/2016	91.1	4.1	< 0.13 U
RW-69	RW-69-201611	11/9/2016	185	6.2	0.26 J
RW-69	RW-69-201704	4/27/2017	158	4.6	< 0.13 U
RW-69	RW-69-201710	10/24/2017	159	5.2	0.21 J
RW-69	RW-69-201804	4/18/2018	110	5.0	0.19 J
RW-69	RW-69-201811	11/14/2018	141 J	5.4	0.53 J
RW-69	RW-69-201904	4/24/2019	99.9	4.4	0.16 J
RW-69	RW-69-201910	10/23/2019	150	5.6	0.53 J
TMW-01	TMW-01-062613-GW	6/26/2013	< 1.6 U	< 0.56 U	
TMW-01	TMW-01-062613-LL	6/26/2013			< 0.11 U
TMW-02	TMW-02-062613-GW	6/26/2013	< 1.6 U	< 0.56 U	
TMW-02	TMW-02-062613-LL	6/26/2013			< 0.11 U
TMW-04	TMW-04-062613-GW	6/26/2013	< 1.6 U	< 0.56 U	
TMW-04	TMW-04-062613-LL	6/26/2013			< 0.11 U
TMW-05	TMW-05-062613-GW	6/26/2013	< 1.6 U	< 0.56 U	
TMW-05	TMW-05-062613-LL	6/26/2013			< 0.11 U
TMW-10	TMW-10-GW-091815	9/18/2015	190	1.9	< 0.13 U
TMW-10	TMW-10-201510	10/8/2015	102	1.1	< 0.13 U
TMW-10	TMW-10-201511	11/4/2015	120	0.72 J	< 0.13 U
TMW-10	TMW-10-201512	12/1/2015	114	0.88 J	< 0.13 U
TMW-10	TMW-10-201601	1/8/2016	103	3.1	< 0.13 U
TMW-10	TMW-10-201605	5/4/2016	123	12.9	< 0.13 U
TMW-10	TMW-10-201611	11/8/2016	95.4	4.4	< 0.13 U
TMW-10	TMW-10-201704	4/27/2017	96.2	5.1	0.32 J
TMW-10	DUP-05-201704	4/27/2017	102	5.9	0.38 J
TMW-10	TMW-10-201710	10/24/2017	89.5	4.5	0.91 J
TMW-10	TMW-10-201804	4/18/2018	85.0	5.2	0.46 J
TMW-10	TMW-10-201807	7/31/2018	91.1	5.9	0.66 J
TMW-10	TMW-10-201811	11/13/2018	14.3	15.0	6.2
TMW-10	TMW-10-201904	4/25/2019	11.5	2.4	3.7
TMW-10	TMW-10-201910	10/22/2019	8.6	1.4	2.4
TMW-11	TMW-11-GW-091815	9/18/2015	31.1	0.15 J	< 0.13 U
TMW-11	TMW-11-201510	10/8/2015	14.3	< 0.080 U	< 0.13 U
TMW-11	TMW-11-201511	11/4/2015	6.3	2.5	< 0.13 U
TMW-11	TMW-11-201512	12/1/2015	0.63 J	5.8	< 0.13 U
TMW-11	TMW-11-201601	1/8/2016	3.1	5.3	< 0.13 U
TMW-11	TMW-11-201605	5/3/2016	8.1	3.6	< 0.13 U
TMW-11	TMW-11-201611	11/8/2016	1.2	4.7	< 0.13 U
TMW-11	TMW-11-201704	4/27/2017	0.85 J	3.6	0.36 J
TMW-11	TMW-11-201710	10/23/2017	0.62 J	1.7	0.70 J
TMW-11	TMW-11-201804	4/17/2018	0.67 J	1.2	0.59 J
TMW-11	TMW-11-201811	11/13/2018	0.40 J	0.73 J	0.46 J
TMW-11	TMW-11-201904	4/25/2019	1.4	0.78 J	0.64 J
TMW-11	TMW-11-201910	10/22/2019	0.70 J	0.79 J	0.29 J
TMW-12	TMW-12-201704	4/27/2017	463	12.0	0.34 J
TMW-12	TMW-12-201804	4/18/2018	563	12.0	0.37 J
TMW-12	TMW-12-201811	11/15/2018	429	13.7	0.41 J
TMW-12	DUP-04-201811	11/15/2018	470	12.8	0.37 J
TMW-12	TMW-12-201904	4/24/2019	470	11.9	0.37 J
TMW-12	TMW-12-201910	10/23/2019	471	10.1	0.26 J
TMW-13	TMW-13-201704	4/27/2017	193	4.2	0.15 J
TMW-14	TMW-14-201704	4/27/2017	10.9	0.29 J	< 0.13 U
TMW-14	TMW-14-201804	4/18/2018	2.1	< 0.080 U	< 0.13 U
TMW-14	DUP-03-201804	4/18/2018	2.0	< 0.080 U	< 0.13 U
TMW-14	TMW-14-201811	11/14/2018	0.24 J	< 0.080 U	< 0.13 U
TMW-14	TMW-14-201904	4/24/2019	10.1 J+	0.39 J	< 0.11 U
TMW-14	TMW-14-201910	10/23/2019	2.6	0.60 J	< 0.11 U
TMW-15	TMW-15-201704	4/26/2017	5.3	0.41 J	< 0.13 U
TMW-16	TMW-16-201704	4/25/2017	682	8.4	0.57 J
TMW-16	TMW-16-201710	10/24/2017	956	10.4	< 0.13 U
TMW-16	TMW-16-20180402	4/2/2018	985	11.5	0.78 J
TMW-16	TMW-16-201804	4/19/2018	1030	13.6	0.90 J
TMW-16	TMW-16-201807	8/2/2018	988	15.1	0.81 J
TMW-16	TMW-16-201811	11/16/2018	368	29.1	1.6 J
TMW-16	TMW-16-201904	4/25/2019	23.8	236	1.4

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
TMW-16	TMW-16-201910	10/23/2019	6.0	8.8	2.4
TMW-17	TMW-17-201704	4/25/2017	154	7.6	0.37 J
TMW-18	TMW-18-201704	4/25/2017	0.60 J	0.72 J	< 0.13 U
TMW-188	MW-188-GW-091415	9/14/2015	2.0 J	2.4 J	< 0.13 U
TMW-189	MW-189-GW-091515	9/15/2015	2.6	4.7	0.22 J
TMW-19	TMW-19-201704	4/25/2017	< 0.17 U	< 0.080 U	< 0.13 U
TMW-19	DUP-01-201704	4/25/2017	0.30 J	< 0.080 U	< 0.13 U
TMW-19	TMW-19-201710	10/24/2017	< 0.17 U	< 0.080 U	< 0.13 U
TMW-19	TMW-19-201804	4/19/2018	0.41 J	0.32 J	< 0.13 U
TMW-19	TMW-19-201811	11/14/2018	0.97 J	0.69 J	< 0.13 U
TMW-19	TMW-19-201904	4/24/2019	5.6	1.1	< 0.11 U
TMW-19	TMW-19-201910	10/23/2019	13.6	1.6	< 0.11 U
TMW-19	DUP-06-201910	10/23/2019	12.2	1.5	< 0.11 U
TMW-20	TMW-20-201710	10/10/2017	< 0.17 U	< 0.080 U	< 0.13 U
TMW-20	TMW-20-20171023	10/23/2017	< 0.17 U	< 0.080 U	< 0.13 U
TMW-20	FD-01-201710	10/23/2017	< 0.17 U	< 0.080 U	< 0.13 U
TMW-20	TMW-20-201804	4/17/2018	< 0.17 U	< 0.080 U	< 0.13 U
TMW-20	TMW-20-201811	11/13/2018	< 0.17 U	< 0.080 U	< 0.13 U
TMW-20	DUP-01-201811	11/13/2018	< 0.17 U	< 0.080 U	< 0.13 U
TMW-20	TMW-20-201904	4/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
TMW-20	TMW-20-201910	10/22/2019	< 0.17 U	< 0.17 U	< 0.11 U
TMW-21	TMW-21-201710	10/10/2017	375	8.7	0.16 J
TMW-21	TMW-21-20171024	10/24/2017	461	9.2	< 0.13 U
TMW-21	TMW-21-201804	4/18/2018	340	7.4	< 0.13 U
TMW-21	TMW-21-20180419	4/19/2018	420	10.0	0.21 J
TMW-21	TMW-21-201807	7/31/2018	564	12.6	0.31 J
TMW-21	TMW-21-201811	11/15/2018	22.1 J	86.3 J	0.52 J
TMW-21	TMW-21-201904	4/25/2019	47.0	27.7	5.9
TMW-21	TMW-21-201910	10/22/2019	21.8	13.5	1.9
TMW-22	TMW-22-20171013	10/13/2017	636	13.9	< 0.13 U
TMW-22	TMW-22-201710	10/24/2017	486	9.8	< 0.13 U
TMW-22	TMW-22-201804	4/18/2018	224	20.1	< 0.13 U
TMW-22	TMW-22-201807	8/1/2018	460	28.7	0.20 J
TMW-22R	TMW-22R-201811	11/15/2018	347	71.2	0.16 J
TMW-22R	TMW-22R-201904	4/25/2019	202	184	8.3
TMW-22R	TMW-22R-201910	10/23/2019	146	126	7.9
TMW-23	TMW-23-20171013	10/13/2017	131	2.0	< 0.13 U
TMW-23	TMW-23-201710	10/25/2017	62.2	0.89 J	< 0.13 U
TMW-23	TMW-23-201804	4/18/2018	125	1.5	< 0.13 U
TMW-23	TMW-23-201811	11/16/2018	110	1.2	< 0.13 U
TMW-23	DUP-03-201811	11/16/2018	116	1.6	< 0.13 U
TMW-23	TMW-23-201904	4/24/2019	190	2.3	< 0.11 U
TMW-23	TMW-23-2019110	10/23/2019	189	2.5	< 0.11 U
TMW-24	TMW-24-201710	10/10/2017	309	7.7	0.18 J
TMW-24	TMW-24-20171024	10/24/2017	385	8.1	< 0.13 U
TMW-24	TMW-24-201804	4/18/2018	601	11.9	0.25 J
TMW-24	TMW-24-201811	11/15/2018	540	10.9	0.25 J
TMW-24	TMW-24-201904	4/24/2019	565	12.3	0.47 J
TMW-24	TMW-24-2019110	10/23/2019	575	11.8	0.20 J
TMW-25	TMW-25-201710	10/11/2017	140	8.8	0.19 J
TMW-25	TMW-25-20171025	10/25/2017	245	11.2	0.41 J
TMW-25	TMW-25-201804	4/19/2018	240	10.9	0.29 J
TMW-25	TMW-25-201811	11/15/2018	58.6 J	11.0 J	< 0.13 UJ
TMW-25	TMW-25-201904	4/25/2019	38.6	47.7	0.39 J
TMW-25	TMW-25-201910	10/24/2019	23.6	39.9	0.41 J
TMW-26	TMW-26-201710	10/11/2017	185	4.2	0.23 J
TMW-26	TMW-26-20171024	10/24/2017	36.3	< 0.080 U	< 0.13 U
TMW-26	TMW-26-20180402	4/2/2018	35.4	0.98 J	< 0.13 U
TMW-26	TMW-26-201804	4/19/2018	28.3	1.1	< 0.13 U
TMW-26	TMW-26-201807	8/2/2018	96.1	2.5	0.23 J
TMW-26	TMW-26-201811	11/15/2018	54.4 J	11.1 J	< 0.13 UJ
TMW-26	TMW-26-201904	4/25/2019	128	46.3	0.29 J
TMW-26	TMW-26-201910	10/23/2019	42.9	53.3	2.9
TMW-27	TMW-27-201710	10/11/2017	0.20 J	< 0.080 U	< 0.13 U
TMW-27	TMW-27-20171025	10/25/2017	< 0.17 U	< 0.080 U	< 0.13 U
TMW-27	TMW-27-20180402	4/2/2018	< 0.17 U	< 0.080 U	< 0.13 U
TMW-27	TMW-27-201804	4/18/2018	< 0.17 U	< 0.080 U	< 0.13 U
TMW-27	TMW-27-201811	11/14/2018	< 0.17 U	< 0.080 U	< 0.13 U
TMW-27	TMW-27-201904	4/24/2019	< 0.17 U	< 0.17 U	< 0.11 U
TMW-27	TMW-27-201910	10/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
TMW-28	TMW-28-20171010	10/12/2017	< 0.17 U	< 0.080 U	< 0.13 U
TMW-29	TMW-29-20171010	10/12/2017	< 0.17 U	< 0.080 U	< 0.13 U
TMW-29	TMW-29-201710	10/23/2017	< 0.17 U	< 0.080 U	< 0.13 U
TMW-29	TMW-29-201804	4/17/2018	< 0.17 U	< 0.080 U	< 0.13 U
TMW-29	TMW-29-201811	11/13/2018	< 0.17 U	< 0.080 U	< 0.13 U
TMW-29	TMW-29-201904	4/23/2019	< 0.17 U	< 0.17 U	< 0.11 U
TMW-29	TMW-29-201910	10/22/2019	< 0.17 U	< 0.17 U	< 0.11 U
TMW-30	TMW-30-20171013	10/13/2017	< 0.17 U	< 0.080 U	< 0.13 U
TMW-30	TMW-30-201710	10/24/2017	0.55 J	< 0.080 U	< 0.13 U
TMW-30	TMW-30-20180402	4/2/2018	1.5	0.49 J	< 0.13 U
TMW-30	TMW-30-201811	11/14/2018	< 0.17	< 0.080 U	< 0.13 U
TMW-30	TMW-30-201910	10/23/2019	2.5	2.3	0.12 J
TMW-31	TMW-31-20180403	4/3/2018	< 0.17 U	< 0.080 U	< 0.13 U
TMW-32	TMW-32-20180403	4/3/2018	65.8	3.3	< 0.13 U

TABLE 7A
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
MONITORING WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
TMW-32	TMW-32-201804	4/18/2018	101	3.7	< 0.13 U
TMW-32	TMW-32-201807	8/3/2018	83.5	3.4	< 0.13 U
TMW-32	TMW-32-201811	11/16/2018	16.0	1.9	0.35 J
TMW-32	TMW-32-201904	4/25/2019	12.5	36.4	0.13 J
TMW-32	TMW-32-201910	10/24/2019	29.2	21.0	0.13 J
TMW-33	TMW-33-20180403	4/3/2018	55.8	2.3	0.17 J
TMW-33	TMW-33-SHALLOW-20180405	4/5/2018	156	3.0	0.26 J
TMW-34	TMW-34-201811	11/14/2018	7.4	1.5	< 0.13 U
TMW-34	TMW-34-201904	4/25/2019	10.3	2.2	< 0.11 U
TMW-34	TMW-34-201910	10/24/2019	17.6	6.9	< 0.11 U
TMW-35	TMW-35-201910	10/22/2019	< 0.17 U	< 0.17 U	< 0.11 U
TMW-36	TMW-36-201910	10/24/2019	389	8.4	0.31 J

TABLE 7B
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
ISCO INJECTION WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
IW-101	IW-101-20140323	3/23/2014	314	7.5	0.21 J
IW-101	IW-101-20140430	4/30/2014	794	18.9	< 0.13 U
IW-101	IW-101-20140523	5/23/2014	509	11.2	< 0.13 U
IW-101	20140708-GW-IW-101	7/8/2014	150	4.5 J	< 0.50 U
IW-101	IW-101-201409	9/12/2014	139	3.4 J	< 0.50 U
IW-101	IW-101-201601	1/7/2016	42.9	1.1	< 0.13 U
IW-101	IW-101-201605	5/5/2016	20.3	0.54 J	< 0.13 U
IW-102	IW-102-20140323	3/23/2014	685	14.6	0.45 J
IW-102	IW-102-20140430	4/30/2014	239	5.4	< 0.13 U
IW-103	IW-103-20140323	3/23/2014	692	13.1	0.76 J
IW-103	IW-103-20140430	4/30/2014	729	22.8	0.83 J
IW-104	IW-104-20140323	3/23/2014	637	13.5	0.69 J
IW-104	IW-104-20140430	4/30/2014	527	12.6	< 0.13 U
IW-105	IW-105-20140323	3/23/2014	901	14.4	0.54 J
IW-105	IW-105-20140430	4/30/2014	185	4.9 J	< 0.13 U
IW-106	IW-106-20140323	3/23/2014	198	4.2 J	< 0.13 U
IW-106	IW-106-20140430	4/30/2014	163	6.8	< 0.13 U
IW-106	IW-106-20140523	5/23/2014	132	2.6 J	< 0.13 U
IW-107	IW-107-20140323	3/23/2014	198	4.3 J	0.14 J
IW-107	IW-107-20140430	4/30/2014	110	3.3 J	< 0.13 U
IW-108	IW-108-20140323	3/23/2014	1280	27.8	0.83 J
IW-108	IW-108-20140429	4/29/2014	72.1	4.1 J	< 0.13 U
IW-108	IW-108-20140523	5/23/2014	59.0	1.5 J	< 0.13 U
IW-109	IW-109-20140323	3/23/2014	362	7.4	0.23 J
IW-109	IW-109-20140429	4/29/2014	91.2	2.5 J	< 0.13 U
IW-109	IW-109-20140523	5/23/2014	110	1.9 J	< 0.13 U
IW-110	IW-110-20140323	3/23/2014	464	9.8	0.5 J
IW-110	IW-110	4/16/2014	397	9.4	0.17 J
IW-110	IW-110-20140430	4/30/2014	268	8.2	0.33 J
IW-111	IW-111-20140323	3/23/2014	704	14	0.63 J
IW-111	IW-111-20140429	4/29/2014	260	6.4	< 0.13 U
IW-112	IW-112-20140323	3/23/2014	219	4.9 J	0.23 J
IW-112	IW-112	4/16/2014	200	4.8 J	< 0.13 U
IW-112	IW-112-20140430	4/30/2014	104	3.8 J	< 0.13 U
IW-113	IW-113-20140324	3/24/2014	510	11.1	0.43 J
IW-113	IW-113	4/14/2014	435	8.7	< 0.13 U
IW-114	IW-114-20140324	3/24/2014	397	9.7	0.25 J
IW-114	IW-114	4/14/2014	336	8.1	< 0.13 U
IW-115	IW-115-20140324	3/24/2014	622	14	0.25 J
IW-115	IW-115-20140407	4/7/2014	455	9.1 J	< 0.13 U
IW-115	IW-115	4/14/2014	449	9.3	< 0.13 U
IW-115	IW-115-201405	5/28/2014	504	11.2	0.27 J
IW-115	20140709-GW-IW-115	7/9/2014	352	7.4	< 0.50 U
IW-115	IW-115-201409	9/11/2014	355	8.0	< 0.50 U
IW-115	IW-115-201601	1/11/2016	169	3.6	< 0.13 U
IW-115	IW-115-201605	5/4/2016	51.9	1.1	< 0.13 U
IW-116	IW-116-20140324	3/24/2014	486	10.9	0.33 J
IW-116	IW-116	4/15/2014	546	10.8	0.34 J
IW-117	IW-117-20140324	3/24/2014	384	9.1	0.23 J
IW-117	IW-117	4/15/2014	384	9.9	< 0.13 U
IW-118	IW-118-20140324	3/24/2014	496	11.6	0.34 J
IW-118	IW-118	4/15/2014	395	9.7	< 0.13 U
IW-118	IW-118-201405	5/28/2014	437	9.3	< 0.13 U
IW-119	IW-119-20140324	3/24/2014	524	11.5	0.33 J
IW-119	IW-119-20140407	4/7/2014	478	9.1 J	< 0.13 U
IW-119	IW-119	4/15/2014	509	11.3	< 0.13 U
IW-120	IW-120-20140324	3/24/2014	289	7.9	0.14 J
IW-120	IW-120	4/15/2014	390	10.2	< 0.13 U
IW-121	IW-121-20140324	3/24/2014	402	8.9 J	< 0.65 U

TABLE 7B
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
ISCO INJECTION WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
IW-121	IW-121	4/15/2014	445	11.7	< 0.13 U
IW-122	IW-122-20140324	3/24/2014	473	11.5	0.29 J
IW-122	IW-122	4/15/2014	384	10.0	< 0.13 U
IW-123	IW-123-20140324	3/24/2014	532	12.2	0.40 J
IW-123	IW-123-20140407	4/7/2014	539	8.8 J	< 0.13 U
IW-123	IW-123	4/15/2014	488	10.0	< 0.13 U
IW-124	IW-124-20140324	3/24/2014	455	6.8 J	< 0.65 U
IW-124	IW-124	4/15/2014	448	8.7	0.26 J
IW-125	IW-125-20140325	3/25/2014	2140	207	3.1
IW-125	IW-125-201405	5/29/2014	17.1	2.9 J	< 0.13 U
IW-125	IW-125-201409	9/11/2014	7.3	1.0 J	< 0.50 U
IW-126	IW-126-20140325	3/25/2014	2020	197	10.4
IW-126	IW-126-201405	5/29/2014	787	59.1	< 0.13 U
IW-127	IW-127-20140324	3/24/2014	3700	219 J	7.6
IW-127	IW-127-201405	5/29/2014	639	34.7	< 0.13 U
IW-127	IW-127-201409	9/11/2014	1020	38.5	2.6
IW-127	IW-127-20141204	12/4/2014	182	7.2	< 0.50 U
IW-128	IW-128-20140325	3/25/2014	2980	178	11.7
IW-128	IW-128-20140429	4/29/2014	1250	68.4	4.9
IW-128	IW-128-201405	5/29/2014	1190	62.7	< 0.13 U
IW-129	IW-129-20140325	3/25/2014	2540	192	< 0.13 U
IW-129	IW-129-201405	5/29/2014	25.8	1.8 J	< 0.13 U
IW-130	IW-130-20140323	3/23/2014	358	7.6 J	< 0.65 U
IW-130	IW-130-20140523	5/23/2014	75.5	0.78 J	< 0.13 U
IW-131	IW-131-20140324	3/24/2014	526	11.5	0.35 J
IW-131	IW-131-20140430	4/30/2014	318	8.5	0.31 J
IW-131	IW-131-201405	5/28/2014	443	8.8	0.30 J
IW-132	IW-132-20141023	10/23/2014	714	3.5 J	< 0.50 U
IW-132	IW-132-201910	10/24/2019	292	0.57 J	< 0.11 U
IW-134	IW-134-201910	10/24/2019	1090	9.9	< 0.11 U
IW-135	IW-135-20141023	10/23/2014	3840	43.3	2.0
IW-141	IW-141-20141023	10/23/2014	368000	< 0.50 U	82.6
IW-141	IW-141-20141205	12/5/2014	46300	232 E	31.0
IW-143	IW-143-20141023	10/23/2014	13100	44.8	2.5
IW-147	IW-147-20141023	10/23/2014	199000	1640 J	< 0.50 U
IW-147	IW-147-20141205	12/5/2014	91600	1420 J	176
IW-147	IW-147-201910	10/24/2019	95800	5420	376 J
IW-152	IW-152-20141022	10/22/2014	17600	224 J	8.2
IW-152	IW-152-20141204	12/4/2014	< 0.50 U	< 0.50 U	< 0.50 U
IW-153	IW-153-20141023	10/23/2014	293	85.3	12.3
IW-153	IW-153-20141204	12/4/2014	1.6 J	< 0.50 U	< 0.50 U
IW-155	IW-155-20141023	10/23/2014	14600	36.4	5.8
IW-157	IW-157-20141023	10/23/2014	74200	712 J	195
IW-157	IW-157-20141205	12/5/2014	31700	391 E	66.8
IW-169	IW-169-20141022	10/22/2014	163	1.7 J	< 0.50 U
IW-72	IW-72-20090116	1/16/2009	27	< 5 U	< 5 U
IW-72	IW-72-20090423	4/23/2009	40	< 5 U	< 5 U
IW-72	IW-72-20090508	5/8/2009	40	< 5 U	< 5 U
IW-72	IW-72-20110303-FS	3/3/2011	3.1 J	< 0.56 U	< 0.85 U
IW-72	IW-72-20110519-FS	5/19/2011	< 1.6 U	< 0.56 U	
IW-72	IW-72-20111024	10/24/2011	< 5 U	< 5 U	< 5 U
IW-72	IW-72-20120417	4/17/2012	3.8 J	< 5 U	< 5 U
IW-72	IW-72-20121019	10/19/2012	< 7.9 U	< 2.8 U	< 0.55 U
IW-72	IW-72-20130424	4/24/2013	< 1.6 U	< 0.56 U	< 0.11 U
IW-72	IW-72-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U
IW-72	IW-72-201403	3/6/2014	< 0.17 U	< 0.080 U	< 0.13 U
IW-72	IW-72-201405	5/12/2014	< 0.17 U	< 0.080 U	< 0.13 U
IW-72	IW-72-201407	7/29/2014	< 0.50 U	< 0.50 U	< 0.50 U
IW-72	IW-72-201410	10/13/2014	< 0.50 U	< 0.50 U	< 0.50 U

TABLE 7B
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
ISCO INJECTION WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
IW-72	IW-72-201501	1/12/2015	< 0.50 U	< 0.50 U	< 0.50 U
IW-72	IW-72-201504	4/15/2015	< 0.17 U	< 0.080 U	< 0.13 U
IW-72	IW-72-201507	7/20/2015	0.48 J	< 0.080 U	< 0.13 U
IW-72	IW-72-201510	10/6/2015	0.74 J	< 0.080 U	< 0.13 U
IW-72	IW-72-201601	1/12/2016	1.4	< 0.080 U	< 0.13 U
IW-72	IW-72-201605	5/3/2016	1.8	< 0.080 U	< 0.13 U
IW-73	IW-73-20090423	4/23/2009	400	16	< 5 U
IW-73	IW-73-20110519-FS	5/19/2011	160	3.6 J	
IW-73	IW-73-20111025	10/25/2011	250	4.9 J	< 5 U
IW-73	IW-73-20120417	4/17/2012	180	5.8	< 5 U
IW-73	IW-73-20121020	10/20/2012	170	7.0	< 0.11 U
IW-73	IW-73-20130424	4/24/2013	200	6.5	< 0.11 U
IW-73	IW-73-20130424-FD	4/24/2013	180	6.4	< 0.11 U
IW-73	IW-73-101513	10/15/2013	140	47	6.3
IW-73	IW-73-201403	3/7/2014	183	20.9	4.6
IW-73	IW-73-201405	5/14/2014	31.9	0.81 J	< 0.13 U
IW-73	IW-73-201407	7/29/2014	138	24.3	26.1
IW-73	IW-73-201410	10/14/2014	8.5	0.84 J	1.1 J
IW-73	IW-73-201501	1/14/2015	70.8	6.3	4.1
IW-73	IW-73-201504	4/15/2015	96.8	6.8	1.6
IW-73	IW-73-201507	7/21/2015	143	9.0	1.5
IW-73	IW-73-201510	10/6/2015	154	7.8	0.59 J
IW-73	IW-73-201601	1/12/2016	103	4.3	0.24 J
IW-73	IW-73-201605	5/4/2016	125	4.9	0.35 J
IW-73	IW-73-201611	11/9/2016	113	2.5	0.16 J
IW-73	DUP-01-201611	11/9/2016	116	2.8	0.21 J
IW-73	IW-73-201704	4/28/2017	108	3.8	< 0.13 U
IW-73	IW-73-201710	10/24/2017	126	3.3	< 0.13 U
IW-73	IW-73-201804	4/18/2018	176	4.0	< 0.13 U
IW-73	IW-73-201811	11/14/2018	208	7.3	< 0.13 U
IW-73	IW-73-201904	4/24/2019	216	8.0	0.35 J
IW-73	IW-73-201910	11/20/2019	215	7.0	0.16 J
IW-74	IW-74-20090423	4/23/2009	260	8.1	< 5 U
IW-74	IW-74-20110519-FS	5/19/2011	74	< 0.56 U	
IW-74	IW-74-20111025	10/25/2011	150	3.1 J	< 5 U
IW-74	IW-74-20120417	4/17/2012	130	2.4 J	< 5 U
IW-74	IW-74-20121020	10/20/2012	160	3.4 J	< 0.11 U
IW-74	IW-74-20130424	4/24/2013	160	4.8 J	< 0.11 U
IW-74	IW-74-101513	10/15/2013	190	5.7	< 0.11 U
IW-74	IW-74-201403	3/7/2014	135	4.3 J	1.5 J
IW-74	IW-74-201403-FD	3/7/2014	151	4.5 J	2.2
IW-74	IW-74-201405	5/14/2014	169	4.3 J	0.80 J
IW-74	IW-74-201407	7/29/2014	177	5.8	0.91 J
IW-74	IW-74-201410	10/14/2014	144	3.3 J	< 0.50 U
IW-74	DUP-01-201410	10/14/2014	143	3.3 J	< 0.50 U
IW-74	IW-74-201501	1/14/2015	141	3.8	< 0.50 U
IW-74	DUP-01-201501	1/14/2015	139	3.5	< 0.50 U
IW-74	IW-74-201504	4/15/2015	147	5.0	< 0.13 U
IW-74	DUP-05-201504	4/15/2015	153	4.8	< 0.13 U
IW-74	IW-74-201507	7/21/2015	168	4.6	1.4
IW-74	DUP-08-201507	7/21/2015	168	4.2	1.3
IW-74	IW-74-201510	10/7/2015	121	3.8	0.36 J
IW-74	DUP-10-201510	10/7/2015	122	3.8	0.33 J
IW-74	IW-74-201601	1/12/2016	135	3.2	0.17 J
IW-74	DUP-05-201601	1/12/2016	135	3.3	0.18 J
IW-74	IW-74-201605	5/4/2016	122	3.5	0.44 J
IW-74	DUP-07-201605	5/4/2016	108	3.2	0.42 J
IW-75	IW-75-20090116	1/16/2009	140	2.4 J	< 5 U
IW-75	IW-75-20111025	10/25/2011	< 5 U	< 5 U	< 5 U

TABLE 7B
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
ISCO INJECTION WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
IW-75	IW-75-20120417	4/17/2012	2.9 J	< 5 U	< 5 U
IW-75	IW-75-20121018	10/18/2012	< 7.9 U	< 2.8 U	< 0.55 U
IW-75	IW-75-101513	10/15/2013	< 1.6 U	< 0.56 U	< 0.11 U
IW-76	IW-76-20090423	4/23/2009	730	28	< 5 U
IW-76	IW-76-20090507	5/7/2009	460	28	< 5 U
IW-76	IW-76-20110304-FS	3/4/2011	380	11	< 0.85 U
IW-76	IW-76-20110523-FS	5/23/2011	460	12	
IW-76	IW-76-20111025	10/25/2011	130	2.2 J	< 5 U
IW-76	IW-76-20120417	4/17/2012	400	8.9	< 5 U
IW-76	IW-76-20121020	10/20/2012	610	16	< 0.11 U
IW-76	IW-76-20130424	4/24/2013	420	13	0.39 J
IW-76	IW-76-101513	10/15/2013	450	8.7	< 0.11 U
IW-76	IW-76-201403	3/8/2014	127	1.5 J	< 0.13 U
IW-76	IW-76-201405	5/14/2014	10.3	< 0.080 U	< 0.13 U
IW-76	IW-76-201407	7/29/2014	319	2.7 J	< 0.50
IW-76	IW-76-201410	10/15/2014	214	6.7	< 0.50 U
IW-76	IW-76-201501	1/14/2015	288	8.8	< 0.50 U
IW-76	IW-76-201504	4/15/2015	354	11.2	< 0.13 U
IW-76	IW-76-201507	7/21/2015	323	7.3	< 0.13 U
IW-76	IW-76-201510	10/6/2015	106	1.6	< 0.13 U
IW-76	IW-76-201601	1/12/2016	80.2 J	1.9	< 0.13 U
IW-76	IW-76-201605	5/4/2016	139 J	2.6	< 0.13 U
IW-77	IW-77-20090423	4/23/2009	570	20	< 5 U
IW-77	IW-77-20090507	5/7/2009	300	17	< 5 U
IW-77	IW-77-20090527	5/27/2009	250	13	< 5 U
IW-77	IW-77-20091028	10/28/2009	380	13	< 5 U
IW-77	IW-77-20091221-FS	12/21/2009	250	12	< 1.6 U
IW-77	IW-77-20100513	5/13/2010	260	11	< 5 U
IW-77	IW-77-20101105	11/5/2010	1400	41	< 5 U
IW-77	IW-77-20110304-FS	3/4/2011	430	14	< 0.85 U
IW-77	IW-77-20110523-FS	5/23/2011	440	15	
IW-77	IW-77-20111025	10/25/2011	1400	32	< 5 U
IW-77	IW-77-20120417-FD	4/17/2012	520	20	< 5 U
IW-77	IW-77-20120417	4/17/2012	510	23	< 5 U
IW-77	IW-77-20121019	10/19/2012	1000	32	0.65 J
IW-77	IW-77-20130424	4/24/2013	530	21	< 0.11 U
IW-77	IW-77-101613	10/16/2013	1000	39	1.6 J
IW-77	IW-77-20131016-FD	10/16/2013	990	39	0.49 J
IW-77	IW-77-201403	3/8/2014	546	24.4	0.22 J
IW-77	IW-77-201405	5/14/2014	1460	36.0	0.66 J
IW-77	20140709-GW-IW-77	7/9/2014	1200	21.1	< 0.50 U
IW-77	IW-77-201407	7/29/2014	1540	35.2	< 0.50 U
IW-77	IW-77-201410	10/15/2014	741	15.8	< 0.50 U
IW-77	IW-77-20141023	10/23/2014	554	11.9	< 0.50 U
IW-77	IW-77-201501	1/14/2015	201	4.8	< 0.50 U
IW-77	IW-77-201504	4/14/2015	153	2.9	< 0.13 U
IW-77	IW-77-201507	7/21/2015	130	2.4	< 0.13 U
IW-77	IW-77-201510	10/8/2015	24.3	0.54 J	< 0.13 U
IW-77	IW-77-201511	11/5/2015	95.1	1.1	< 0.13 U
IW-77	IW-77-201512	12/2/2015	87.8	1.3	< 0.13 U
IW-77	IW-77-201601	1/11/2016	95.3	1.3	< 0.13 U
IW-77	IW-77-201605	5/4/2016	101	1.7	< 0.13 U
IW-77	IW-77-201611	11/8/2016	137	2.1	< 0.13 U
IW-77	IW-77-201704	4/28/2017	113	1.8	< 0.13 U
IW-77	IW-77-201710	10/24/2017	161	2.9	< 0.13 U
IW-77	IW-77-201804	4/18/2018	181	3.6	< 0.13 U
IW-77	IW-77-201811	11/15/2018	218	5.1	< 0.13 U
IW-77	IW-77-201904	4/25/2019	188	4.1	< 0.11 U
IW-77	DUP-04-201904	4/25/2019	198	4.3	< 0.17 U

TABLE 7B
HISTORICAL SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE AND DAUGHTER-PRODUCTS
ISCO INJECTION WELLS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
IW-77	IW-77-201910	10/23/2019	180	6.8	< 0.11 U
IW-78	IW-78-20111025	10/25/2011	350	12	< 5 U
IW-78	IW-78-20120418	4/18/2012	120	2.3 J	< 5 U
IW-78	IW-78-20121020	10/20/2012	310	8.7	< 0.11 U
IW-78	IW-78-20130424	4/24/2013	7.0	< 0.56 U	< 0.11 U
IW-78	IW-78-101713	10/17/2013	190	4.6 J	< 0.11 U
IW-78	IW-78-201405	5/28/2014	255	6.2	< 0.13 U
IW-78	IW-78-201409	9/11/2014	39.6	1.2 J	< 0.50 U
IW-78	IW-78-201601	1/11/2016	1.5	< 0.080 U	< 0.13 U
IW-78	IW-78-201605	5/3/2016	1.3	< 0.080 U	< 0.13 U
IW-78	IW-78-201611	11/8/2016	2.6	< 0.080 U	< 0.13 U
IW-78	IW-78-201710	10/25/2017	7.0	0.16 J	< 0.13 U
IW-78	IW-78-201811	11/15/2018	0.74 J	< 0.080 U	< 0.13 U
IW-78	IW-78-201910	10/23/2019	2.4	< 0.17 U	< 0.11 U
IW-79	IW-79-20111025	10/25/2011	570	13	< 5 U
IW-79	IW-79-20120417	4/17/2012	430	2.1 J	< 5 U
IW-79	IW-79-20121020	10/20/2012	670	20	0.45 J
IW-79	IW-79-20121020-FD	10/20/2012	480	16	< 0.11 U
IW-79	IW-79-20130424	4/24/2013	420	9.0	< 0.11 U
IW-79	IW-79-101713	10/17/2013	440	12	< 0.11 U
IW-79	IW-79-201405	5/28/2014	426	6.9	< 0.13 U
IW-79	IW-79-201409	9/11/2014	105	1.8 J	< 0.50 U
IW-79	IW-79-201601	1/11/2016	70.0	1.4	< 0.13 U
IW-79	IW-79-201605	5/4/2016	55.0	1.0	< 0.13 U
IW-80	IW-80-20090423	4/23/2009	170	4 J	< 5 U
IW-80	IW-80-20090507	5/7/2009	69	< 5 U	< 5 U
IW-80	IW-80-20110519-FS	5/19/2011	27	< 0.56 U	
IW-80	IW-80-20111025	10/25/2011	9.7	< 5 U	< 5 U
IW-80	IW-80-20120417	4/17/2012	55	2.2 J	< 5 U
IW-80	IW-80-20121019	10/19/2012	48	< 0.56 U	< 0.11 U
IW-80	IW-80-20130424	4/24/2013	40	< 0.56 U	< 0.11 U
IW-80	IW-80-101713	10/17/2013	58	2.4 J	< 0.11 U
IW-80	IW-80-20131017-FD	10/17/2013	62	2.4 J	< 0.11 U
IW-80	IW-80-201403	3/8/2014	79.1 J	2.7 J	< 0.13 U
IW-80	IW-80-201405	5/13/2014	24.2	< 0.080 U	< 0.13 U
IW-80	IW-80-201407	7/30/2014	25.6	0.85 J	< 0.50 U
IW-80	IW-80-201410	10/14/2014	11.8	< 0.50 U	< 0.50 U
IW-80	IW-80-201501	1/13/2015	7.1	< 0.50 U	< 0.50 U
IW-80	IW-80-201504	4/14/2015	9.2	< 0.080 U	< 0.13 U
IW-80	IW-80-201507	7/21/2015	12.5	0.39 J	< 0.13 U
IW-80	IW-80-201510	10/6/2015	10.6	0.37 J	< 0.13 U
IW-80	IW-80-201511	11/5/2015	11.0	< 0.080 U	< 0.13 U
IW-80	IW-80-201512	12/2/2015	9.0	0.35 J	< 0.13 U
IW-80	IW-80-201601	1/7/2016	4.2	< 0.080 U	< 0.13 U
IW-80	IW-80-201605	5/3/2016	4.3	< 0.080 U	< 0.13 U

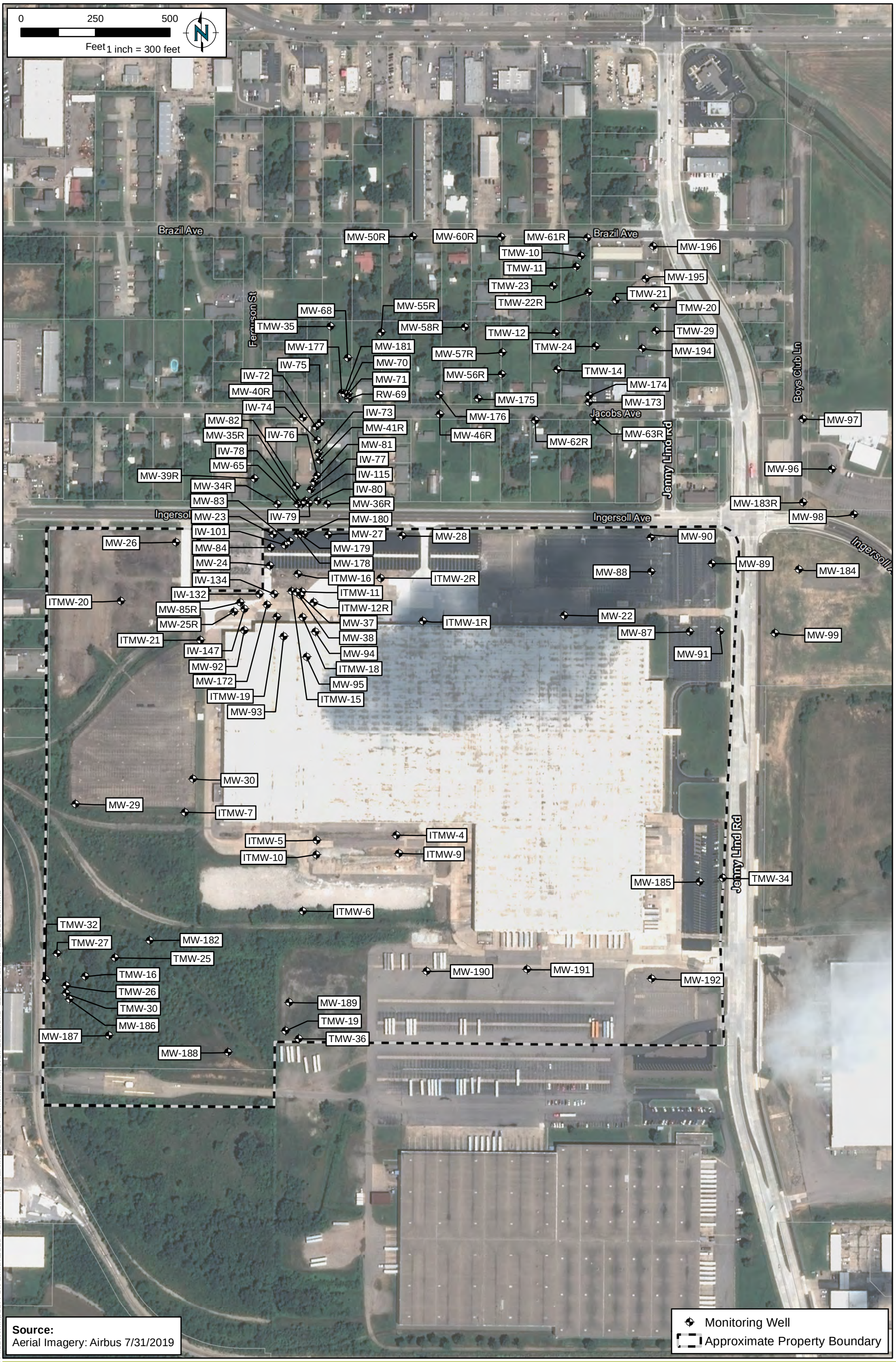
TABLE 8
SUMMARY OF STATISTICAL TEMPORAL TREND ANALYSIS (2009 - 2019)
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Start Date	End Date	Number of Samples	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
Northern Plume Wells						
MW-24	4/27/2009	10/23/2019	22	Decreasing	Decreasing	<PQL
MW-27	5/12/2010	10/24/2019	21	No Trend	<PQL	ND
MW-28	10/29/2009	10/23/2019	23	Decreasing	ND	ND
MW-39/MW-39R	4/24/2009	10/22/2019	25	No Trend	ND	ND
MW-40/MW-40R	4/24/2009	10/22/2019	28	<PQL	<PQL	ND
MW-46R	4/25/2009	10/23/2019	31	Stable	Increasing	Increasing
MW-50/MW-50R	4/24/2009	10/23/2019	25	Increasing	ND	ND
MW-55/MW-55R	4/24/2009	10/23/2019	19	Increasing	Increasing	<PQL
MW-56/MW-56R	4/24/2009	10/23/2019	22	Increasing	Increasing	<PQL
MW-57/MW-57R	4/24/2009	10/23/2019	22	Increasing	Increasing	<PQL
MW-58/MW-58R	4/25/2009	10/23/2019	24	Decreasing	Stable	Stable
MW-60/MW-60R	4/24/2009	10/23/2019	25	No Trend	ND	ND
MW-61/MW-61R	4/24/2009	10/23/2019	25	Increasing	Increasing	ND
MW-62/MW-62R	4/24/2009	10/22/2019	23	No Trend	ND	ND
MW-63/MW-63R	4/24/2009	10/22/2019	25	Decreasing	Increasing	<PQL
MW-68	1/15/2009	10/22/2019	25	No Trend	ND	ND
RW-69	1/15/2009	10/23/2019	30	Decreasing	Stable	<PQL
IW-73	4/23/2009	11/20/2019	24	Stable	No Trend	No Trend
IW-77	4/23/2009	10/23/2019	33	Decreasing	Decreasing	<PQL
IW-78	10/25/2011	10/23/2019	13	Decreasing	Decreasing	ND
MW-82	5/28/2014	10/23/2019	13	No Trend	No Trend	<PQL
MW-83	5/23/2014	10/24/2019	13	Decreasing	Decreasing	ND
MW-84	5/27/2014	10/23/2019	16	No Trend	Decreasing	<PQL
MW-194	8/5/2016	10/23/2019	9	Stable	Stable	ND
MW-195	8/5/2016	10/22/2019	9	ND	ND	ND
MW-196	8/5/2016	10/23/2019	9	ND	ND	ND
TMW-10	10/8/2015	10/22/2019	10	Decreasing	Stable	Increasing
TMW-11	10/8/2015	10/22/2019	10	Decreasing	Decreasing	<PQL
Southern Plume Wells (includes Source Area Wells as indicated by bold font well ID)						
ITMW-1/ITMW-1R	10/27/2011	10/23/2019	19	Decreasing	Decreasing	<PQL
ITMW-2/ITMW-2R	11/3/2010	10/24/2019	21	<PQL	<PQL	ND
ITMW-5	4/27/2009	10/24/2019	17	Increasing	Stable	Increasing
ITMW-7	4/27/2009	10/22/2019	26	Decreasing	Decreasing	No Trend
ITMW-9	4/27/2009	10/23/2019	23	No Trend	Decreasing	No Trend
ITMW-10	4/27/2009	10/24/2019	25	Stable	Decreasing	Decreasing
ITMW-16	11/6/2010	10/24/2019	20	Decreasing	<PQL	ND
ITMW-18	4/27/2009	10/24/2019	24	Decreasing	Decreasing	<PQL
ITMW-19	4/27/2009	10/24/2019	24	Decreasing	Decreasing	<PQL
ITMW-20	10/29/2009	10/23/2019	25	No Trend	ND	<PQL
ITMW-21	10/27/2009	10/24/2019	25	Decreasing	<PQL	ND
MW-22	10/27/2009	10/23/2019	21	<PQL	ND	ND
MW-24	4/27/2009	10/23/2019	22	Decreasing	Decreasing	<PQL
MW-25/MW-25R	4/27/2009	10/25/2019	25	No Trend	No Trend	Decreasing
MW-26	10/29/2009	10/23/2019	25	No Trend	ND	ND
MW-29	10/29/2009	10/23/2019	23	<PQL	<PQL	ND
MW-38	10/26/2011	10/23/2019	21	Stable	Stable	Decreasing
MW-85/MW-85R	5/29/2014	10/24/2019	11	No Trend	Stable	Decreasing
MW-93	10/22/2014	10/24/2019	15	Decreasing	Decreasing	Stable
MW-95	10/22/2014	10/24/2019	15	Stable	Increasing	Stable
MW-182	7/23/2015	10/23/2019	10	Decreasing	Decreasing	<PQL
MW-185	10/5/2015	10/24/2019	10	Increasing	Increasing	<PQL
MW-186	10/5/2015	10/24/2019	10	Increasing	Increasing	Increasing
MW-187	10/5/2015	10/22/2019	10	Increasing	Increasing	ND
MW-188	10/5/2015	10/22/2019	10	<PQL	<PQL	ND
MW-189	10/5/2015	10/24/2019	10	Increasing	Stable	<PQL
MW-190	10/5/2015	10/22/2019	10	<PQL	<PQL	ND
MW-191	10/5/2015	10/22/2019	10	No Trend	ND	No Trend
MW-192	10/5/2015	10/22/2019	10	No Trend	ND	ND
Northeast Plume Wells						
MW-87	6/25/2014	10/23/2019	12	Stable	Decreasing	<PQL
MW-89	6/24/2014	10/22/2019	12	Decreasing	<PQL	ND
MW-91	6/25/2014	10/24/2019	15	Increasing	Stable	<PQL
MW-96	10/22/2014	10/23/2019	14	<PQL	ND	ND
MW-97	10/22/2014	10/23/2019	14	ND	<PQL	ND
MW-98	10/29/2014	10/23/2019	14	Increasing	<PQL	ND
MW-99	10/22/2014	10/23/2019	13	Increasing	Increasing	ND
MW-183/MW-183R	10/5/2015	10/23/2019	10	Decreasing	<PQL	ND
MW-184	10/5/2015	10/23/2019	10	No Trend	ND	ND

Notes:
ND = Result is Not Detected at the associated method quantitation limit
<PQL = Analyte qualified as estimated because it was detected above method detection
Bolded text = source area well

RAMBOLL

Figures



FILE: L:\Loop Project Files\Whirlpool Fort Smith\2019 Semi Annual M&R\mxd\2019 All Monitoring Well Locations_11x17 Portrait_20191018.mxd

RAMBOLL

DRAFTED BY: FK | DATE: 10/18/2019

2019 MONITORING WELL LOCATIONS

Whirlpool Facility - Fort Smith, Arkansas

Figure 1

PROJECT: 1690009230

FILE: L:\Loop Project Files\Whirlpool Fort Smith\2019 Semi Annual M&R\mxd\Oct 2019 Annual Potentiometric Surface Map 1ft_20191114.mxd

0 200 400 600

Feet 1 inch = 300 feet

Notes
- Water levels measured October 22nd, 2019.
- Water levels in ft.
- Only measured wells shown.

Brazil Ave
Brazil Ave
Jacobs Ave
Ingersoll Ave
Ingersoll Ave
Jenny Lind Rd
Jenny Lind Rd
Boys Club
Johnston Ave
St

MW-50R 455.74
MW-60R 459.03
TMW-11 458.20
MW-61R 454.29
TMW-10 457.94
MW-196 454.58
MW-55R 464.06
TMW-35 464.21
MW-71 464.06
MW-70 464.06
RW-69 463.71
IW-75 464.06
IW-72 463.87
MW-40R 464.02
IW-74 463.95
IW-73 464.04
MW-41R 463.87
MW-82 463.98
IW-78 464.02
MW-39R 464.13
MW-35R 463.99
MW-65 464.00
MW-34R 464.12
MW-23 464.01
MW-84 463.84
MW-26 464.51
MW-24 463.99
IW-134 463.89
IW-132 463.80
IW-147 463.81
MW-25R 462.80
MW-172 463.89
ITMW-21 464.00
MW-92 463.89
ITMW-15 463.97
ITMW-19 463.73
MW-38 463.92
MW-93 463.92
ITMW-20 464.00
MW-58R 463.66
MW-68 464.15
MW-57R 461.61
MW-56R 461.76
MW-46R 463.74
MW-62R 460.47
MW-63R 460.96
TMW-23 459.08
TMW-22R 459.55
TMW-12 460.63
TMW-24 460.05
TMW-14 461.47
IW-76 463.86
MW-81 464.01
IW-77 464.03
IW-115 463.87
IW-80 463.90
MW-36R 463.92
IW-79 464.04
MW-28 463.69
MW-27 463.92
MW-83 463.88
IW-101 463.87
ITMW-2R 463.30
ITMW-16 463.95
ITMW-12R 463.67
ITMW-11 463.96
MW-94 463.64
ITMW-18 463.57
MW-95 463.74
MW-37 463.93
ITMW-1R 459.51
MW-22 461.93
MW-90 462.46
MW-89 457.04
MW-88 460.77
MW-195 458.66
TMW-21 459.17
TMW-20 458.76
TMW-29 454.38
MW-194 459.18
MW-87 458.27
MW-91 457.61
MW-99 457.39
MW-97 451.44
MW-96 451.84
MW-183R 452.23
MW-98 451.64
MW-184 456.54
MW-29 463.37
MW-30 462.97
ITMW-7 462.13
ITMW-5 460.23
ITMW-10 460.23
ITMW-4 460.17
ITMW-9 459.99
MW-185 459.43
TMW-34 459.13
MW-182 460.122
TMW-27 457.39
TMW-25 458.86
TMW-16 458.78
TMW-26 457.06
TMW-30 456.67
MW-186 456.18
ITMW-6 460.18
MW-190 460.03
MW-191 459.96
MW-192 459.79
MW-189 460.10
TMW-36 460.00
TMW-19 460.04
TMW-32 456.12
MW-187 458.58
MW-188 459.96

Monitoring Well Location
Groundwater Contour(1-ft Interval)
Groundwater Contour (dashed where inferred)
Approximate Property Boundary

RAMBOLL

2019 ANNUAL SAMPLING POTENTIOMETRIC SURFACE

Whirlpool Facility - Fort Smith, Arkansas

Figure 2A

DRAFTED BY: FK | DATE: 11/14/2019 | PROJECT: 1690010633



FILE: L:\Loop Project Files\Whirlpool Fort Smith\2019 Semi Annual M&R\mxd\Oct 2019 Vertical GW Gradients_20200103.mxd

RAMBOLL

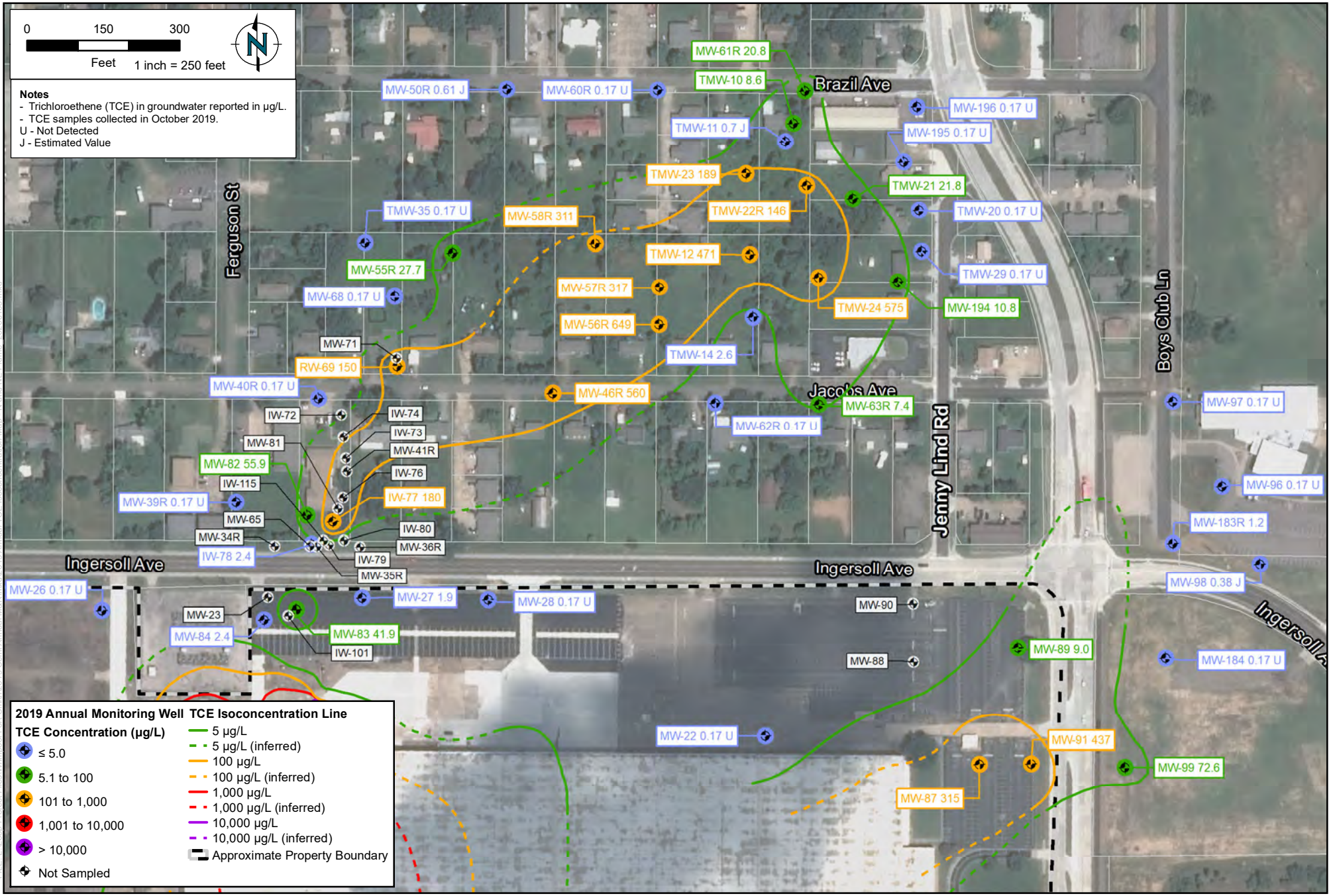
DRAFTED BY: FK/KV | DATE: 01/03/2020

VERTICAL GROUNDWATER GRADIENTS OBSERVED IN NESTED WELLS APRIL 2019 / OCTOBER 2019

Whirlpool Facility - Fort Smith, Arkansas

Figure 2B

PROJECT: 1690009230



FILE: L:\Loop Project Files\Whirlpool Fort Smith\2019 Semi Annual M&R\mxd\2019 Annual TCE Isoconcentration Map - N and NE Plume_20200103.mxd

RAMBOLL

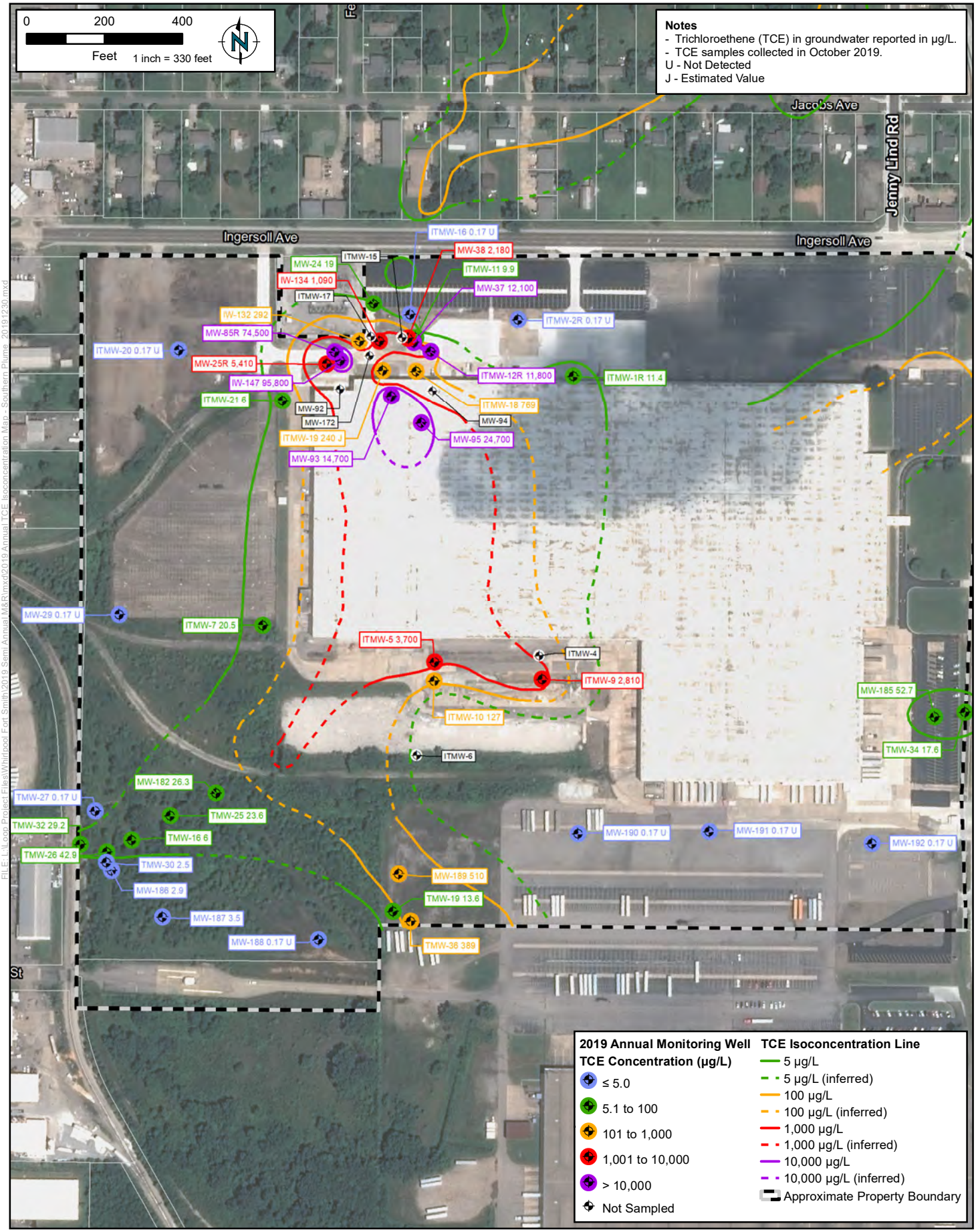
DRAFTED BY: FK | DATE: 01/03/2020

2019 ANNUAL TCE ISOCONCENTRATION MAP
NORTH AND NORTHEAST PLUMES

Whirlpool Facility - Fort Smith, Arkansas

Figure 3A

PROJECT: 1690012820



RAMBOLL

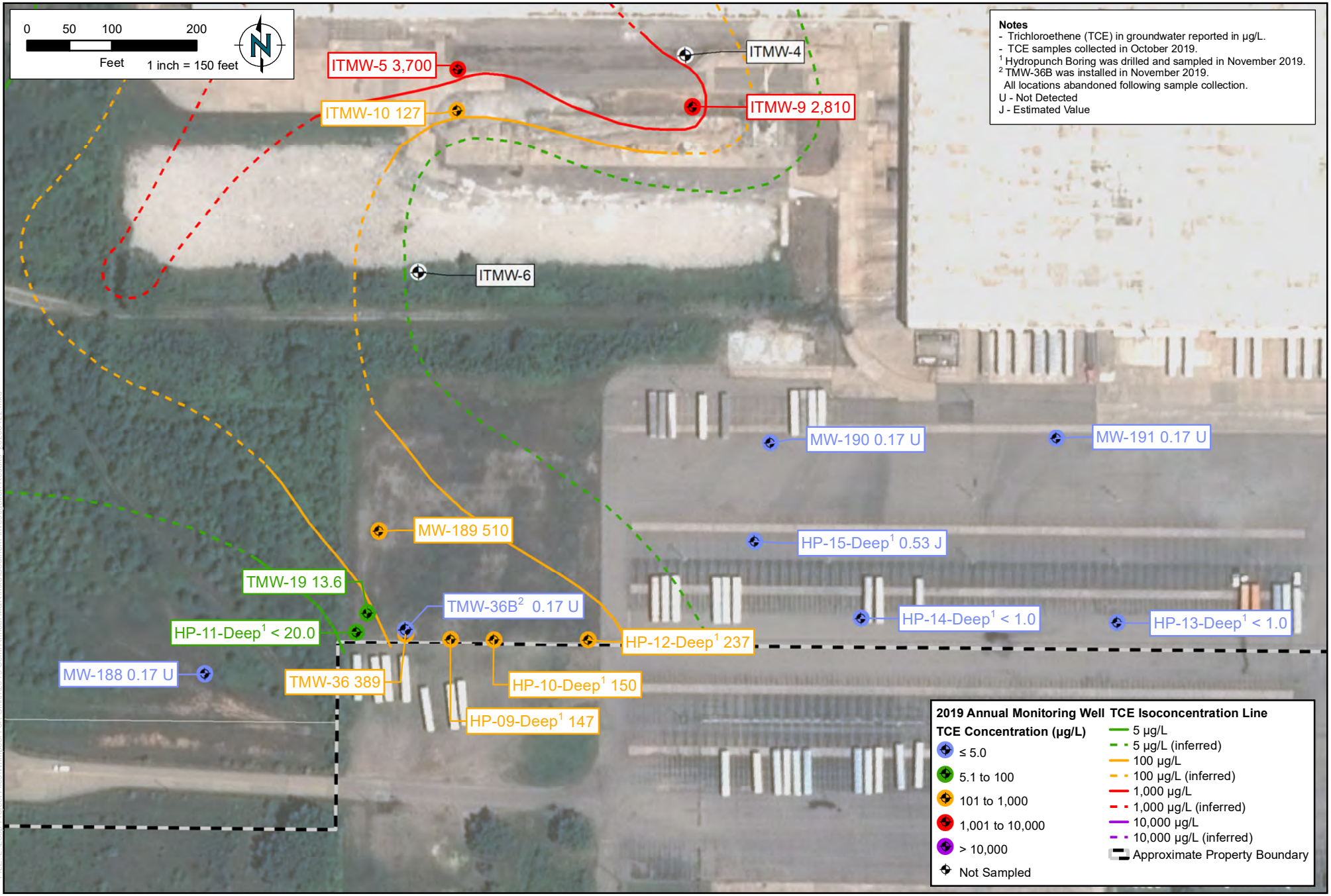
DRAFTED BY: FK | DATE: 01/22/2020

2019 ANNUAL TCE ISOCONCENTRATION MAP SOUTHERN PLUME

Whirlpool Facility - Fort Smith, Arkansas

Figure 3B

PROJECT: 1690012820



FILE: L:\Loop Project Files\Whirlpool Fort Smith\2019 Semi Annual M&R\mxd\Southern Investigation Results_20200122.mxd

RAMBOLL

DRAFTED BY: FK | DATE: 01/22/2020

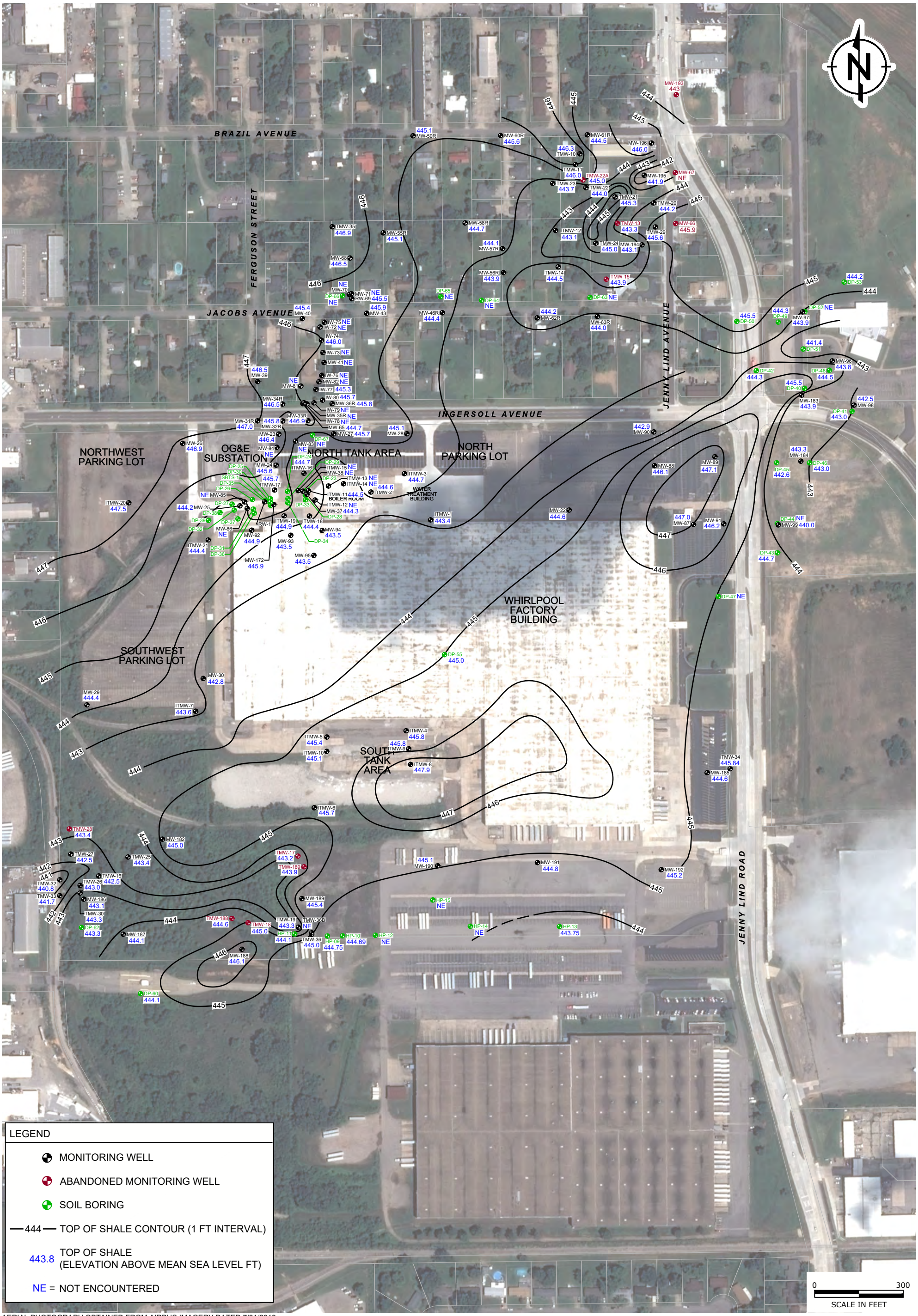
INVESTIGATION RESULTS
SOUTHERN PLUME

Whirlpool Facility - Fort Smith, Arkansas

Figure 4

PROJECT: 1690009230

L:\Loop Project Files_CAD\1690015112_Whirlpool Ft Smith, AR_PHII\05_Top of Competent Shale.dwg



AERIAL PHOTOGRAPH OBTAINED FROM AIRBUS IMAGERY DATED 7/31/2019.

RAMBOLL

DRAFTED BY: CKL | DATE: 1/27/20

TOP OF COMPETENT SHALE

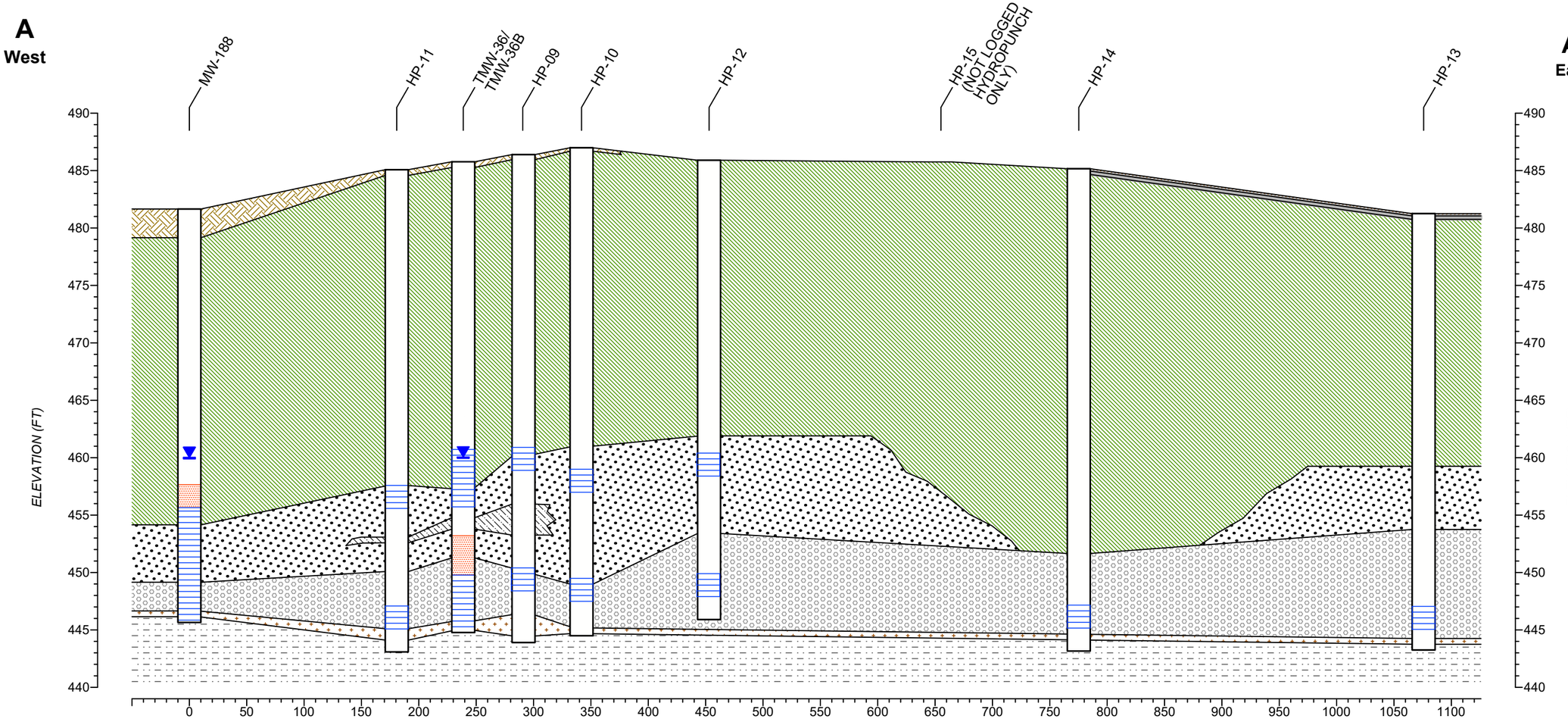
WHIRLPOOL FACILITY
FORT SMITH, ARKANSAS

FIGURE
5

1690015112

A
West

A'
East



HORIZONTAL SCALE (FT)

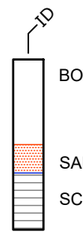


SITE OVERVIEW

LITHOLOGY
FILL
ASPHALT
SUB-BASE: FILL AND GRAVEL
CLAYEY SAND/GRAVEL
CLAYEY SAND/SILTY SAND
CLAYEY SILT
SILTY CLAY
SILTY CLAY/ CLAYEY SILT
SHALE
WATER LEVEL (FT. AMSL.)

NOTE:
AMSL = ABOVE MEAN SEA LEVEL

MONITORING WELL



HORIZONTAL SCALE (Ft.)
0 100

VERTICAL SCALE (Ft.)
0 10

VERTICAL EXAGGERATION = 10x

CROSS-SECTION A-A'

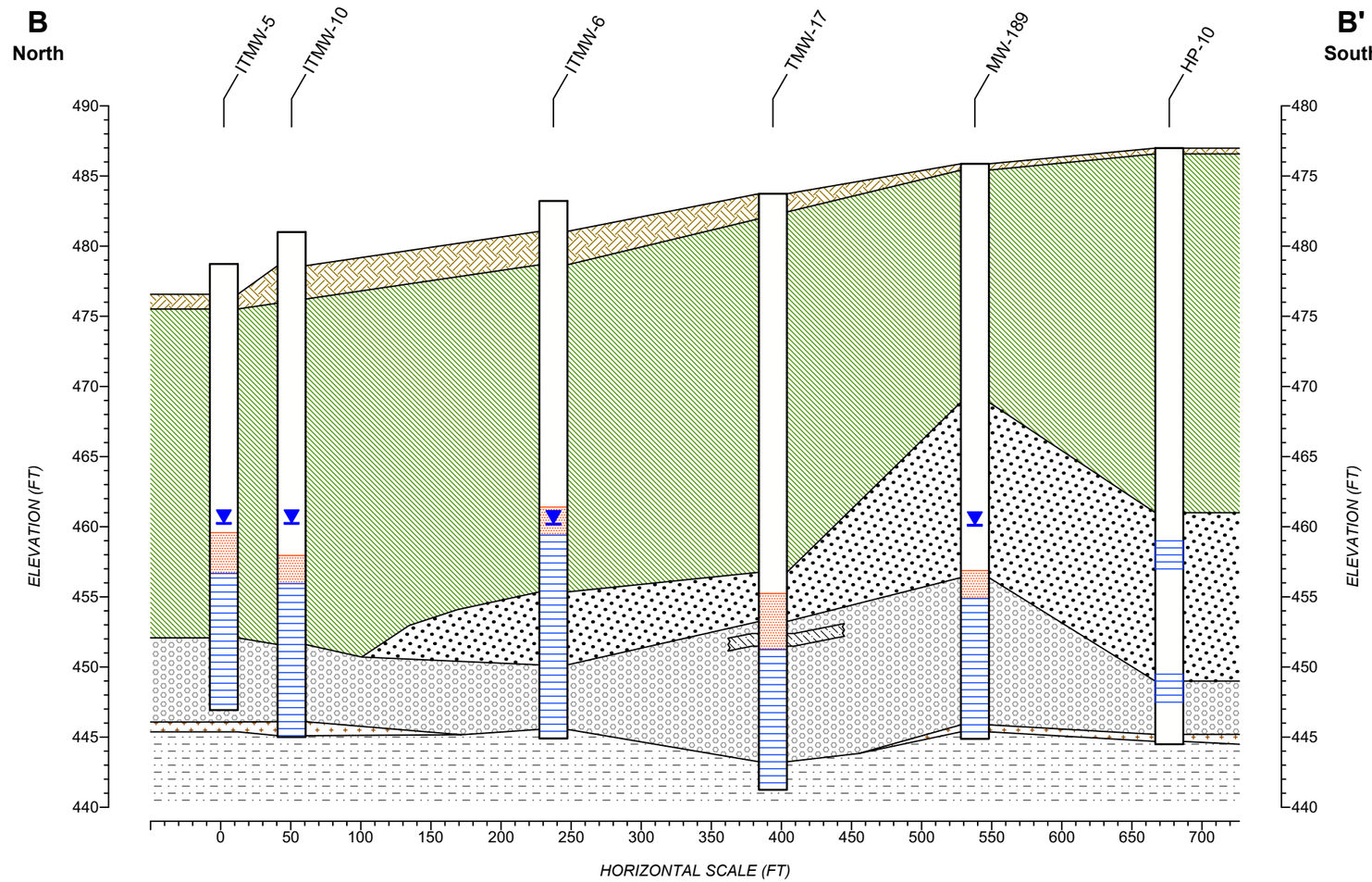
WHIRLPOOL FACILITY
FORT SMITH, ARKANSAS

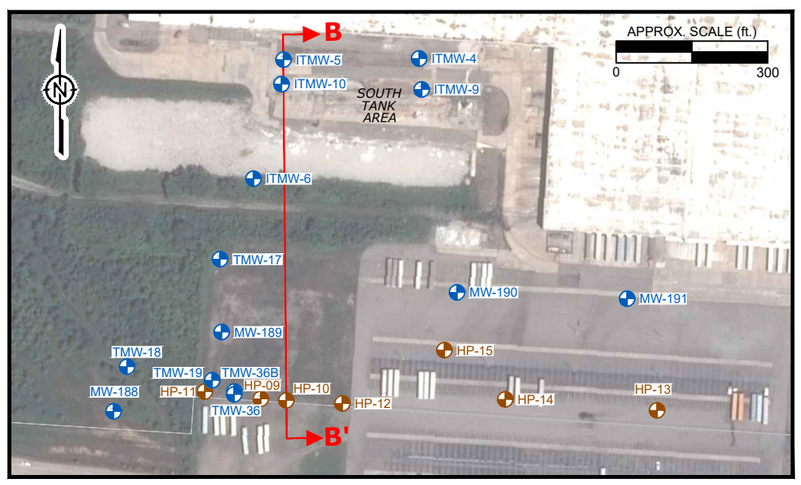
RAMBOLL

FIGURE
6

DRAFTED BY: CKL | DATE: 1/24/20 | 1690015592

L:\Loop Project Files_CAD\1690015112_Whirlpool Ft Smith, AR_2019-12_XS\06-07_Cross Section.dwg



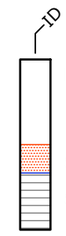


SITE OVERVIEW

LITHOLOGY
FILL/SILTY CLAY
CLAYEY SAND/GRAVEL
CLAYEY SAND/SILTY SAND
CLAYEY SILT
SILTY CLAY
SILTY CLAY/ CLAYEY SILT
SHALE
WATER LEVEL (FT. AMSL.)

NOTE:
AMSL = ABOVE MEAN SEA LEVEL

MONITORING WELL



HORIZONTAL SCALE (Ft.)
0
100

VERTICAL SCALE (Ft.)
0
10

VERTICAL EXAGGERATION = 10x

CROSS-SECTION B-B'
WHIRLPOOL FACILITY
FORT SMITH, ARKANSAS

RAMBOLL

FIGURE
7

DRAFTED BY: CKL | DATE: 1/24/20 | 1690015592

L:\Loop Project Files_CAD\1690015112_Whirlpool Ft Smith, AR_2019-12_XS\06-07_Cross Section.dwg

Attachment A
Calibration Logs

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/22/19

Calibrated by: H. Ahlers

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 9GC 294 **Exp:** Mar/20

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 9GF122 **Exp:** Mar/20

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 9GB719 **Exp:** Feb/21
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 9GC044 **Exp:** Mar/21
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 8GB1055 **Exp:** Feb/20
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 1134 + 10min = 1144
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.17 in. x 25.4 = 754.25 mmHg - 15.169 = 739.081 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:

YSI – Serial Number: 04L1385 AM

1. Specific Conductance: 1,413 µS/cm
2. ORP: 240.0 mV
3. pH:
   - Point 1: 7.00
   - Point 2: 4.00
   - Point 3: 10.02
4. DO: 97.2%

Turbidity Meter Model/Serial Number: 5130 - 5014

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/23/19

Calibrated by: H. Anders

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 9GC294 **Exp:** Mar /20

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 9GF122 **Exp:** Mar /20

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 9GB719 **Exp:** Feb/21
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 9GC044 **Exp:** Mar /21
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 8GB1055 **Exp:** Feb /20
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 0633 + 10min = 0643
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.01 in. x 25.4 = 762.718 mmHg - 15.169 = 748.609 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:

YSI – Serial Number: 04L1385 AM

1. Specific Conductance: 1,413 µS/cm
2. ORP: 240.0
3. pH:
   - Point 1: 7.00
   - Point 2: 4.00
   - Point 3: 10.02
4. DO: 98.5%

Turbidity Meter Model/Serial Number: 5130 - 5014

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/22/19

Calibrated by: NZ

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 96C294 **Exp:** 3/20

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 964826 **Exp:** 10/19

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 963719 **Exp:** 2/21
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 96C044 **Exp:** 3/21
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 96B1055 **Exp:** 2/20
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 1140 + 10min = 1150
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   29.17 in. x 25.4 = 754.25 mmHg - 15.169 = 739.081 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:

YSI – Serial Number: 18J103058

1. Specific Conductance: 1412 ms/cm
2. ORP: 240 mV
3. pH:
   - Point 1: 7.00
   - Point 2: 4.00
   - Point 3: 10.00
4. DO: 97.4 %

Turbidity Meter Model/Serial Number: 1392 - 3811

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 11/23/19

Calibrated by: NZ

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 96C294 **Exp:** 3/20
1. Pour conductivity standard into calibration cup **and immerse** sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no **significant change** in specific conductance. Note below.
4. Discard used calibration standard, and rinse **calibration cup** and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 96A826 **Exp:** 10/19
1. Pour ORP (Zobell) standard into calibration cup **and immerse** sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no **significant change** in ORP. Note below.
4. Discard used calibration standard, and rinse **calibration cup** and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):
1. Pour pH 7.0 standard into the calibration cup and **immerse pH** sensor. **Lot #** 96B719 **Exp:** 2/21
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant **change in pH**. Note below.
4. Discard used calibration standard, and rinse **calibration cup** and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and **immerse pH** sensor. **Lot #** 96C044 **Exp:** 3/21
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant **change in pH**. Note standard below.
8. Discard used calibration standard, and rinse calibration **cup** and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and **immerse pH** sensor. **Lot #** 86B1055 **Exp:** 2/20
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant **change in pH**. Note below
12. Discard used calibration standard, and rinse calibration **cup** and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):
1. Ensure unit has been on for at least 10 minutes: Initial time: 1140 + 10min = 1150
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a **weather app** or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.10 in. x 25.4 = 764.54 mmHg - 15.169 = 749.371 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:
1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:
YSI – Serial Number: 18J103058
1. Specific Conductance: 1413 ms/cm
2. ORP: 240.9 mV
3. pH:
   - Point 1: 7.00
   - Point 2: 4.00
   - Point 3:
4. DO: 98.9% 10.06

Turbidity Meter Model/Serial Number: 1392-3811

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10122119

Calibrated by: Victoria Sinclair

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 96C294 **Exp:** 3120

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 96F122 **Exp:** 3120

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 96B719 **Exp:** 2121
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 96C044 **Exp:** 3121
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 96B055 **Exp:** 2120
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 1615 + 10min = 1625
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.16 in. x 25.4 = 766.06 mmHg - 15.169 = 750.90 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:

YSI – Serial Number: 373161

1. Specific Conductance: 1224 mc/sm
2. ORP: 255.5
3. pH:
   - Point 1: 7.02
   - Point 2: 3.94
   - Point 3: 10.21
4. DO: 104.0%

Turbidity Meter Model/Serial Number:

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: Victor 10/23/19

Calibrated by: Victoria Siegfen

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 9GC294 **Exp:** 3120

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 9GF122 **Exp:** 3120

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 9GB119 **Exp:** 2121
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 9GC044 **Exp:** 3121
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 8GB1055 **Exp:** 2120
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 0530 + 10min = 0740
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.08 in. x 25.4 = 764.03 mmHg - 15.169 = 748.86 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry: 3-7361

YSI – Serial Number:

1. Specific Conductance: 1443
2. ORP: 251.0
3. pH:
   - Point 1: 7.08
   - Point 2: 4.05
   - Point 3: 10.19
4. DO: 108.3%

Turbidity Meter Model/Serial Number:

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: Victoria Siegen

Calibrated by: 10124119

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 9GC294 **Exp:** 3120

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 9GF122 **Exp:** 3120

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 9GB319 **Exp:** 3121
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 9GC044 **Exp:** 321
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 8G31055 **Exp:** 2120
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 0730 + 10min = 0740
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.14 in. x 25.4 = 765.56 mmHg - 15.169 = 750.39 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:

YSI – Serial Number: ← 373601 → 1252

1. Specific Conductance:
2. ORP: 238.3
3. pH:
   - Point 1: 7.07
   - Point 2: 4.00
   - Point 3: 10.12
4. DO: 77%

Turbidity Meter Model/Serial Number:

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/22/19

Calibrated by: MATT SCHAPPERT

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 9GL294 **Exp:** Mar/20

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 9GF122 **Exp:** Mar/20

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 968719 **Exp:** Feb/21
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 9GC044 **Exp:** Mar/21
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 8GB1055 **Exp:** Feb/20
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 1020 + 10min = 1030
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.09 in. x 25.4 = 764.286 mmHg - 15.169 = 749.117 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:

YSI – Serial Number: 18J102185

1. Specific Conductance: 1.31 mS/cm
2. ORP: 251.2mV
3. pH:
   - Point 1: 7.11
   - Point 2: 3.91
   - Point 4: 9.78
4. DO: 749.117 mg/L

Turbidity Meter Model/Serial Number: LaMotte 2020 we 027921

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/23/19

Calibrated by: M. Schuppert

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 96C294 **Exp:** Mar/20

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 96F122 **Exp:** Mar/20

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 96B719 **Exp:** Feb/21
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 96C044 **Exp:** Mar/21
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 86B1055 **Exp:** Feb/20
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 0720 + 10min = 0730
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.09 in. x 25.4 = 764.286 mmHg - 15.169 = 749.117 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:

YSI – Serial Number: 18J 102185

1. Specific Conductance: 1.23 mS/cm
2. ORP: 247.7 mV
3. pH:
   - Point 1: 7.06
   - Point 2: 4.02
   - Point 3: 10.16
4. DO: 766.147 mgl

Turbidity Meter Model/Serial Number:

027921

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/24/19

Calibrated by: M. Schappet

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 96C668 **Exp:** 3-31-20

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 96F122 **Exp:** Mar/20

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 96B719 **Exp:** Feb/21
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 96C044 **Exp:** Mar/21
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 96B1055 **Exp:** Feb/20
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 0730 + 10min = 0740
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.09 in. x 25.4 = 764.286 mmHg - 15.169 = 749.117 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:
YSI – Serial Number: 18J102185

1. Specific Conductance: 0.80 mS/cm
2. ORP: 242.5
3. pH:
   - Point 1: 7.03
   - Point 2: 4.00
   - Point 3: 10.10
4. DO: 747.7

Turbidity Meter Model/Serial Number: 027921

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/22/2019

Calibrated by: Nick Martin

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** BGFB75 **Exp:** 8/31/2020

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 2062 **Exp:** 10/2022

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** BGA687 **Exp:** 1/30/2020
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** BGA190 **Exp:** 1/30/2020
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** BGA361 **Exp:** 1/30/2020
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 1030 + 10min = 1040
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.16 in. x 25.4 = 766.06 mmHg - 15.169 = 750.895 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:
YSI – Serial Number: Probe = 18J13 Monitor = 03 1454

1. Specific Conductance: 1253 → 1.413 mS/cm
2. ORP: 249.6 mV
3. pH:
   - Point 1: 7.11 → 7.00
   - Point 2: 3.71 → 4.00
   - Point 3: 10.00 → 10.00
4. DO: 102.2% → 98.8%

Turbidity Meter Model/Serial Number: LaMotte 2020t / 1422-1419

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/23/2019

Calibrated by: Nick Mann

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 8GF875 **Exp:** 8/31/2020

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 2062 **Exp:** 10/2022

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 86A687 **Exp:** 1/30/2020
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 86A196 **Exp:** 1/30/2020
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 86A361 **Exp:** 1/30/2020
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 0755 + 10min = 0805
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.08 in. x 25.4 = 764.032 mmHg - 15.169 = 748.863 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:
YSI – Serial Number: Probe: 18313 Monitor: 031454

1. Specific Conductance: 1404 – 1.413 mS/cm
2. ORP: 241.9 mV → 240 mV
3. pH:
   - Point 1: 7.04 → 7.00
   - Point 2: 4.03 → 4.00
   - Point 3: 9.97 → 10.00
4. DO: 105.8 – 98.8% (at kept 1), 100.7 → 98.5 %

Turbidity Meter Model/Serial Number: Lamotte 2020t / 1422-1419

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/24/2019

Calibrated by: Nick Mann

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 18F875 **Exp:** 8/31/2020

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 2062 **Exp:** 10/2022

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 86A687 **Exp:** 1/30/2020
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 86A190 **Exp:** 1/30/2020
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 86A361 **Exp:** 1/30/2020
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 07:57 + 10min = 08:07
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.14 in. x 25.4 = 765.556 mmHg - 15.169 = 750.387 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:
YSI – Serial Number: Probe: 18313 Monitor: 03454

1. Specific Conductance: 1.408 → 1.413 mS/cm
2. ORP: 232.5mV → 240mV
3. pH:
   - Point 1: 6.93 → 7.00
   - Point 2: 4.01 → 4.00
   - Point 3: 9.89 → 10.00
4. DO: 99.3% → 98.7%

Turbidity Meter Model/Serial Number: Lamotte 2020c / 1422-1419

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/22/19

Calibrated by: JD Pawlowsky

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 8GF875 **Exp:** 8/31/2020

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 2062 **Exp:** 10/2022

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 8GA087 **Exp:** 1/30/2020
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 8GA190 **Exp:** 1/30/2020
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 8GA361 **Exp:** 1/30/2020
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 1112 + 10min = 1122
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   29.09 in. x 25.4 = 764.286 mmHg - 15.169 = 749.117 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:

YSI – Serial Number: 05J1366

1. Specific Conductance: 1.293
2. ORP: 250.0
3. pH:
   - Point 1: 7.08 7.07 7.05
   - Point 2: 3.99
   - Point 3: 10.08
4. DO: 102.1

Turbidity Meter Model/Serial Number: 3028-0913 LaMotte 2020 we

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/23/19

Calibrated by: J. Pawlowsky

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 86F875 **Exp:** 3/31/2020

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 20162 **Exp:** 10/2022

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 86A687 **Exp:** 1/30/20
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 86A190 **Exp:** 1/30/20
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 86A361 **Exp:** 1/30/20
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 0752 + 10min = 0852
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.09 in. x 25.4 = 764.286 mmHg - 15.169 = 749.117 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:

YSI – Serial Number: 05J1364

1. Specific Conductance: 1.413 mS/cm
2. ORP: 240.0
3. pH:
   - Point 1: 7.00
   - Point 2: 4.01
   - Point 3: 10.03
4. DO:

Turbidity Meter Model/Serial Number: 3028-0913 LaMotte 2020wl

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/24/18

Calibrated by: Jo Pawlowski

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 8GF875 **Exp:** 8/31/2020

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 21062 **Exp:** 10/2022

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 8GA687 **Exp:** 1/30/20
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 8GA190 **Exp:** 1/30/20
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 8GA361 **Exp:** 1/30/20
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 0803 + 10min = 0813
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.14 in. x 25.4 = 765.356 mmHg - 15.169 = 750.387 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:

YSI – Serial Number: 05J1366 1.358 mS/cm

1. Specific Conductance:
2. ORP: 238.5 mV
3. pH:
   - Point 1: 7.00
   - Point 2: 4.00
   - Point 3: 10.02
4. DO: 98.4.1.

Turbidity Meter Model/Serial Number: 3028-0913 LaMotte 2020we

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/24/19

Calibrated by: J. Krcil

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 96C668 **Exp:** 3-31-20

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 96D336 **Exp:** 1-31-20

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 866201 **Exp:** 12-31-20
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 866214 **Exp:** 12-31-20
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 866108 **Exp:** 12-31-20
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 7:46 + 10min = 7:56
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.14 in. x 25.4 = 765.56 mmHg - 15.169 = 750.387 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:
YSI – Serial Number: 14L101344

1. Specific Conductance: 1194
2. ORP: 240.0
3. pH:
   - Point 1: 7.00
   - Point 2: 4.00
   - Point 3: 10.01
4. DO: 98.8 %

Turbidity Meter Model/Serial Number: Hach 2020 we me 8678-5016

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/23/19

Calibrated by: J. Knecht

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 96 1668 **Exp:** 3-31-20

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 960336 **Exp:** 1-31-20

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 862701 **Exp:** 12-31-20
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 862214 **Exp:** 12-31-20
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.

9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 862108 **Exp:** 12-31-20
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 7:46 + 10min = 7:56
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.09 in. x 25.4 = 764.29 mmHg - 15.169 = 749.117 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:
YSI – Serial Number: 14J101394

1. Specific Conductance: 1042
2. ORP: 242.3
3. pH:
   - Point 1: 7.00
   - Point 2: 4.00
   - Point 3: 10.01
4. DO: 98.6%

Turbidity Meter Model/Serial Number: Lu Motte 2020 we 8678-5016

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/22/14

Calibrated by: J. Keel

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 96C668 **Exp:** 3-31-20

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 96D336 **Exp:** 1-31-20

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 862701 **Exp:** 12-31-20
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 862214 **Exp:** 12-31-20
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.

9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 862108 **Exp:** 12-31-20
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 11:28 + 10min = 11:38
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.17 in. x 25.4 = 766.32 mmHg - 15.169 = 751.15 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:
YSI – Serial Number: 14J101344

1. Specific Conductance: 1.111
2. ORP: 240.0
3. pH:
   - Point 1: 7.00
   - Point 2: 4.00
   - Point 3: 10.02
4. DO: 98.8%

Turbidity Meter Model/Serial Number: La Motte 2020 we 8678-5016

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/22/19

Calibrated by: A. Larson

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 9GC29H **Exp:** 3/2020

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 9GF122 **Exp:** 3/2020

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 9G13719 **Exp:** 2/2021
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 9GC04H **Exp:** 3/2021
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.

9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 8GB1055 **Exp:** 2/2020
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 1135 + 10min = 1145
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.17 in. x 25.4 = 766.32 mmHg - 15.169 = 751.15 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:

YSI – Serial Number: 39578

1. Specific Conductance: ~~1.23~~ 1.24
2. ORP: 240.2
3. pH:
   - Point 1: 7.14
   - Point 2: 4.12
   - Point 3: 9.46
4. DO: ~~10.0~~ 10.83 mg/L 9891.

Turbidity Meter Model/Serial Number: 2020WE/01805

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/23/19

Calibrated by: ALaman

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 9GC294 **Exp:** 3/2020

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 9GF122 **Exp:** 3/2020

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 9GB719 **Exp:** 2/2021
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.
5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 9GC044 **Exp:** 3/2021
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.
9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 8GB1055 **Exp:** 2/2020
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 0735 + 10min = 0745
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.08 in. x 25.4 = 764.032 mmHg - 15.169 = 748.863 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

Field Notebook calibration entry:

YSI – Serial Number: 39578

1. Specific Conductance: 1.44
2. ORP: 210.4
3. pH:
   - Point 1: 6.99
   - Point 2: 4.08
   - Point 3: 10.06
4. DO: 102.3%.

Turbidity Meter Model/Serial Number: 018051

RAMBOLL

Whirlpool Ft. Smith Field Equipment Calibration Checklist

Date: 10/24/19

Calibrated by: A. Larson

Turn on YSI. Note time in DO section Line 1.

Specific Conductance calibration (should take *at least* 1.5 minutes): **Lot #:** 9GC294 **Exp:** 3/2020

1. Pour conductivity standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in specific conductance. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

ORP calibration (should take *at least* 1.5 minutes): **Lot #:** 9GF122 **Exp:** 3/2020

1. Pour ORP (Zobell) standard into calibration cup and immerse sensor.
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in ORP. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

3-Point pH calibration (should take *at least* 4.5 minutes):

1. Pour pH 7.0 standard into the calibration cup and immerse pH sensor. **Lot #** 9GB719 **Exp:** 2/2021
2. Allow *1 minute* for temperature stabilization.
3. Press "calibrate" after *30 seconds* of no significant change in pH. Note below.
4. Discard used calibration standard, and rinse calibration cup and probes with DI water.

5. Pour pH 4.0 standard into the calibration cup and immerse pH sensor. **Lot #** 9GC044 **Exp:** 3/2021
6. Allow *1 minute* for temperature stabilization.
7. Press "calibrate" after *30 seconds* of no significant change in pH. Note standard below.
8. Discard used calibration standard, and rinse calibration cup and probes with DI water.

9. Pour pH 10.0 standard into the calibration cup and immerse pH sensor. **Lot #** 8GB1055 **Exp:** 3/2020
10. Allow *1 minute* for temperature stabilization.
11. Press "calibrate" after *30 seconds* of no significant change in pH. Note below
12. Discard used calibration standard, and rinse calibration cup and probes with DI water.

Dissolved Oxygen (% DO) calibration (should take *at least* 10 minutes):

1. Ensure unit has been on for at least 10 minutes: Initial time: 0735 + 10min = 0745
2. Enter the local barometric pressure.
   (Note: to convert from inches (common on a weather app or forecast) to mmHg, multiply by 25.4, then to correct to Ft. Smith's altitude, subtract 15.169 mmHg.)
   30.14 in. x 25.4 = 765.556 mmHg - 15.169 = 750.387 mmHg
3. Place ~3mm of DI water in the bottom of the calibration cup.
4. Lightly screw on the calibration cup (only 1 or 2 threads!)
5. Allow *10 minutes* for the air in the cup to become water-saturated and temp to stabilize.
6. Press "calibrate" after *30 seconds* of no significant change in DO. Note below.
7. Discard used DI water, and rinse calibration cup and probes with DI water.

Turbidity calibration:

1. Select "measure" on the main menu, then "Turbidity – With Blank"
2. Scan a sample using the 0.0 NTU Blank solution. "Scan Blank"
3. Scan a sample using the 10 NTU standard. "Scan Sample"
4. Select "Calibrate," then use the arrow buttons to adjust the value to the standard (10.0 NTU).

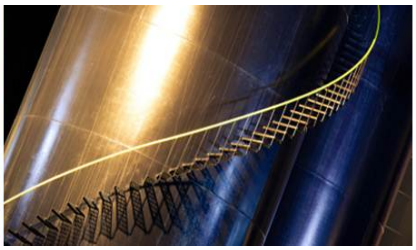
Field Notebook calibration entry:

YSI – Serial Number: 39578

1. Specific Conductance: 1.40 ms/cm
2. ORP: 259.7
3. pH:
   - Point 1: 7.04
   - Point 2: 4.23
   - Point 3: 10.10
4. DO: 97.3%

Turbidity Meter Model/Serial Number: 018081

RAMBOLL


ATTACHMENT B

2019 Soil Vapor Monitoring and Vapor Intrusion Assessment Report

Whirlpool Facility
Fort Smith, Arkansas

Prepared for:
Whirlpool Corporation

Prepared by:
Ramboll US Corporation

Date:
February 2020

Project Number:
1690015112

RAMBOLL

Table of Contents

Page

1 Introduction 1

2 Vapor Intrusion Assessment Sampling 3

3 Results 5
3.1 Summary of Prior Assessments 5
3.2 Current Assessment 5
3.2.1 Parcels in the Neighborhood 6
3.2.1.1 Parcel 2 6
3.2.1.2 Parcel 3 6
3.2.1.3 Parcel 4 7
3.2.2 South of the Neighborhood – Parcel 5 8

4 Summary and Conclusion 9

5 References 10

LIST OF TABLES

Table 1a: Summary of Matrices Encountered and Sampled at Soil Vapor Monitoring Points
Table 1b: Summary of Screen Intervals at Soil Vapor Monitoring Points
Table 2a: Annual 2019 Groundwater Volatile Organic Compound Data for Monitoring Wells in the Neighborhood
Table 2b: Annual 2019 Groundwater Volatile Organic Compound Data for Monitoring Well South of the Neighborhood
Table 3: Annual 2019 Water Data from Soil Vapor Monitoring Points
Table 4: Upper-Bound Vapor Intrusion Risk Estimates Based on Annual 2019 Groundwater Data in the Neighborhood
Table 5: Evaluation of Volatile Organic Compounds in Water at Parcels in the Neighborhood
Table 6: Summary of Groundwater Concentrations for TCE in Shallow Wells and at Vapor Points in the Neighborhood from 2015 to Present
Table 7: Evaluation of Volatile Organic Compounds in Water at Parcel 5 (South of Neighborhood)

LIST OF FIGURES

Figure 1: Shallow Groundwater Monitoring Wells and Vapor Points Sampled During the 2019 Annual Sampling Event
Figure 2: Groundwater Monitoring Well Locations

LIST OF APPENDICES

Appendix A: Laboratory Analytical Data
Appendix B: Field Notes and Weather Data for October 2019
Appendix C: Risk Calculations and Input Parameters

1 Introduction

Ramboll US Corporation (Ramboll) has prepared this Annual 2019 Soil Vapor (SV) Monitoring and Vapor Intrusion (VI) Assessment Report for the Fort Smith, Arkansas, site (Site) on behalf of Whirlpool Corporation, in accordance with the Revised Groundwater Monitoring Plan (RGWMP) approved by the Arkansas Department of Environmental Quality (ADEQ) in September 2016; the Remedial Action Decision Document (RADD) issued by ADEQ on December 27, 2013 and revised in November 2015 (Revised RADD); and the ADEQ comment letters and Ramboll/Whirlpool responses to previous SV monitoring and VI assessment reports. This report is Attachment B of the Annual 2019 Progress Report for the Site.

Whirlpool has been monitoring groundwater at the Site since 1989. In 2012, the potential for VI from groundwater into residential buildings in the neighborhood north of the Site and the onsite building were evaluated using multiple lines of evidence in a human health risk assessment, which was presented as Appendix A of the Revised Risk Management Plan (RRMP) (ENVIRON 2013). The risk assessment included the use of groundwater and SV data in the evaluation of the potential for VI. In January 2016, the risk assessment was updated with the monitoring data collected after the 2013 Risk Assessment (Ramboll Environ 2016b). The use of multiple lines of evidence in these risk assessments is consistent with United States Environmental Protection Agency's (USEPA's) recommendations in its 2015 VI guidance documents (USEPA 2015a and 2015b).

Monitoring data collected during the 2019 Annual Sampling Event from groundwater monitoring wells and vapor monitoring points are evaluated in this report for residential buildings in the neighborhood north of the Site, using the methods and assumptions described in the 2013 and 2016 risk assessment reports.

Monitoring data to assess potential for VI for the onsite building was assessed in April and November 2015. The onsite building has been renovated by the current owner Phoenix Investors LLC to facilitate future use for industrial and warehousing purposes. The building renovation included removal of equipment, filling of former pits, interior painting and subdividing the interior of the building. When renovations were completed, indoor air and sub-slab soil gas data were collected in April and October 2019 to assess indoor air quality and the degree to which a VI pathway exists (if at all). An evaluation of this data is presented in a separate report (2019 Annual Report, Attachment J).

Groundwater, SV, crawl space air and indoor air have been monitored since 2014 to assess the potential for VI in the neighborhood north of the Site and the onsite building, as documented in the following reports:

- Four quarterly monitoring events in 2014 consisting of:
  - First Quarter 2014 SV Monitoring and VI Assessment Report, May 15, 2014;
  - Second Quarter 2014 SV Monitoring and VI Assessment Report, August 15, 2014;

  - Third Quarter 2014 SV Monitoring and VI Assessment Report, November 14, 2014; and
  - Fourth Quarter 2014 SV Monitoring and VI Assessment Report, February 13, 2015.
- 2014 Remedial Action Effectiveness Report, January 2015.
- Four quarterly monitoring events in 2015 consisting of:
  - First Quarter 2015 SV Monitoring and VI Assessment Report, May 8, 2015;
  - Second Quarter 2015 SV Monitoring and VI Assessment Report, August 13, 2015 (including outdoor, crawl space and indoor air samples from Parcel 3 on April 22-23, 2015);
  - Third Quarter 2015 SV Monitoring and VI Assessment Report, November 13, 2015; and
  - Fourth Quarter 2015 SV Monitoring and VI Assessment Report, January 12, 2016 (including outdoor, crawl space and indoor air samples from Parcel 3 on November 5, 2015).
- 2015 Two Year Technical Review Report, January 28, 2016.
- Human Health Risk Assessment Update, January 29, 2016.
- Two quarters of monitoring events in 2016 consisting of:
  - First Quarter 2016 SV Monitoring and VI Assessment Report, May 12, 2016; and
  - Second Quarter 2016 SV Monitoring and VI Assessment Report, August 15, 2016.
- Onsite Indoor Air and Sub-Slab SV Data Report, April 27, 2016.
- Onsite Indoor Air and Sub-Slab SV Data Report, Second Monitoring Event, August 26, 2016.
- Annual 2016 SV Monitoring and VI Assessment Report, February 2, 2017.
- 2017 Semi-Annual SV Monitoring and VI Assessment Report, July 2017.
- Annual 2017 SV Monitoring and VI Assessment Report, January 5, 2018.
- 2018 Semi-Annual SV Monitoring and VI Assessment Report, July 2018.
- 2018 Annual SV Monitoring and VI Assessment Report, January 2019.
- Onsite Indoor Air and Sub-Slab SV Data Report, July 11, 2019 (2019 Semi-Annual Report, Attachment F).
- 2019 Semi-Annual SV Monitoring and VI Assessment Report, July 10, 2019 (2019 Semi-Annual Report, Attachment B).

2 Vapor Intrusion Assessment Sampling

The most recent samples for VI assessment were collected on October 22-24, 2019, in accordance with the Revised Groundwater Monitoring Plan, section "Shallow Groundwater Monitoring for VI Assessment" and Table 1 (Ramboll Environ 2016g). Groundwater samples for VI assessment[1] were collected from MW-175, MW-176, MW-178 and MW-179, which are located at two parcels (Parcels 2 and 3) in the neighborhood and at one parcel (Parcel 5) south of the neighborhood. SV sampling was attempted at associated SV monitoring points VP-7, VP-8, VP-9, VP-10 and VP-14. Water was encountered in all of the SV monitoring points. The sampling was performed following USEPA and industry standard methods.

SV sampling was also attempted at VP-12 (at Parcel 4). Although Parcel 4 is not included for VI assessment in the Revised Groundwater Monitoring Plan (2016g), data from this location are evaluated in this assessment.

Perched water filled VP-7, VP-8, VP-9, VP-10, VP-12 and VP-14 and the water from these monitoring points could not be purged from the sampling train. Water samples were collected from each of these vapor points, per the sampling modifications discussed in the Second Quarter 2014 SV Monitoring and VI Assessment Report except for VP-9. As discussed in Section 3.2.1.2, neither an air sample nor water sample was able to be retrieved from location VP-9. Table 1a summarizes the matrices encountered at the vapor monitoring points at each parcel and the types of samples that were collected during the October 2019 sampling event, as well as the sampling events since 2014. Table 1a also shows that indoor air, crawl space and outdoor air data were collected in April and October 2015 at Parcel 3 to provide additional lines of evidence for supporting the VI assessment.

Table 1b summarizes the groundwater monitoring wells and vapor monitoring points sampled in October 2019 or in a previous sampling event. The table includes a column that indicates whether a sampling location is for VI assessment per the Revised Groundwater Monitoring Plan (Ramboll Environ 2016g). These sampling locations are shown on Figure 1.

Information regarding the installation of the vapor monitoring points can be found in the Fourth Quarter 2015 SV Monitoring and VI Assessment Report (Ramboll Environ 2015f). The field procedures used during the SV sampling attempts were consistent with the methodology described in the First Quarter 2014 SV Monitoring and VI Assessment Report (ENVIRON 2014a) and the modifications discussed in the Second Quarter 2014 SV Monitoring and VI Assessment Report (ENVIRON 2014b); the sampling attempts October 22-23 were not preceded by at least five consecutive days with less than 0.1 inch of rain. Precipitation data for October 2019 are provided in Appendix B.

[1] According to the Revised Groundwater Monitoring Plan (2016d), MW-55R (in Parcel 6) is sampled for purposes other than VI assessment. Parcel 6 is no longer included for VI assessment.

The volatile organic compound (VOC) results for the groundwater, SV and perched water samples collected during the 2019 annual sampling event are discussed in Section 3. The analytical data reports for the samples are provided in Appendix A.

3 Results

3.1 Summary of Prior Assessments

The data collected over the groundwater plume in the neighborhood prior to Fourth Quarter 2019 continued to show that trichloroethylene (TCE) VI from groundwater is not indicative of a public health concern. These findings, based on multiple lines of evidence involving the evaluation of groundwater, SV, crawl space air and indoor air data corroborate the original groundwater VI modeling results which indicate VI from groundwater is not occurring at levels that would present a public health concern

3.2 Current Assessment

Groundwater data from monitoring wells (which have identifiers beginning with "MW-") in the neighborhood collected during the 2019 annual sampling event in October are summarized in Table 2a. Groundwater data from the monitoring wells south of the neighborhood are summarized on Table 2b. Figure 2 shows the locations of the groundwater monitoring wells included in Tables 2a and 2b. Perched water data and SV data from SV points sampled during the 2019 Annual Sampling Event are included in Table 3a and Table 3b, respectively.

The maximum detected groundwater concentrations among the monitoring wells in the neighborhood that were sampled in October 2019 are summarized in Table 4. These concentrations were used to calculate upper-bound risk estimates for potential VI from groundwater into residences in the neighborhood, using the approach in Section 6.5.2 of the ADEQ-approved RRMP which was also used in the 2016 Risk Assessment. The calculation of and input parameters for these risk estimates are included as Appendix C. As shown in Table 4, the calculations resulted in upper-bound cumulative cancer risk and non-cancer hazard index (HI) estimates of 3×10^{-6} and 0.5, respectively. These risk estimates are below ADEQ's risk management limits of 10^{-4} and 1, respectively, for reasonable maximum exposure (RME) risks (ADEQ 2005). The calculations for risk estimates discussed in this section are included in Appendix C. Toxicity values used in the risk calculations are current as of January 2020.

SV monitoring points and nearby groundwater monitoring wells were installed at five parcels in January 2015 and one additional parcel in June 2015 to provide additional lines of evidence to evaluate the potential for VI from groundwater. Where SV data could not be collected but perched water samples could be collected from the SV monitoring points, data from these samples were used to confirm the conclusions of the groundwater VI risk assessment.

The following sections describe the evaluation of groundwater, SV and perched water data from the co-located vapor points and monitoring wells at each of the three parcels sampled for VI assessment in October 2019 per the revised groundwater monitoring plan. Perched water data from Parcel 4 are also evaluated, even though Parcel 4 was excluded from the VI assessment (Ramboll Environ 2016g). The parcels within the neighborhood are discussed in Section 3.2.1 and the parcel south of the neighborhood is discussed in Section 3.2.2.

3.2.1 Parcels in the Neighborhood

3.2.1.1 Parcel 2

At Parcel 2, VI risks were estimated based on the groundwater data from MW-175 and the approach discussed above for groundwater. As shown in Table 5, the upper-bound cumulative cancer risk and non-cancer HI estimates for groundwater water at MW-175 are 5 x 10^{-7} and 0.1, respectively, which are within ADEQ's risk management limits for RME risks.

Upper-bound risk estimates were also calculated using the perched water data from VP-7 and VP-8 as an additional line of evidence for assessing the degree of VI from groundwater. The risk estimates were calculated using the approach discussed above for groundwater, except the depth to water was decreased to 5.5 feet below ground surface (bgs) for VP-7 and 10.5 feet bgs for VP-8. As shown in Table 5, the upper-bound cumulative cancer risk and non-cancer HI estimates for perched water at VP-7 are 5 x 10^{-9} and 0.00008, respectively; the upper-bound cumulative cancer risk and non-cancer HI estimates for perched water at VP-8 are 3 x 10^{-8} and 0.005, respectively. These risk estimates are well within ADEQ's risk management limits for RME risks.

These results confirm that VI from groundwater does not pose an unacceptable risk at Parcel 2. Only perched water data were evaluated at Parcel 2 because an SV sample could not be collected from the vapor monitoring points at this parcel.

3.2.1.2 Parcel 3

At Parcel 3, VI risks were estimated based on the groundwater data from MW-176 and the approach discussed above for groundwater. As shown in Table 5, the upper-bound cumulative cancer risk and non-cancer HI estimates for groundwater at MW-176 are 2 x 10^{-6} and 0.2, respectively, which are well within ADEQ's risk management limits for RME risks.

VI risks were also calculated based on the perched water data from VP-10, which is located adjacent to MW-176, as an additional line of evidence. The risk estimates were calculated using the approach discussed above for groundwater, except the depth to water was decreased to 11 feet bgs. As shown in Table 5, the upper-bound cumulative cancer risk and non-cancer HI estimates for water at VP-10 are 6 x 10^{-8} and 0.003, respectively, which are within ADEQ's risk management limits for RME risks.

In previous sampling events, SV concentrations from VP-9 were used to calculate upper-bound risk estimates. However, no sample was collected from VP-9 during this sampling event since perched water filled the SV monitoring point and the water could not be purged. Since the concentrations at MW-176 and VP-10 have not drastically increased during this sampling event compared to previous monitoring events, risk estimates from these two locations provide sufficient evidence that quantitative risks at this parcel would be within ADEQ's risk management targets. Multiple lines of evidence collected during previous sampling events at Parcel 3 are described below.

The highest TCE concentration in SV at VP-9 was detected in 2015. In November 2015, TCE was detected at a concentration of 1,200 micrograms per cubic meter (µg/m^3) in the vapor at VP-9. Because of the large increase in the TCE soil vapor concentration in November 2015, outdoor, crawl space and indoor air samples were collected at Parcel 3 on November 4-5, 2015. As discussed in Section 3.2.1.3 of the Fourth Quarter 2015 SV Monitoring and VI Assessment Report, the low TCE concentrations detected in the outdoor (< 0.034 µg/m^3), crawl space (< 0.062 µg/m^3) and indoor air (< 0.032 µg/m^3) samples were determined to not be associated with groundwater conditions related to the Site (Ramboll Environ 2015). The absence of detectable plume-related concentrations in the air data indicated an incomplete VI pathway from the groundwater plume. This determination is the same as that based on the outdoor, crawl space and indoor air data collected at Parcel 3 in April 2015 (all TCE concentrations were below detection limits of 0.039 µg/m^3 or less) at the request of the property owner (when VP-9 had a TCE vapor concentration of 0.25 µg/m^3).

The findings from the November 2015 VI Assessment are still considered to be valid. Since the current TCE SV sampling location at VP-9 is water-flooded vapor diffusion is expected to be much slower in this location than in November 2015 when air sampling data demonstrated that the VI pathway from groundwater did not actually exist.

Although the upper-bound risk estimates for SV from VP-9 have been sometimes higher than the risk estimates based on the perched water data from VP-10, they should not be interpreted as an indication that the risk estimates from the water data are not adequately conservative. Rather, the interpretation should be that the risk estimates based on applying USEPA's generic attenuation factor to the SV data are upper-bound rather than reasonable worst-case and thus, are more conservative than necessary. As discussed in Section 6.8.2 of the RRMP, these risk estimates ignore the substantial attenuation due to the approximately 5 feet of silty clay between the SV sample depth and ground surface. Accounting for such attenuation would result in risk estimates for VP-9 that are substantially lower than those shown in Table 5.

Using multiple lines of evidence that include crawl space and indoor air data, the past four years of assessment results do not indicate VI from groundwater is posing an unacceptable risk at Parcel 3.

Since the shallow groundwater at Parcel 3 has had the highest TCE concentrations in the plume under the neighborhood, the 2015 crawl space and indoor air results at Parcel 3 also provide a relevant line of evidence for other residential properties in the neighborhood overlying the plume. As shown in Table 6, the highest TCE concentrations in shallow groundwater in the neighborhood since 2015 were at MW-176 and VP-10, which are located at Parcel 3. Since the crawl space and indoor air data at Parcel 3 do not show evidence of a complete VI pathway, it is reasonable to expect the same findings at properties where TCE concentrations in shallow groundwater are lower.

3.2.1.3 Parcel 4

At Parcel 4, VI risks were estimated based on the perched water data from VP-12 and the approach discussed above for groundwater, except the depth to water was increased to 12.5

feet bgs. As shown in Table 5, the upper-bound cumulative cancer risk and non-cancer HI estimates from groundwater at VP-12 are 4 x 10^{-9} and 0.00001, respectively, which are well within ADEQ's risk management limits for RME risks.

The results from VP-12 confirm that VI from groundwater does not pose an unacceptable risk at Parcel 4. Only perched water data were evaluated at Parcel 4 because an SV sample could not be collected from the vapor monitoring point at this location.

3.2.2 South of the Neighborhood – Parcel 5

Risk estimates for potential VI from groundwater into residential buildings were estimated based on the data collected at Parcel 5, which is a vacant non-residential property located south of Ingersoll Avenue and the residential neighborhood. Groundwater VI risks were calculated using the groundwater data from MW-179 and the approach discussed above for groundwater. As shown in Table 7, the upper-bound cumulative cancer risk and non-cancer HI estimates from groundwater at MW-179 are 9 x 10^{-8} and 0.02, respectively, which are below ADEQ's risk management limits for RME risks.

Upper-bound risk estimates were also calculated using the perched water data from VP-14 and MW-178, which are located adjacent to MW-179. The risk estimates were calculated using the approach discussed above for groundwater, except the depth to water was decreased to 7.5 feet bgs and 10.5 feet bgs, respectively. As shown in Table 7, the upper-bound cumulative cancer risk and non-cancer HI estimates for groundwater at VP-14 are 3 x 10^{-7} and 0.07, respectively; the upper-bound cumulative cancer risk and non-cancer HI estimates for groundwater at MW-178 are 2 x 10^{-8} and 0.003, respectively; the risk estimates at these sample points are well within ADEQ's risk management limits for RME risks.

In previous monitoring events, VI risk was also calculated using groundwater data from MW-33R as an additional line of evidence (see Table 1b). However, MW-33R was abandoned during the 2016 annual event due to road construction.

The results from MW-179, VP-14 and MW-178 confirm that VI from groundwater would not pose an unacceptable risk if there was a residence at Parcel 5.

4 Summary and Conclusion

- The concentrations of TCE in groundwater are stable or decreasing compared to previous reporting periods and historic results.
- Risk estimates for VI from groundwater in the neighborhood are below ADEQ's risk management limits of 10^{-4} and 1 for cumulative cancer risk and non-cancer hazards, respectively.
- VI modeling using perched water confirms the modeling results using VOC concentrations in water collected from groundwater monitoring wells. In addition, data from outdoor, crawl space and indoor air sampling demonstrated that VI from groundwater has not been occurring.

5 References

ADEQ. 2005. Ground Water Remediation Level Interim Policy and Technical Guidance. Memorandum from Marcus Devine, Director, to Ellen Carpenter, Legal Division Chief. July 12.

ADEQ. 2013. Remedial Action Decision Document (RADD) for Corrective Action. Facility Identification Number: 66-00048. December 27.

ENVIRON International Corporation (ENVIRON). 2013. Revised Risk Management Plan. April 24.

ENVIRON. 2014a. First Quarter 2014 Progress Report, Attachment B: SV Monitoring and VI Assessment Report. May 15.

ENVIRON. 2014b. Second Quarter 2014 Progress Report, Attachment B: SV Monitoring and VI Assessment Report. August 15.

ENVIRON. 2014c. Third Quarter 2014 Progress Report, Attachment B: SV Monitoring and VI Assessment Report. November 14.

ENVIRON. 2015a. 2014 Remedial Action Effectiveness Report, January 2015

ENVIRON. 2015b. Fourth Quarter 2014 Progress Report, Attachment B: SV Monitoring and VI Assessment Report. February 13.

ENVIRON. 2015c. First Quarter 2015 Progress Report, Attachment B: SV Monitoring and VI Assessment Report. April.

Ramboll Environ US Corporation (Ramboll Environ). 2015d Second Quarter 2015 Progress Report, Attachment B: SV Monitoring and VI Assessment Report. August.

Ramboll Environ. 2015e. Third Quarter 2015 Progress Report, Attachment B: SV Monitoring and VI Assessment Report. October.

Ramboll Environ. 2015f. Fourth Quarter 2015 Progress Report, Attachment B: SV Monitoring and VI Assessment Report. December.

Ramboll Environ. 2016a. 2015 Two Year Technical Review Report, January.

Ramboll Environ. 2016b. Human Health Risk Assessment Update. January.

Ramboll Environ. 2016c. Onsite Indoor Air and Sub-Slab SV Data Report. April.

Ramboll Environ. 2016d. First Quarter 2016 Progress Report, Attachment B: SV Monitoring and VI Assessment Report. May.

Ramboll Environ. 2016e. Second Quarter 2016 Progress Report, Attachment B: SV Monitoring and VI Assessment Report. July.

Ramboll Environ. 2016f. Onsite Indoor Air and Sub-Slab Soil Vapor Data Report, Second Monitoring Event. August.

Ramboll Environ. 2016g. Revised Groundwater Monitoring Plan. September.

Ramboll Environ. 2017a. Annual 2016 SV Monitoring and VI Assessment Report. February.

Ramboll Environ. 2017b. Semi-Annual 2017 SV Monitoring and VI Assessment Report. July.

Ramboll Environ. 2017c. Annual 2017 SV Monitoring and VI Assessment Report. December.

Ramboll. 2018. Semi-Annual 2018 SV Monitoring and VI Assessment Report. June.

Ramboll. 2019. Annual 2018 SV Monitoring and VI Assessment Report. January.

Ramboll. 2019. Semi-Annual 2019 SV Monitoring and VI Assessment Report. June.

USEPA. 2015a. OSWER Technical Guide for Assessing and Mitigating the VI Pathway from Subsurface Vapor Sources to Indoor Air. Office of Solid Waste and Emergency Response. OSWER Publication 9200.2-154. June.

USEPA. 2015b. Technical Guide for Addressing Petroleum VI at Leaking Underground Storage Tank Sites. EPA 510-R-15-001. June.

Weather Underground. "Weather History for Fort Smith, AR." Weather Forecast & Reports. April 2018. Accessed May 25, 2018. <https://www.wunderground.com/history/airport/KFSM/2018/4/9/MonthlyCalendar.html>.

Tables

TABLE 1a
SUMMARY OF MATRICES ENCOUNTERED AND SAMPLED AT SOIL VAPOR MONITORING POINTS
Whirlpool Facility - Fort Smith, Arkansas

Quarter of Collection	Date of Collection	In Neighborhood										South of Neighborhood	
		Parcel 1		Parcel 2		Parcel 3			Parcel 4		Parcel 6	Parcel 5	
		VP-5	VP-6	VP-7	VP-8	OA/CS/IA~	VP-9	VP-10	VP-1S+	VP-1D / VP-12#	VP-15	VP-2S+	VP-2D / VP-14#
Annual 2019	10/2019	--	--	**Water**	**Water**	NS	NS	**Water**	--	**Water**	--	--	**Water**
Semi-Annual 2019	4/2019	--	--	**Water**	**Water**	NS	**Air**	**Water**	--	**Water**	--	--	**Water**
Annual 2018	11/2018	--	--	**Water**	**Water**	NS	**Air**	**Water**	--	**Water**	--	--	**Water**
Semi-Annual 2018	4/2018	--	--	**Water**	**Water**	NS	**Air**	**Water**	--	**Water**	--	--	**Water**
Annual 2017	10/2017	--	--	**Water**	**Water**	NS	**Air**	**Water**	--	**Water**	--	--	**Water**
Semi-Annual 2017	5/2017	--	--	**Water**	**Water**	NS	**Air**	**Water**	--	**Water**	--	--	**Water**
Annual 2016	11/2016	**Water**	**Water**	**Water**	**Water**	NS	**Air**	**Water**	--	**Water**	NS	--	NS
2nd Q 2016	5/2016	**Water**	**Water**	**Water**	**Water**	NS	NS	**Water**	--	**Water**	**Water**	--	**Water**
1st Q 2016	1/2016	**Water**	**Water**	**Water**	**Water**	NS	NS	**Water**	--	**Water**	**Water**	--	**Water**
4th Q 2015	10/2015	**Water**	**Water**	**Air**	**Water**	**Air**	**Air**	**Water**	--	**Water**	**Water**	--	**Water**
3rd Q 2015	7/2015	**Water**	**Water**	**Air**	**Water**	NS	**Water**	**Water**	--	**Water**	**Water**	--	**Water**
2nd Q 2015	4/2015	**Water**	**Water**	**Air**	**Water**	**Air**	**Air**	**Water**	--	**Water**	--	--	*Water*
1st Q 2015	1/2015	**Air**	**Water**	**Air**	*Water*	--	**Air**	**Water**	--	**Water**	--	--	**Air**
4th Q 2014	10/2014	--	--	--	--	--	--	--	**Water**	*Air*	--	**Water**	**Water**
3rd Q 2014	9/2014	--	--	--	--	--	--	--	**Water**	*Air**	--	**Water**	**Water**
3rd Q 2014	7/2014	--	--	--	--	--	--	--	*Water*	*Water*	--	**Water**	**Water**
2nd Q 2014	5/2014	--	--	--	--	--	--	--	Water	**Air**	--	Water	Water
1st Q 2014	3/2014	--	--	--	--	--	--	--	**Air**	**Air**	--	Water	**Air**

Notes:
Shaded and **bolded** cells indicate that a sample was collected.
Italicized cells indicate that insufficient volume was available for sample collection.
Dashes ("--") indicate the location was not installed or was abandoned during this sampling event.
Prior to the Third Quarter 2014, water encountered in the soil vapor monitoring points was not sampled per the quarterly sampling plan.
Per the September 2016 RMP, only vapor points associated with groundwater wells MW-175 through MW-179 will be sampled. In the Semi-Annual 2017 sampling, VP-12 was sampled.
"NS" indicates the location was not sampled during this sampling event.
* During the September 2014 sampling event, no air or water sample could be collected at VP-1D; a water sample was collected at the nearby port SV-04D to characterize VOC concentrations in the area.
~ Outdoor ("OA"), crawl space ("CS"), and indoor air ("IA") samples were collected in the Second Quarter 2015 and Fourth Quarter 2015 at Parcel 3 at the request of the property owner
+ During the First Quarter 2015, VP-1S and VP-2S were abandoned and installation of VP-11 and VP-13 was attempted in Parcels 4 and 5, respectively. However, because of water in the borings for VP-11 and VP-13, monitoring wells MW-181 and MW-180,
# During the First Quarter 2015, locations VP-1D and VP-2D were replaced by VP-12 and VP-14, respectively.

TABLE 1b
SUMMARY OF SCREEN INTERVALS AT SOIL VAPOR MONITORING POINTS
Whirlpool Facility - Fort Smith, Arkansas

Area	Parcel	Location	Screen Interval (feet bgs)	Included in 2016 Revised Groundwater Sampling Plan for Vapor Intrusion Assessment	Notes	Annual 2019
						10/2019
In Neighborhood	1	MW-173	5-6	No		NS
In Neighborhood	1	VP-5	7.25-7.75	No		NS
In Neighborhood	1	MW-174	10-11	No		NS
In Neighborhood	1	VP-6	13.75-14.25	No		NS
In Neighborhood	2	VP-7	5.25-5.75	Yes	Water in VP	Water
In Neighborhood	2	VP-8	10.25-10.75	Yes	Water in VP	Water
In Neighborhood	2	MW-175	14-15	Yes		Water
In Neighborhood	3	VP-9	5.25-5.75	Yes	No air or water available	NS
In Neighborhood	3	VP-10	10.75-11.25	Yes	Water in VP	Water
In Neighborhood	3	MW-176	13.5-14.5	Yes		Water
In Neighborhood	4	MW-181 (VP-11)+	5.5-6.5	No		NS
In Neighborhood	4	MW-177	9-10	No		NS
In Neighborhood	4	MW-71	12#	No		NS
In Neighborhood	4	VP-12 (VP-1D)*	12.25-12.75	No	Water in VP	Water
In Neighborhood	6	VP-15	5.25-5.75	No		NS
In Neighborhood	6	MW-55R	19-21	No&		Water
South of Neighborhood	5	MW-180 (VP-13)+	6-7	No		NS
South of Neighborhood	5	MW-178	7-8	Yes		Water
South of Neighborhood	5	VP-14 (VP-2D)*	10.25-10.75	Yes	Water in VP	Water
South of Neighborhood	5	MW-179	12-13	Yes		Water
South of Neighborhood	5	MW-33R^	19-21	No		NS

Notes:
bgs: Below ground surface
Italicized cells indicate that insufficient volume was available for sample collection.
Dashes ("--") indicate the location was not installed or was abandoned during this sampling event.
Prior to the Third Quarter 2014, water encountered in the soil vapor monitoring points was not sampled per the quarterly sampling plan.
"NS" indicates the location was not sampled during this sampling event.
* During the First Quarter 2015, locations VP-1D and VP-2D were replaced by VP-12 and VP-14, respectively.
+ During the First Quarter 2015, VP-1S and VP-2S were abandoned and installation of VP-11 and VP-13 was attempted in Parcels 4 and 5, respectively. However, because of water in the borings for VP-11 and VP-13, monitoring wells MW-181 and MW-180, respectively, were installed.
# Well screen information is not available for MW-71. The typical depth to groundwater of 12 feet bgs was substituted for the screen depth.
& MW-55R is included in the Revised Groundwater Monitoring Plan for purposes other than the Vapor Intrusion Assessment.
^ MW-33R was abandoned in April 2016.

RAMBOLL

TABLE 2a
ANNUAL 2019 GROUNDWATER VOLATILE ORGANIC COMPOUND DATA FOR MONITORING WELLS IN THE NEIGHBORHOOD
Whirlpool Facility - Fort Smith, Arkansas

Location	MW-39R	MW-40R	MW-46R	MW-46R	MW-50R	MW-55R	MW-55R	MW-56R
Field Sample ID	MW-39R-201910	MW-40R-201910	MW-46R-201910	DUP-03-201910	MW-50R-201910	MW-55R-201910	DUP-04-2019110	MW-56R-201910
Lab Sample ID	60318969012	60318969006	60319115045	60319115022	60319115052	60319115025	60319115026	60319115001
Sample Date	10/22/2019	10/22/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019
Comments				Field Duplicate			Field Duplicate	
Volatile Organic Compounds								
Acetone	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)
Benzene	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)
Bromoform	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)
Bromomethane	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)
2-Butanone	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)
Carbon Disulfide	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
Chlorobenzene	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)
Chloroform	U (0.10)	U (0.10)	0.13 J (0.10)	0.12 J (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Chloromethane	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
1,2-Dichloroethane	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1-Dichloroethene	U (0.22)	U (0.22)	2.4 (0.22)	1.9 (0.22)	U (0.22)	0.39 J (0.22)	0.34 J (0.22)	2.0 (0.22)
cis-1,2-Dichloroethene	U (0.17)	U (0.17)	22.1 (0.17)	16.5 (0.17)	U (0.17)	0.98 J (0.17)	1.2 (0.17)	16.9 (0.17)
trans-1,2-Dichloroethene	U (0.17)	U (0.17)	0.72 J (0.17)	0.49 J (0.17)	U (0.17)	U (0.17)	U (0.17)	0.30 J (0.17)
Ethyl Benzene	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)
2-Hexanone	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)
Methylene Chloride	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)
Toluene	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
Trichloroethene	U (0.17)	U (0.17)	555 (1.7)	560 (1.7)	0.61 J (0.17)	26.4 (0.17)	27.7 (0.17)	649 (3.4)
Vinyl Chloride	U (0.11)	U (0.11)	0.69 J (0.11)	0.56 J (0.11)	U (0.11)	0.16 J (0.11)	0.18 J (0.11)	0.32 J (0.11)

Notes:

1 All concentrations are presented in µg/L [parts per billion (ppb)].

2 Only chemicals with at least one detection in any water or soil vapor sample are shown.

U = Not detected
J = Estimated concentration
( ) = Detection limit
µg/L = Micrograms per liter

RAMBOLL

TABLE 2a
ANNUAL 2019 GROUNDWATER VOLATILE ORGANIC COMPOUND DATA FOR MONITORING WELLS IN THE NEIGHBORHOOD
Whirlpool Facility - Fort Smith, Arkansas

Location	MW-57R	MW-58R	MW-58R	MW-60R	MW-61R	MW-62R	MW-63R	MW-68
Field Sample ID	MW-57R-201910	MW-58R-201910	DUP-01-201910	MW-60R-201910	MW-61R-201910	MW-62R-201910	MW-63R-201910	MW-68-201910
Lab Sample ID	60319115002	60319115056	60319115058	60319115023	60319115043	60318969004	60318969011	60318969005
Sample Date	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/22/2019	10/22/2019	10/22/2019
Comments			Field Duplicate					
Volatile Organic Compounds								
Acetone	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)
Benzene	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)
Bromoform	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)
Bromomethane	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)
2-Butanone	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)
Carbon Disulfide	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
Chlorobenzene	U (0.13)	U (0.13)	U (0.13)	0.17 J (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)
Chloroform	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Chloromethane	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
1,2-Dichloroethane	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1-Dichloroethene	1.6 (0.22)	1.8 (0.22)	1.8 (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)
cis-1,2-Dichloroethene	12.4 (0.17)	9.1 (0.17)	9.6 (0.17)	U (0.17)	1.7 (0.17)	U (0.17)	0.59 J (0.17)	U (0.17)
trans-1,2-Dichloroethene	0.24 J (0.17)	0.19 J (0.17)	0.25 J (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)
Ethyl Benzene	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)
2-Hexanone	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)
Methylene Chloride	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)
Toluene	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
Trichloroethene	317 (1.7)	299 (1.7)	311 (1.7)	U (0.17)	20.8 (0.17)	U (0.17)	7.4 (0.17)	U (0.17)
Vinyl Chloride	0.39 J (0.11)	0.51 J (0.11)	0.55 J (0.11)	U (0.11)	U (0.11)	U (0.11)	U (0.11)	U (0.11)

Notes:

1 All concentrations are presented in µg/L [parts per billion (ppb)].

2 Only chemicals with at least one detection in any water or soil vapor sample are shown.

U = Not detected
J = Estimated concentration
( ) = Detection limit
µg/L = Micrograms per liter

RAMBOLL

TABLE 2a
ANNUAL 2019 GROUNDWATER VOLATILE ORGANIC COMPOUND DATA FOR MONITORING WELLS IN THE NEIGHBORHOOD
Whirlpool Facility - Fort Smith, Arkansas

Location	MW-82	MW-82	MW-96	MW-97	MW-98	MW-99	MW-175	MW-176
Field Sample ID	MW-82-201910	DUP-02-201910	MW-96-201910	MW-97-201910	MW-98-201910	MW-99-201910	MW-175-201910	MW-176-201910
Lab Sample ID	60319115007	60319115008	60319115006	60319115005	60319115034	60319115048	60319115011	60318969001
Sample Date	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/22/2019
Comments		Field Duplicate						
Volatile Organic Compounds								
Acetone	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (3.3)
Benzene	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.079)
Bromoform	0.79 J (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)
Bromomethane	0.40 J (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)
2-Butanone	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (0.70)
Carbon Disulfide	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	0.40 J (0.16)	U (0.16)
Chlorobenzene	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)
Chloroform	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Chloromethane	0.39 J (0.16)	0.50 J (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
1,2-Dichloroethane	U (0.14)	0.14 J (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1-Dichloroethene	U (0.22)	U (0.22)	U (0.22)	U (0.22)	U (0.22)	0.56 J (0.22)	0.59 J (0.22)	1.6 (0.22)
cis-1,2-Dichloroethene	1.1 (0.17)	0.99 J (0.17)	U (0.17)	U (0.17)	U (0.17)	4.8 (0.17)	2.2 (0.17)	28.8 (0.17)
trans-1,2-Dichloroethene	0.17 J (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	U (0.17)	0.47 J (0.17)
Ethyl Benzene	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.12)
2-Hexanone	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (0.56)
Methylene Chloride	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.27)
Toluene	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
Trichloroethene	55.6 (0.17)	55.9 (0.17)	U (0.17)	U (0.17)	0.38 J (0.17)	72.6 (0.17)	138 (0.17)	317 (1.7)
Vinyl Chloride	U (0.11)	U (0.11)	U (0.11)	U (0.11)	U (0.11)	U (0.11)	0.16 J (0.11)	16.5 (0.11)

Notes:

1 All concentrations are presented in µg/L [parts per billion (ppb)].

2 Only chemicals with at least one detection in any water or soil vapor sample are shown.

U = Not detected

J = Estimated concentration

( ) = Detection limit

µg/L = Micrograms per liter

RAMBOLL

TABLE 2a
ANNUAL 2019 GROUNDWATER VOLATILE ORGANIC COMPOUND DATA FOR MONITORING WELLS IN THE NEIGHBORHOOD
Whirlpool Facility - Fort Smith, Arkansas

Location	MW-184	MW-194	MW-195	MW-196
Field Sample ID	MW-184-201910	MW-194-201910	MW-195-201910	MW-196-201910
Lab Sample ID	60319115046	60319115042	60318969015	60319115024
Sample Date	10/23/2019	10/23/2019	10/22/2019	10/23/2019
Comments				
Volatile Organic Compounds				
Acetone	U (3.3)	4.2 J (3.3)	U (3.3)	U (3.3)
Benzene	U (0.079)	U (0.079)	U (0.079)	U (0.079)
Bromoform	U (0.21)	U (0.21)	U (0.21)	U (0.21)
Bromomethane	U (0.32)	U (0.32)	U (0.32)	U (0.32)
2-Butanone	U (0.70)	U (0.70)	U (0.70)	U (0.70)
Carbon Disulfide	U (0.16)	U (0.16)	U (0.16)	U (0.16)
Chlorobenzene	U (0.13)	U (0.13)	U (0.13)	U (0.13)
Chloroform	U (0.10)	U (0.10)	U (0.10)	U (0.10)
Chloromethane	U (0.16)	U (0.16)	U (0.16)	U (0.16)
1,2-Dichloroethane	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1-Dichloroethene	U (0.22)	U (0.22)	U (0.22)	U (0.22)
cis-1,2-Dichloroethene	U (0.17)	0.97 J (0.17)	U (0.17)	U (0.17)
trans-1,2-Dichloroethene	U (0.17)	U (0.17)	U (0.17)	U (0.17)
Ethyl Benzene	U (0.12)	U (0.12)	U (0.12)	U (0.12)
2-Hexanone	U (1.0)	U (1.0)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	U (0.56)	U (0.56)	U (0.56)	U (0.56)
Methylene Chloride	U (0.27)	U (0.27)	U (0.27)	U (0.27)
Toluene	U (0.14)	U (0.14)	U (0.14)	U (0.14)
Trichloroethene	U (0.17)	10.8 (0.17)	U (0.17)	U (0.17)
Vinyl Chloride	U (0.11)	U (0.11)	U (0.11)	U (0.11)

Notes:

1 All concentrations are presented in µg/L [parts per billion (ppb)].

2 Only chemicals with at least one detection in any water or soil vapor sample are shown.

U = Not detected

J = Estimated concentration

( ) = Detection limit

µg/L = Micrograms per liter

RAMBOLL

TABLE 2b
ANNUAL 2019 GROUNDWATER VOLATILE ORGANIC COMPOUND DATA FOR MONITORING WELLS SOUTH OF THE NEIGHBORHOOD
Whirlpool Facility - Fort Smith, Arkansas

Location	MW-178	MW-179
Field Sample ID	MW-178-201910	MW-179-201910
Lab Sample ID	60319115030	60319241032
Sample Date	10/23/2019	10/24/2019
Comments		
Volatile Organic Compounds		
Acetone	U (3.3)	U (3.3)
Benzene	U (0.079)	U (0.079)
Bromoform	U (0.21)	U (0.21)
Bromomethane	U (0.32)	U (0.32)
2-Butanone	U (0.70)	U (0.70)
Carbon Disulfide	U (0.16)	U (0.16)
Chlorobenzene	U (0.13)	U (0.13)
Chloroform	U (0.10)	U (0.10)
Chloromethane	U (0.16)	U (0.16)
1,2-Dichloroethane	U (0.14)	U (0.14)
1,1-Dichloroethene	U (0.22)	U (0.22)
cis-1,2-Dichloroethene	1.2 (0.17)	0.74 J (0.17)
trans-1,2-Dichloroethene	U (0.17)	U (0.17)
Ethyl Benzene	U (0.12)	U (0.12)
2-Hexanone	U (1.0)	U (1.0)
4-Methyl-2-pentanone	U (0.56)	U (0.56)
Methylene Chloride	U (0.27)	U (0.27)
Toluene	U (0.14)	U (0.14)
Trichloroethene	4.1 (0.17)	23.7 (0.17)
Vinyl Chloride	U (0.11)	U (0.11)

Notes:
1 All concentrations are presented in µg/L [parts per billion (ppb)].
2 Only chemicals with at least one detection in any water or soil vapor sample are sh
U = Not detected
J = Estimated concentration
( ) = Detection limit
µg/L = Micrograms per liter

RAMBOLL

TABLE 3
ANNUAL 2019 WATER DATA FROM SOIL VAPOR MONITORING POINTS
Whirlpool Facility - Fort Smith, Arkansas

Parcel	Parcel 2	Parcel 2	Parcel 3	Parcel 4	Parcel 5
Location	VP-7	VP-8	VP-10	VP-12	VP-14
Field Sample ID	VP-7-201910	VP-8-201910	VP-10-201910	VP-12-201910	VP-14-201910
Lab Sample ID	60319115039	60319115040	60319115037	60319115038	60319115041
Sample Date	10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/23/2019
Comments					
Volatile Organic Compounds					
Acetone	143 (3.3)	162 (3.3)	15.1 (3.3)	U (3.3)	U (3.3)
Benzene	1.0 (0.079)	0.90 J (0.079)	0.50 J (0.079)	0.21 J (0.079)	0.25 J (0.079)
Bromoform	U (0.21)	U (0.21)	U (0.21)	U (0.21)	U (0.21)
Bromomethane	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (0.32)
2-Butanone	14.7 (0.70)	18.6 (0.70)	5.4 J (0.70)	U (0.70)	U (0.70)
Carbon Disulfide	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.16)
Chlorobenzene	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.13)
Chloroform	U (0.10)	U (0.10)	2.9 (0.10)	0.23 J (0.10)	0.40 J (0.10)
Chloromethane	0.40 J (0.16)	0.66 J (0.16)	U (0.16)	U (0.16)	U (0.16)
1,2-Dichloroethane	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.14)
1,1-Dichloroethene	U (0.22)	U (0.22)	1.4 (0.22)	U (0.22)	1.1 (0.22)
cis-1,2-Dichloroethene	U (0.17)	0.23 J (0.17)	11.9 (0.17)	U (0.17)	3.9 (0.17)
trans-1,2-Dichloroethene	U (0.17)	U (0.17)	0.30 J (0.17)	U (0.17)	0.36 J (0.17)
Ethyl Benzene	U (0.12)	U (0.12)	0.15 J (0.12)	U (0.12)	U (0.12)
2-Hexanone	1.6 J (1.0)	3.4 J (1.0)	U (1.0)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	1.8 J (0.56)	1.5 J (0.56)	0.83 J (0.56)	U (0.56)	U (0.56)
Methylene Chloride	U (0.27)	U (0.27)	0.31 J (0.27)	U (0.27)	U (0.27)
Toluene	0.28 J (0.14)	0.50 J (0.14)	1.1 (0.14)	U (0.14)	U (0.14)
Trichloroethene	U (0.17)	5.8 (0.17)	3.3 J (0.85)	U (0.17)	87.9 (0.17)
Vinyl Chloride	U (0.11)	0.26 J (0.11)	0.52 J (0.11)	U (0.11)	U (0.11)

Notes:
1 All concentrations are presented in µg/L [parts per billion (ppb)].
2 Only chemicals with at least one detection in any water or soil vapor sample are shown.
U = Not detected
J = Estimated concentration
( ) = Method detection limit
µg/L = Micrograms per liter

RAMBOLL

TABLE 4
UPPER-BOUND VAPOR INTRUSION RISK ESTIMATES
BASED ON ANNUAL 2019 GROUNDWATER DATA IN THE NEIGHBORHOOD
Whirlpool Facility - Fort Smith, Arkansas

Chemical	CASRN	Maximum Detected Concentration in Groundwater in Neighborhood (mg/L)	Location of Maximum Detected Concentration in Groundwater in Neighborhood	Residential Vapor Intrusion	
				Risk	HQ
Volatile Organic Compounds					
Acetone	67-64-1	4.20E-03	MW-194		2.8E-08
Bromoform	75-25-2	7.90E-04	MW-82	8.3E-11	
Bromomethane	74-83-9	4.00E-04	MW-82		1.2E-04
Carbon Disulfide	75-15-0	4.00E-04	MW-175		1.6E-06
Chlorobenzene	108-90-7	1.70E-04	MW-60R		3.2E-06
Chloroform	67-66-3	1.30E-04	MW-46R	1.6E-09	3.2E-06
Chloromethane	74-87-3	5.00E-04	MW-82		8.7E-06
1,2-Dichloroethane	107-06-2	1.40E-04	MW-82	1.0E-09	1.3E-05
1,1-Dichloroethene	75-35-4	2.40E-03	MW-46R		3.1E-05
cis-1,2-Dichloroethene	156-59-2	2.88E-02	MW-176		
trans-1,2-Dichloroethene	156-60-5	7.20E-04	MW-46R		
Trichloroethene	79-01-6	6.49E-01	MW-56R	2.4E-06	5.0E-01
Vinyl Chloride	75-01-4	1.65E-02	MW-176	3.4E-07	5.2E-04
Cumulative Risk and HI:				3E-06	5E-01

Notes:

mg/L = Milligrams per liter

HQ = Hazard quotient

Only COCs detected in monitoring wells in the neighborhood are shown.

Detected concentrations are from samples collected from groundwater monitoring wells in the 2019 Annual Sampling Event.

Risks were calculated using the model derived by Johnson & Ettinger (1991), as discussed in Section 3.3.1 of the April 2013 Revised Risk Management Plan.

RAMBOLL

TABLE 5
EVALUATION OF VOLATILE ORGANIC COMPOUNDS IN WATER AT PARCELS IN THE NEIGHBORHOOD
Whirlpool Facility - Fort Smith, Arkansas

Chemical	CASRN	Parcel 2									Parcel 3						Parcel 4		
		5.5 feet bgs			10.5 feet bgs			12 feet bgs			11 feet bgs			12 feet bgs			12.5 feet bgs		
		VP-7			VP-8			MW-175			VP-10			MW-176			VP-12		
		Perched Water			Perched Water			Groundwater			Perched Water			Groundwater			Groundwater		
		Conc	Risk	HQ	Conc	Risk	HQ	Conc	Risk	HQ	Conc	Risk	HQ	Conc	Risk	HQ	Conc	Risk	HQ
Volatile Organic Compounds																			
Acetone	67-64-1	1.43E-01		2.1E-06	1.62E-01		1.2E-06				1.51E-02		1.1E-07						
Benzene	71-43-2	1.00E-03	4.9E-09	4.9E-05	9.0E-04	4.0E-09	4.0E-05				5.00E-04	2.2E-09	2.2E-05				2.10E-04	9.2E-10	9.2E-06
2-Butanone	78-93-3	1.47E-02		1.3E-06	1.9E-02		8.2E-07				5.40E-03		2.3E-07						
Carbon Disulfide	75-15-0							4.00E-04		1.6E-06									
Chloroform	67-66-3										2.90E-03	3.5E-08	7.1E-05				2.30E-04	2.7E-09	5.6E-06
Chloromethane	74-87-3	4.00E-04		7.2E-06	6.6E-04		1.1E-05												
1,1-Dichloroethene	75-35-4							5.90E-04		7.6E-06	1.40E-03		1.8E-05	1.60E-03		2.1E-05			
cis-1,2-Dichloroethene	156-59-2				2.3E-04			2.20E-03			1.19E-02			2.88E-02					
trans-1,2-Dichloroethene	156-60-5										3.00E-04			4.70E-04					
Ethyl Benzene	100-41-4										1.50E-04		1.8E-07						
2-Hexanone	591-78-6	1.60E-03		2.3E-05	3.4E-03		2.8E-05												
4-Methyl-2-pentanone	108-10-1	1.80E-03		2.5E-07	1.5E-03		1.2E-07				8.30E-04		6.6E-08						
Methylene Chloride	75-09-2										3.10E-04	3.6E-12	5.6E-07						
Toluene	108-88-3	2.80E-04		7.9E-08	5.0E-04		1.3E-07				1.10E-03		2.8E-07						
Trichloroethene	79-01-6				5.8E-03	2.2E-08	4.5E-03	1.38E-01	5.1E-07	1.1E-01	3.30E-03	1.2E-08	2.6E-03	3.17E-01	1.2E-06	2.4E-01			
Vinyl Chloride	75-01-4				2.6E-04	5.3E-09	8.2E-06	1.60E-04	3.3E-09	5.1E-06	5.20E-04	1.1E-08	1.7E-05	1.65E-02	3.4E-07	5.2E-04			
Cumulative Risk and HI:		--	5E-09	8E-05	--	3E-08	5E-03	--	5E-07	1E-01	--	6E-08	3E-03	--	2E-06	2E-01	--	4E-09	1E-05

Notes:

bgs = Below ground surface

HQ = Hazarad quotient

mg/L = Milligrams per liter

mg/m^3 = Milligrams per cubic meter

Groundwater and perched water concentrations are in mg/L; soil vapor concentrations are in mg/m^3.

Only COCs detected in the 2019 Annual Sampling Event samples at locations listed on the table are shown.

Risk and HQ estimates were not calculated for detected chemicals with inadequate toxicity or physical/chemical parameters or where chemical concentrations were non-detect.

Risks based on soil vapor data were calculated using USEPA's default attenuation factor for subslab gas to indoor air of 0.03, as discussed in Section 6.8.2 of the April 2013 Revised Risk Management Plan.

Risks based on concentrations measured in groundwater were calculated using the model derived by Johnson & Ettinger (1991), as discussed in Section 3.3.1 of the April 2013 Revised Risk Management Plan.

Risks based on concentrations measured in water from the soil vapor ports or shallow groundwater were calculated using the same approach used for groundwater, except the depth was assumed to be the depth of the port or the depth of the screen, respectively, as discussed in Section 3 of the Annual 2016 Vapor Intrusion Report.

Upper-bound cumulative cancer risk and HI estimates in excess of Arkansas Department of Environmental Quality (ADEQ)'s RME cumulative cancer and noncancer risk limits (1E-4 and 1, respectively) are shaded in bold.

RAMBOLL

TABLE 6
SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE IN SHALLOW WELLS AND AT VAPOR POINTS IN THE NEIGHBORHOOD FROM 2015 TO PRESENT
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	
			Result	Qual
MW-173	MW-173-201504	4/15/2015	< 1.0	U
MW-173	MW-173-201507	7/22/2015	< 1.0	U
MW-173	MW-173-201510	10/6/2015	< 1.0	U
MW-173	MW-173-201601	1/12/2016	< 1.0	U
MW-173	MW-173-201605	5/4/2016	< 1.0	U
MW-174	MW-174-GW-20150120	1/20/2015	< 1.0	U
MW-174	MW-174-201504	4/14/2015	0.68	J
MW-174	MW-174-201507	7/21/2015	< 1.0	U
MW-174	MW-174-201510	10/6/2015	< 1.0	U
MW-174	MW-174-201601	1/12/2016	< 1.0	U
MW-174	MW-174-201605	5/4/2016	< 1.0	U
MW-175	MW-175-GW-20150120	1/20/2015	123	
MW-175	MW-175-201504	4/15/2015	98.8	
MW-175	MW-175-201507	7/21/2015	20.3	
MW-175	MW-175-201510	10/7/2015	78.6	
MW-175	MW-175-201601	1/11/2016	52.6	
MW-175	MW-175-201605	5/3/2016	54.9	
MW-175	MW-175-201611	11/8/2016	50.9	
MW-175	MW-175-201704	4/28/2017	53.2	
MW-175	MW-175-201710	10/24/2017	72.2	
MW-175	MW-175-201804	4/18/2018	117	
MW-175	MW-175-201811	11/13/2018	70.7	
MW-175	MW-175-201904	4/23/2019	102	
MW-175	MW-175-201910	10/23/2019	138	
MW-176	MW-176-GW-20150120	1/20/2015	720	
MW-176	MW-176-201504	4/14/2015	528	
MW-176	MW-176-201507	7/21/2015	575	
MW-176	MW-176-201510	10/6/2015	420	
MW-176	MW-176-201601	1/12/2016	306	
MW-176	MW-176-201605	5/3/2016	389	
MW-176	MW-176-201611	11/8/2016	320	
MW-176	MW-176-201704	4/28/2017	355	
MW-176	MW-176-201710	10/24/2017	281	
MW-176	MW-176-201804	4/17/2018	426	
MW-176	MW-176-201811	11/13/2018	397	
MW-176	MW-176-201904	4/23/2019	503	
MW-176	MW-176-201910	10/22/2019	317	
MW-177	MW-177-GW-20150121	1/21/2015	< 1.0	U
MW-177	MW-177-201504	4/14/2015	< 1.0	U
MW-177	MW-177-201510	10/6/2015	< 1.0	U
MW-177	MW-177-201601	1/11/2016	< 1.0	U
MW-177	MW-177-201605	5/2/2016	< 1.0	U

RAMBOLL

TABLE 6
SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE IN SHALLOW WELLS AND AT VAPOR POINTS IN THE NEIGHBORHOOD FROM 2015 TO PRESENT
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	
			Result	Qual
MW-178	MW-178-GW-20150118	1/18/2015	5.2	
MW-178	MW-178-201504	4/16/2015	5.0	
MW-178	MW-178-201507	7/22/2015	4.6	
MW-178	MW-178-201510	10/7/2015	5.8	
MW-178	MW-178-201611	11/10/2016	3.2	
MW-178	MW-178-201704	4/27/2017	4.6	
MW-178	FD-06-201710	10/25/2017	3.6	
MW-178	MW-178-201710	10/25/2017	3.9	
MW-178	MW-178-201804	4/18/2018	5.3	
MW-178	MW-178-201811	11/14/2018	4.5	
MW-178	MW-178-201904	4/24/2019	2.9	
MW-178	MW-178-201910	10/23/2019	4.1	
MW-179	MW-179-201504	4/16/2015	41.2	
MW-179	MW-179-201507	7/22/2015	27.3	
MW-179	MW-179-201601	1/13/2016	30.6	
MW-179	MW-179-201605	5/4/2016	6.6	
MW-179	MW-179-201704	4/28/2017	20.4	
MW-179	MW-179-201710	10/26/2017	10.7	
MW-179	MW-179-201804	4/19/2018	21.7	
MW-179	MW-179-201811	11/13/2018	1.4	
MW-179	MW-179-201904	4/24/2019	8.9	
MW-179	MW-179-201910	10/24/2019	23.7	
MW-180	MW-180-GW-20150119	1/19/2015	23.7	
MW-180	MW-180-201504	4/16/2015	21.4	
MW-180	MW-180-201507	7/22/2015	22.1	
MW-180	MW-180-201510	10/7/2015	18.5	
MW-180	MW-180-201601	1/14/2016	10.6	
MW-180	MW-180-201605	5/5/2016	10.3	
MW-181	MW-181-GW-20150121	1/21/2015	< 1.0	U
MW-181	MW-181-201504	4/14/2015	< 1.0	U
MW-181	MW-181-201507	7/21/2015	< 1.0	U
MW-181	MW-181-201601	1/11/2016	< 1.0	U
MW-181	MW-181-201605	5/4/2016	< 1.0	U
VP-5	VP-05-20150422	4/22/2015	< 1.0	U
VP-5	VP-05-201507	7/30/2015	< 1.0	U
VP-5	VP-05-201510	10/6/2015	< 1.0	U
VP-5	VP-05-201601	1/12/2016	< 1.0	U
VP-5	VP-05-201605	5/4/2016	0.66	J
VP-5	VP-05-201611	11/8/2016	< 1.0	U
VP-6	VP-06-GW-20150120	1/20/2015	4.3	
VP-6	VP-06-20150422	4/22/2015	2.3	
VP-6	VP-06-201507	7/30/2015	0.76	J
VP-6	VP-06-201510	10/6/2015	0.75	J
VP-6	VP-06-201601	1/12/2016	1.3	
VP-6	VP-06-201605	5/4/2016	0.78	J
VP-6	VP-06-201611	11/8/2016	< 1.0	U

TABLE 6
SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE IN SHALLOW WELLS AND AT VAPOR POINTS IN THE NEIGHBORHOOD FROM 2015 TO PRESENT
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	
			Result	Qual
VP-7	VP-07-201601	1/11/2016	< 1.0	U
VP-7	VP-07-201605	5/3/2016	< 1.0	U
VP-7	VP-07-201611	11/8/2016	< 1.0	U
VP-7	VP-07-201704	5/3/2017	< 1.0	U
VP-7	VP-07-201710	10/25/2017	0.71	J
VP-7	VP-7-201804	4/19/2018	< 1.0	U
VP-7	VP-7-201811	11/15/2018	< 1.0	U
VP-7	VP-7-201904	4/24/2019	< 1.0	U
VP-7	VP-7-201910	10/23/2019	< 1.0	U
VP-8	VP-08-20150422	4/22/2015	1.2	
VP-8	VP-08-201507	7/30/2015	2.2	
VP-8	VP-08-201510	10/7/2015	2.5	B
VP-8	VP-08-201601	1/11/2016	3.2	
VP-8	VP-08-201605	5/3/2016	3.8	
VP-8	VP-08-201611	11/8/2016	2.4	
VP-8	VP-08-201704	5/3/2017	2.5	
VP-8	VP-08-201710	10/25/2017	2.9	
VP-8	VP-8-201804	4/19/2018	3.4	
VP-8	VP-8-201811	11/15/2018	4.5	
VP-8	VP-8-201904	4/24/2019	4.8	
VP-8	VP-8-201910	10/23/2019	5.8	
VP-9	VP-09-201507	7/30/2015	2.4	
VP-10	VP-10-GW-20150120	1/20/2015	636	
VP-10	VP-10-20150422	4/22/2015	395	
VP-10	VP-10-201507	7/30/2015	6.1	
VP-10	VP-10-201510	10/6/2015	198	
VP-10	VP-10-201601	1/12/2016	823	
VP-10	VP-10-201605	5/3/2016	376	
VP-10	VP-10-201611	11/8/2016	278	
VP-10	VP-10-201704	5/3/2017	198	
VP-10	VP-10-201710	10/25/2017	211	
VP-10	VP-10-201804	4/19/2018	357	
VP-10	VP-10-201811	11/15/2018	250	
VP-10	VP-10-201904	4/24/2019	211	
VP-10	VP-10-201910	10/23/2019	3.3	J
VP-12	VP-12-GW-20150121	1/21/2015	< 1.0	U
VP-12	VP-12-20150422	4/22/2015	< 1.0	U
VP-12	VP-12-201507	7/30/2015	< 1.0	U
VP-12	VP-12-201510	10/7/2015	< 1.0	U
VP-12	VP-12-201601	1/11/2016	< 1.0	U
VP-12	VP-12-201605	5/2/2016	< 1.0	U
VP-12	VP-12-201611	11/8/2016	0.55	J
VP-12	VP-12-201704	5/3/2017	< 1.0	U
VP-12	VP-12-201710	10/25/2017	0.22	J
VP-12	VP-12-201804	4/19/2018	< 1.0	U
VP-12	VP-12-201811	11/15/2018	< 1.0	U
VP-12	VP-12-201904	4/24/2019	< 1.0	U
VP-12	VP-12-201910	10/23/2019	< 1.0	U

TABLE 6
SUMMARY OF GROUNDWATER CONCENTRATIONS FOR TCE IN SHALLOW WELLS AND AT VAPOR POINTS IN THE NEIGHBORHOOD FROM 2015 TO PRESENT
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Sample Name	Date	Trichloroethene	
			Result	Qual
VP-14	VP-14-201507	7/30/2015	55.6	
VP-14	VP-14-201510	10/7/2015	59.3	
VP-14	VP-14-201601	1/13/2016	65.6	
VP-14	VP-14-201605	5/4/2016	54.5	
VP-14	VP-14-201704	5/3/2017	62.9	
VP-14	VP-14-201710	10/25/2017	69.0	
VP-14	VP-14-201804	4/19/2018	55.8	
VP-14	VP-14-201811	11/15/2018	64.1	
VP-14	VP-14-201904	4/24/2019	53.6	
VP-14	VP-14-201910	10/23/2019	87.9	
VP-15	VP-15-GW-20150701	7/1/2015	< 1.0	U
VP-15	VP-15-201510	10/7/2015	< 1.0	U
VP-15	VP-15-201601	1/11/2016	< 1.0	U
VP-15	VP-15-201605	5/2/2016	< 1.0	U

Notes:

All results in micrograms per liter (µg/L)

RAMBOLL

TABLE 7
EVALUATION OF VOLATILE ORGANIC COMPOUNDS IN WATER AT PARCEL 5 (SOUTH OF NEIGHBORHOOD)
Whirlpool Facility - Fort Smith, Arkansas

Chemical	CASRN	7.5 feet bgs			10.5 feet bgs			12 feet bgs		
		MW-178			VP-14			MW-179		
		Perched Water			Perched Water			Groundwater		
		Conc	Risk	HQ	Conc	Risk	HQ	Conc	Risk	HQ
Volatile Organic Compounds										
Benzene	71-43-2				2.5E-04	1.1E-09	1.1E-05			
Chloroform	67-66-3				4.0E-04	4.8E-09	9.8E-06			
1,1-Dichloroethene	75-35-4				1.1E-03		1.4E-05			
cis-1,2-Dichloroethene	156-59-2	1.2E-03			3.9E-03			7.4E-04		
trans-1,2-Dichloroethene	156-60-5				3.6E-04					
Trichloroethene	79-01-6	4.1E-03	1.6E-08	3.3E-03	8.8E-02	3.3E-07	6.8E-02	2.4E-02	8.8E-08	1.8E-02
Cumulative Risk and HI:		--	2E-08	3E-03	--	3E-07	7E-02	--	9E-08	2E-02

Notes:

bgs = Below ground surface

mg/L = Milligrams per liter

HQ = Hazard quotient

Groundwater and perched water concentrations are in mg/L.

Only COCs detected in the 2019 Annual Samping Event samples at locations listed on the table are shown.

Risk and HQ estimates were not calculated for detected chemicals with inadequate toxicity or physical/chemical parameters or where chemical concentrations were non-detect.

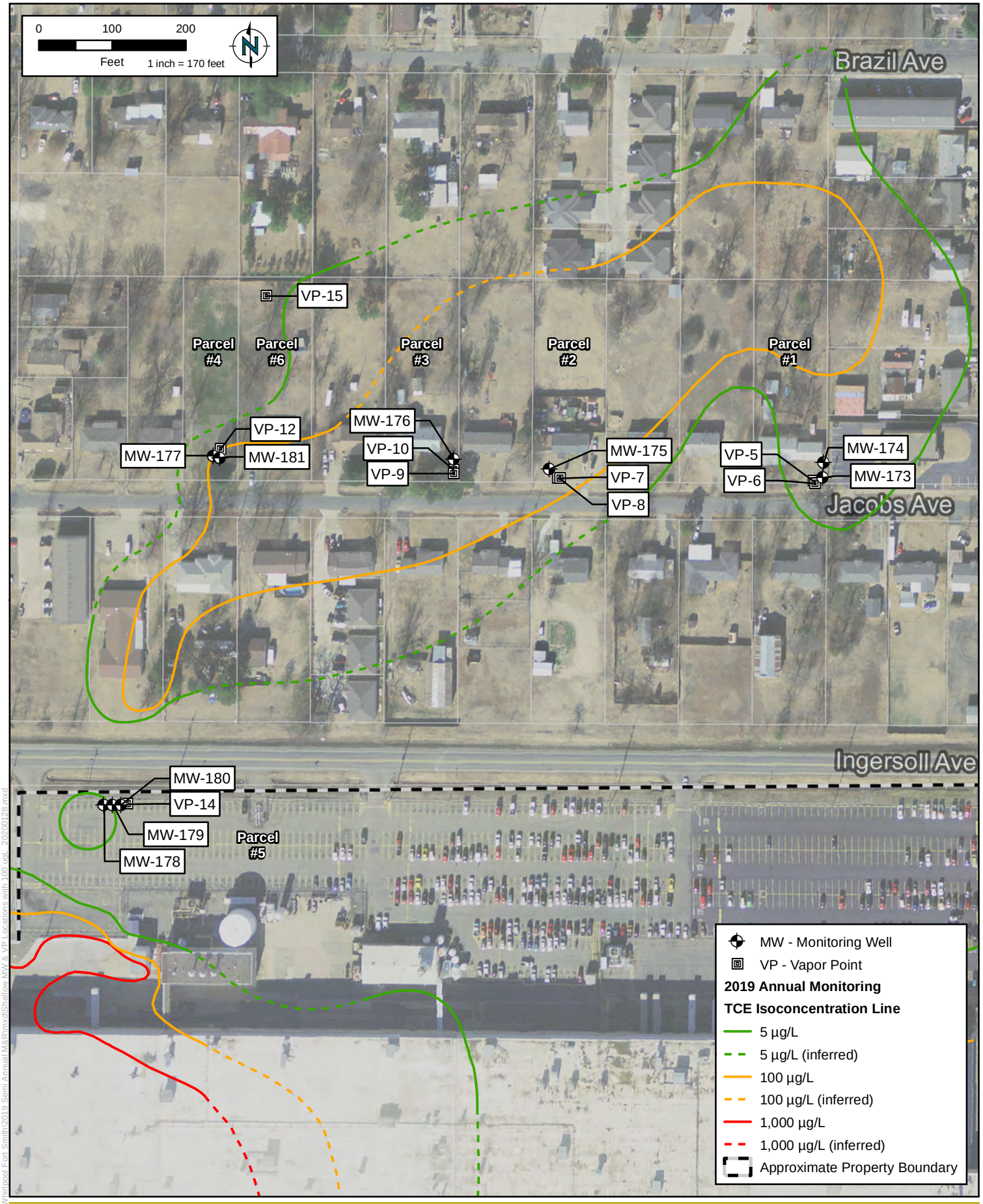
Risks based on concentrations measured in groundwater were calculated using the model derived by Johnson & Ettinger (1991), as discussed in Section 3.3.1 of the April 2013 Revised Risk Management Plan.

Risks based on concentrations measured in shallow groundwater were calculated using the same approach used for groundwater, except the depth was assumed to be the depth of the screen, as discussed in Section 3 of the Annual 2017 Vapor Intrusion Report.

Cumulative cancer risk and HI estimates were below Arkansas Department of Environmental Quality (ADEQ)'s risk limits (1E-4 and 1, respectively).

RAMBOLL

Figures



RAMBOLL

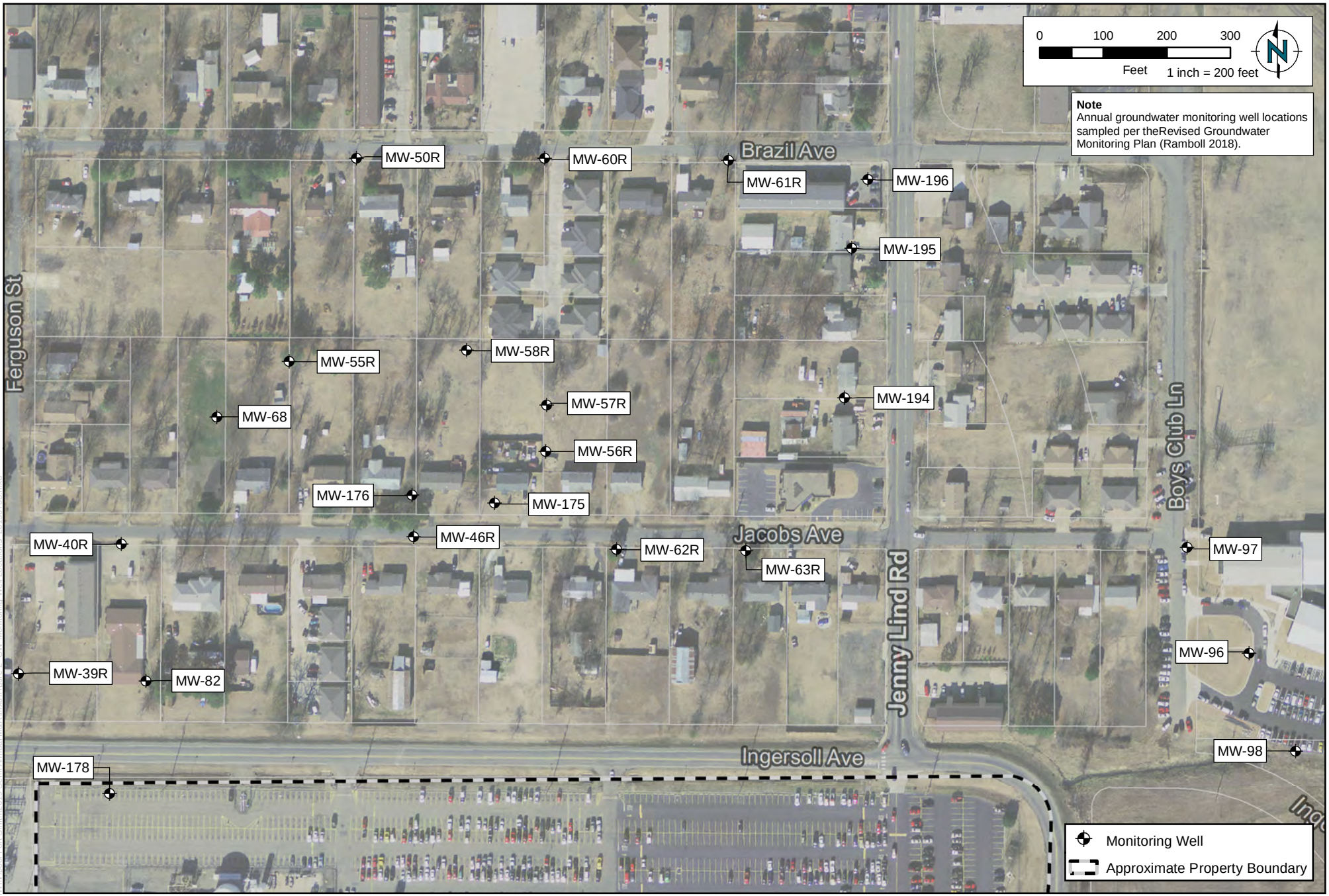
SHALLOW MONITORING WELL AND VAPOR POINT LOCATIONS

Whirlpool Facility - Fort Smith, Arkansas

Figure 1

DRAFTED BY: FK | DATE: 01/28/2020 | PROJECT: 1690015112

FILE: I:\Loop Project Files\Whirlpool Fort Smith\2019 Semi Annual M&R\mxd\Shallow MW & VP Locations with 100 ug\L_20200128.mxd



RAMBOLL

DRAFTED BY: FK

DATE: 07/03/2019

GROUNDWATER MONITORING WELL LOCATIONS

Whirlpool Facility - Fort Smith, Arkansas

Figure 2

PROJECT: 1690012820

FILE: L:\Loop Project Files\Whirlpool Fort Smith\2019 Semi Annual M&R\mxd\Figure 2_GW Monitoring Well Locations_20190703.mxd

Appendix A
Laboratory Analytical Data

Appendix A
Laboratory Analytical Data

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 15, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on October 23, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

REV-1, 11/15/19: Revised to include both Pace Energy reports.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60318969001	**MW-176-201910**	Water	10/22/19 15:55	10/23/19 09:45
60318969002	**MW-187-201910**	Water	10/22/19 14:25	10/23/19 09:45
60318969003	**MW-188-201910**	Water	10/22/19 14:05	10/23/19 09:45
60318969004	**MW-62R-201910**	Water	10/22/19 13:09	10/23/19 09:45
60318969005	**MW-68-201910**	Water	10/22/19 14:34	10/23/19 09:45
60318969006	**MW-40R-201910**	Water	10/22/19 16:05	10/23/19 09:45
60318969007	**MW-191-201910**	Water	10/22/19 12:55	10/23/19 09:45
60318969008	**MW-190-201910**	Water	10/22/19 14:25	10/23/19 09:45
60318969009	**MW-192-201910**	Water	10/22/19 14:25	10/23/19 09:45
60318969010	**TMW-35-201910**	Water	10/22/19 15:50	10/23/19 09:45
60318969011	**MW-63R-201910**	Water	10/22/19 13:10	10/23/19 09:45
60318969012	**MW-39R-201910**	Water	10/22/19 14:30	10/23/19 09:45
60318969013	**EB-01-201910**	Water	10/22/19 16:50	10/23/19 09:45
60318969014	**TB-01-201910**	Water	10/22/19 17:05	10/23/19 09:45
60318969015	**MW-195-201910**	Water	10/22/19 16:20	10/23/19 09:45
60318969016	**TMW-29-201910**	Water	10/22/19 14:30	10/23/19 09:45
60318969017	**TMW-20-201910**	Water	10/22/19 14:05	10/23/19 09:45
60318969018	**TB-02-201910**	Water	10/22/19 17:15	10/23/19 09:45
60318969019	**ITMW-7-201910**	Water	10/22/19 17:15	10/23/19 06:20
60318969020	**TMW-21-201910**	Water	10/22/19 16:00	10/23/19 06:20
60318969021	**TMW-11-201910**	Water	10/22/19 13:45	10/23/19 06:20
60318969022	**TMW-10-201910**	Water	10/22/19 14:05	10/23/19 06:20
60318969023	**MW-89-201910**	Water	10/22/19 16:30	10/23/19 06:20

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60318969001	**MW-176-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969002	**MW-187-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969003	**MW-188-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969004	**MW-62R-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969005	**MW-68-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969006	**MW-40R-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969007	**MW-191-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969008	**MW-190-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969009	**MW-192-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969010	**TMW-35-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969011	**MW-63R-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969012	**MW-39R-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969013	**EB-01-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969014	**TB-01-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969015	**MW-195-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969016	**TMW-29-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969017	**TMW-20-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969018	**TB-02-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969019	**ITMW-7-201910**	EPA 5030B/8260	PGH	38	PASI-K
60318969020	**TMW-21-201910**	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60318969021	**TMW-11-201910**	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60318969022	**TMW-10-201910**	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	AJS	3	PASI-K

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60318969023	**MW-89-201910**	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
4 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
23 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
3 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
4 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 620217

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60318275001,60318978002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2529352)
  - Chloride
  - Sulfate
- MS (Lab ID: 2529354)
  - Sulfate
- MSD (Lab ID: 2529353)
  - Chloride
  - Sulfate

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 unpres
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
4 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 617944

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60318969021,60319009002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2521248)
  - Nitrogen, Nitrite

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Method: **SM 5310C**
Description: 5310C TOC
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
4 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 619144

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60319126003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2525749)
  - Total Organic Carbon

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Method: **SM 5310C**
Description: 5310C Diss. Organic Carbon LF
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
3 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 619520

B: Analyte was detected in the associated method blank.

- BLANK for HBN 619520 [WETA/631 (Lab ID: 2526889)
  - Dissolved Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-176-201910 **Lab ID: 60318969001** Collected: 10/22/19 15:55 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 06:23	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 06:23	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 06:23	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 06:23	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 06:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 06:23	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 06:23	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 06:23	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 06:23	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 06:23	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 06:23	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 06:23	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 06:23	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 06:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 06:23	107-06-2	
1,1-Dichloroethene	**1.6**	ug/L	1.0	0.22	1		10/31/19 06:23	75-35-4	
cis-1,2-Dichloroethene	**28.8**	ug/L	1.0	0.17	1		10/31/19 06:23	156-59-2	
trans-1,2-Dichloroethene	**0.47J**	ug/L	1.0	0.17	1		10/31/19 06:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 06:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 06:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 06:23	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 06:23	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 06:23	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 06:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 06:23	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 06:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 06:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 06:23	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 06:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 06:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 06:23	79-00-5	
Trichloroethene	**317**	ug/L	10.0	1.7	10		11/01/19 00:24	79-01-6	
Vinyl chloride	**16.5**	ug/L	1.0	0.11	1		10/31/19 06:23	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 06:23	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 06:23	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		10/31/19 06:23	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/31/19 06:23	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 06:23		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-187-201910 **Lab ID: 60318969002** Collected: 10/22/19 14:25 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 04:43	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 04:43	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 04:43	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 04:43	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 04:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 04:43	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 04:43	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 04:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 04:43	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 04:43	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 04:43	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 04:43	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 04:43	124-48-1	
1,1-Dichloroethane	**0.31J**	ug/L	1.0	0.097	1		10/31/19 04:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 04:43	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 04:43	75-35-4	
cis-1,2-Dichloroethene	**2.2**	ug/L	1.0	0.17	1		10/31/19 04:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 04:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 04:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 04:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 04:43	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 04:43	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 04:43	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 04:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 04:43	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 04:43	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 04:43	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 04:43	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 04:43	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 04:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 04:43	79-00-5	
Trichloroethene	**3.5**	ug/L	1.0	0.17	1		10/31/19 04:43	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 04:43	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 04:43	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 04:43	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/31/19 04:43	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 04:43	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 04:43		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-188-201910 **Lab ID: 60318969003** Collected: 10/22/19 14:05 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 04:57	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 04:57	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 04:57	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 04:57	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 04:57	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 04:57	78-93-3	
Carbon disulfide	**0.19J**	ug/L	5.0	0.16	1		10/31/19 04:57	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 04:57	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 04:57	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 04:57	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 04:57	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 04:57	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 04:57	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 04:57	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 04:57	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 04:57	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 04:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 04:57	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 04:57	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 04:57	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 04:57	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 04:57	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 04:57	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 04:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 04:57	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 04:57	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 04:57	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 04:57	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 04:57	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 04:57	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 04:57	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 04:57	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 04:57	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 04:57	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		10/31/19 04:57	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/31/19 04:57	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 04:57	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 04:57		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-62R-201910 **Lab ID: 60318969004** Collected: 10/22/19 13:09 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 05:12	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 05:12	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 05:12	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 05:12	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 05:12	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 05:12	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 05:12	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 05:12	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 05:12	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 05:12	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 05:12	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 05:12	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 05:12	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 05:12	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 05:12	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:12	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:12	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:12	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 05:12	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 05:12	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 05:12	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 05:12	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 05:12	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 05:12	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 05:12	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 05:12	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 05:12	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:12	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 05:12	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 05:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 05:12	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:12	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 05:12	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 05:12	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 05:12	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		10/31/19 05:12	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 05:12	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 05:12		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-68-201910 **Lab ID: 60318969005** Collected: 10/22/19 14:34 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 05:26	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 05:26	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 05:26	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 05:26	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 05:26	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 05:26	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 05:26	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 05:26	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 05:26	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 05:26	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 05:26	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 05:26	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 05:26	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 05:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 05:26	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 05:26	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 05:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 05:26	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 05:26	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 05:26	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 05:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 05:26	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 05:26	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 05:26	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:26	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 05:26	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 05:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 05:26	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:26	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 05:26	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 05:26	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 05:26	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		10/31/19 05:26	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 05:26	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 05:26		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-40R-201910 **Lab ID: 60318969006** Collected: 10/22/19 16:05 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 05:40	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 05:40	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 05:40	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 05:40	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 05:40	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 05:40	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 05:40	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 05:40	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 05:40	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 05:40	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 05:40	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 05:40	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 05:40	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 05:40	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 05:40	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:40	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:40	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:40	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 05:40	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 05:40	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 05:40	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 05:40	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 05:40	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 05:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 05:40	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 05:40	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 05:40	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:40	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 05:40	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 05:40	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 05:40	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:40	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 05:40	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 05:40	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/31/19 05:40	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/31/19 05:40	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 05:40	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 05:40		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-191-201910 **Lab ID: 60318969007** Collected: 10/22/19 12:55 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 05:54	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 05:54	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 05:54	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 05:54	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 05:54	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 05:54	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 05:54	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 05:54	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 05:54	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 05:54	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 05:54	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 05:54	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 05:54	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 05:54	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 05:54	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:54	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:54	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:54	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 05:54	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 05:54	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 05:54	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 05:54	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 05:54	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 05:54	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 05:54	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 05:54	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 05:54	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:54	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 05:54	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 05:54	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 05:54	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:54	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 05:54	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 05:54	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/31/19 05:54	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		10/31/19 05:54	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 05:54	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 05:54		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-190-201910 **Lab ID: 60318969008** Collected: 10/22/19 14:25 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 06:08	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 06:08	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 06:08	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 06:08	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 06:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 06:08	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 06:08	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 06:08	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 06:08	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 06:08	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 06:08	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 06:08	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 06:08	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 06:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 06:08	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 06:08	75-35-4	
cis-1,2-Dichloroethene	**0.21J**	ug/L	1.0	0.17	1		10/31/19 06:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 06:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 06:08	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 06:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 06:08	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 06:08	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 06:08	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 06:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 06:08	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 06:08	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 06:08	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 06:08	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 06:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 06:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 06:08	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 06:08	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 06:08	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 06:08	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 06:08	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/31/19 06:08	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 06:08	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 06:08		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-192-201910 **Lab ID: 60318969009** Collected: 10/22/19 14:25 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 21:34	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 21:34	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 21:34	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 21:34	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 21:34	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 21:34	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 21:34	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 21:34	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 21:34	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 21:34	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 21:34	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 21:34	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 21:34	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 21:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 21:34	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 21:34	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 21:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 21:34	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 21:34	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 21:34	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 21:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 21:34	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 21:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 21:34	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:34	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 21:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 21:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 21:34	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:34	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 21:34	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 21:34	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 21:34	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		10/31/19 21:34	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		10/31/19 21:34	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 21:34		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-35-201910 **Lab ID: 60318969010** Collected: 10/22/19 15:50 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 23:56	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 23:56	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 23:56	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 23:56	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 23:56	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 23:56	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 23:56	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 23:56	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 23:56	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 23:56	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 23:56	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 23:56	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 23:56	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 23:56	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 23:56	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:56	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 23:56	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 23:56	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 23:56	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 23:56	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 23:56	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 23:56	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 23:56	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 23:56	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 23:56	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 23:56	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 23:56	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:56	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 23:56	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 23:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 23:56	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 23:56	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 23:56	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 23:56	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 23:56	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/31/19 23:56	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 23:56	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 23:56		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-63R-201910 **Lab ID: 60318969011** Collected: 10/22/19 13:10 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 21:48	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 21:48	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 21:48	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 21:48	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 21:48	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 21:48	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 21:48	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 21:48	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 21:48	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 21:48	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 21:48	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 21:48	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 21:48	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 21:48	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 21:48	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:48	75-35-4	
cis-1,2-Dichloroethene	**0.59J**	ug/L	1.0	0.17	1		10/31/19 21:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:48	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 21:48	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 21:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 21:48	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 21:48	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 21:48	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 21:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 21:48	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 21:48	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 21:48	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:48	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 21:48	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 21:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 21:48	79-00-5	
Trichloroethene	**7.4**	ug/L	1.0	0.17	1		10/31/19 21:48	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 21:48	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 21:48	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 21:48	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/31/19 21:48	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 21:48	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 21:48		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-39R-201910 **Lab ID: 60318969012** Collected: 10/22/19 14:30 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 22:02	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 22:02	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 22:02	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 22:02	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 22:02	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 22:02	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 22:02	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 22:02	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 22:02	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 22:02	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 22:02	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 22:02	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 22:02	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 22:02	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 22:02	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:02	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 22:02	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 22:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 22:02	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 22:02	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 22:02	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 22:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 22:02	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 22:02	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 22:02	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:02	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 22:02	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 22:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 22:02	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:02	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 22:02	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 22:02	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 22:02	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/31/19 22:02	17060-07-0	
Toluene-d8 (S)	104	%	80-120		1		10/31/19 22:02	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 22:02		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: EB-01-201910 **Lab ID: 60318969013** Collected: 10/22/19 16:50 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 21:20	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 21:20	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 21:20	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 21:20	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 21:20	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 21:20	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 21:20	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 21:20	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 21:20	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 21:20	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 21:20	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 21:20	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 21:20	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 21:20	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 21:20	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:20	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:20	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:20	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 21:20	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 21:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 21:20	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 21:20	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 21:20	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 21:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 21:20	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 21:20	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 21:20	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:20	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 21:20	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 21:20	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 21:20	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:20	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 21:20	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 21:20	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 21:20	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/31/19 21:20	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 21:20	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 21:20		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: TB-01-201910 **Lab ID: 60318969014** Collected: 10/22/19 17:05 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 21:05	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 21:05	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 21:05	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 21:05	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 21:05	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 21:05	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 21:05	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 21:05	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 21:05	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 21:05	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 21:05	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 21:05	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 21:05	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 21:05	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 21:05	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:05	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:05	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:05	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 21:05	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 21:05	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 21:05	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 21:05	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 21:05	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 21:05	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 21:05	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 21:05	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 21:05	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:05	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 21:05	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 21:05	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 21:05	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:05	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 21:05	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 21:05	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 21:05	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		10/31/19 21:05	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 21:05	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 21:05		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-195-201910 **Lab ID: 60318969015** Collected: 10/22/19 16:20 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 22:17	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 22:17	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 22:17	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 22:17	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 22:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 22:17	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 22:17	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 22:17	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 22:17	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 22:17	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 22:17	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 22:17	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 22:17	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 22:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 22:17	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:17	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 22:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 22:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 22:17	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 22:17	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 22:17	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 22:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 22:17	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 22:17	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 22:17	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:17	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 22:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 22:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 22:17	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:17	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 22:17	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 22:17	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 22:17	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/31/19 22:17	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 22:17	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 22:17		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-29-201910 **Lab ID: 60318969016** Collected: 10/22/19 14:30 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 22:31	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 22:31	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 22:31	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 22:31	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 22:31	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 22:31	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 22:31	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 22:31	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 22:31	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 22:31	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 22:31	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 22:31	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 22:31	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 22:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 22:31	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 22:31	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 22:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 22:31	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 22:31	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 22:31	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 22:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 22:31	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 22:31	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 22:31	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:31	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 22:31	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 22:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 22:31	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:31	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 22:31	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 22:31	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 22:31	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/31/19 22:31	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		10/31/19 22:31	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 22:31		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-20-201910 **Lab ID: 60318969017** Collected: 10/22/19 14:05 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 22:45	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 22:45	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 22:45	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 22:45	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 22:45	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 22:45	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 22:45	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 22:45	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 22:45	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 22:45	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 22:45	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 22:45	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 22:45	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 22:45	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 22:45	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:45	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:45	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:45	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 22:45	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 22:45	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 22:45	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 22:45	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 22:45	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 22:45	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 22:45	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 22:45	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 22:45	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:45	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 22:45	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 22:45	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 22:45	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:45	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 22:45	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 22:45	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 22:45	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/31/19 22:45	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 22:45	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 22:45		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: TB-02-201910 **Lab ID: 60318969018** Collected: 10/22/19 17:15 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 20:51	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 20:51	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 20:51	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 20:51	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 20:51	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 20:51	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 20:51	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 20:51	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 20:51	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 20:51	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 20:51	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 20:51	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 20:51	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 20:51	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 20:51	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 20:51	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 20:51	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 20:51	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 20:51	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 20:51	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 20:51	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 20:51	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 20:51	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 20:51	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 20:51	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 20:51	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 20:51	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 20:51	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 20:51	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 20:51	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 20:51	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 20:51	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 20:51	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 20:51	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/31/19 20:51	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/31/19 20:51	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 20:51	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 20:51		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: ITMW-7-201910 **Lab ID: 60318969019** Collected: 10/22/19 17:15 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 22:59	67-64-1	
Benzene	**0.13J**	ug/L	1.0	0.079	1		10/31/19 22:59	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 22:59	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 22:59	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 22:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 22:59	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 22:59	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 22:59	56-23-5	
Chlorobenzene	**4.6**	ug/L	1.0	0.13	1		10/31/19 22:59	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 22:59	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 22:59	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 22:59	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 22:59	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 22:59	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 22:59	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:59	75-35-4	
cis-1,2-Dichloroethene	**6.7**	ug/L	1.0	0.17	1		10/31/19 22:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 22:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 22:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 22:59	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 22:59	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 22:59	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 22:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 22:59	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 22:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 22:59	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:59	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 22:59	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 22:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 22:59	79-00-5	
Trichloroethene	**20.5**	ug/L	1.0	0.17	1		10/31/19 22:59	79-01-6	
Vinyl chloride	**0.13J**	ug/L	1.0	0.11	1		10/31/19 22:59	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 22:59	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 22:59	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/31/19 22:59	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 22:59	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 22:59		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-21-201910 **Lab ID: 60318969020** Collected: 10/22/19 16:00 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**76100**	ug/L	50.0	14.0	1	10/24/19 10:55	10/25/19 14:00	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**202**	ug/L	10.0	3.3	1		11/01/19 00:10	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 00:10	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 00:10	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 00:10	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 00:10	74-83-9	
2-Butanone (MEK)	**309**	ug/L	10.0	0.70	1		11/01/19 00:10	78-93-3	
Carbon disulfide	**0.42J**	ug/L	5.0	0.16	1		11/01/19 00:10	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 00:10	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 00:10	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 00:10	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 00:10	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 00:10	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 00:10	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 00:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 00:10	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 00:10	75-35-4	
cis-1,2-Dichloroethene	**13.5**	ug/L	1.0	0.17	1		11/01/19 00:10	156-59-2	
trans-1,2-Dichloroethene	**0.19J**	ug/L	1.0	0.17	1		11/01/19 00:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 00:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 00:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 00:10	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 00:10	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 00:10	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 00:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.1J**	ug/L	10.0	0.56	1		11/01/19 00:10	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 00:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 00:10	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 00:10	127-18-4	
Toluene	**53.2**	ug/L	1.0	0.14	1		11/01/19 00:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 00:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 00:10	79-00-5	
Trichloroethene	**21.8**	ug/L	1.0	0.17	1		11/01/19 00:10	79-01-6	
Vinyl chloride	**1.9**	ug/L	1.0	0.11	1		11/01/19 00:10	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 00:10	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/01/19 00:10	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/01/19 00:10	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/01/19 00:10	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 00:10		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**204**	mg/L	50.0	11.0	50		11/05/19 20:57	16887-00-6	
Sulfate	**15.3**	mg/L	2.0	0.46	2		11/06/19 14:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-21-201910 **Lab ID: 60318969020** Collected: 10/22/19 16:00 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.15**	mg/L	0.10	0.038	1		10/23/19 17:53		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/23/19 17:53	14797-55-8	
Nitrogen, Nitrite	**0.17**	mg/L	0.10	0.067	1		10/23/19 17:53	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1130**	mg/L	100	29.0	100		10/31/19 17:24	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**883**	mg/L	100	29.0	100		11/01/19 00:45		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-11-201910 **Lab ID: 60318969021** Collected: 10/22/19 13:45 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**7540**	ug/L	50.0	14.0	1	10/24/19 10:55	10/25/19 14:08	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 23:13	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 23:13	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 23:13	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 23:13	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 23:13	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 23:13	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 23:13	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 23:13	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 23:13	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 23:13	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 23:13	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 23:13	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 23:13	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 23:13	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 23:13	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:13	75-35-4	
cis-1,2-Dichloroethene	**0.79J**	ug/L	1.0	0.17	1		10/31/19 23:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 23:13	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 23:13	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 23:13	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 23:13	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 23:13	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 23:13	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 23:13	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 23:13	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 23:13	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 23:13	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:13	127-18-4	
Toluene	**0.20J**	ug/L	1.0	0.14	1		10/31/19 23:13	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 23:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 23:13	79-00-5	
Trichloroethene	**0.70J**	ug/L	1.0	0.17	1		10/31/19 23:13	79-01-6	
Vinyl chloride	**0.29J**	ug/L	1.0	0.11	1		10/31/19 23:13	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 23:13	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		10/31/19 23:13	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/31/19 23:13	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 23:13	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 23:13		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 10:50	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-11-201910 **Lab ID: 60318969021** Collected: 10/22/19 13:45 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**162**	mg/L	10.0	2.2	10		11/05/19 21:14	16887-00-6	
Sulfate	**1.1**	mg/L	1.0	0.23	1		11/06/19 15:11	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		10/23/19 17:49		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/23/19 17:49	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/23/19 17:49	14797-65-0	M1
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.7**	mg/L	1.0	0.29	1		10/30/19 13:50	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**1.4**	mg/L	1.0	0.29	1		11/01/19 00:59		B

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-10-201910 **Lab ID: 60318969022** Collected: 10/22/19 14:05 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**22100**	ug/L	50.0	14.0	1	10/24/19 10:55	10/25/19 14:11	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 23:27	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 23:27	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 23:27	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 23:27	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 23:27	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 23:27	78-93-3	
Carbon disulfide	**0.35J**	ug/L	5.0	0.16	1		10/31/19 23:27	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 23:27	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 23:27	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 23:27	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 23:27	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 23:27	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 23:27	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 23:27	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 23:27	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:27	75-35-4	
cis-1,2-Dichloroethene	**1.4**	ug/L	1.0	0.17	1		10/31/19 23:27	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 23:27	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 23:27	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 23:27	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 23:27	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 23:27	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 23:27	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 23:27	75-09-2	
4-Methyl-2-pentanone (MIBK)	**0.78J**	ug/L	10.0	0.56	1		10/31/19 23:27	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 23:27	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 23:27	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:27	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 23:27	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 23:27	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 23:27	79-00-5	
Trichloroethene	**8.6**	ug/L	1.0	0.17	1		10/31/19 23:27	79-01-6	
Vinyl chloride	**2.4**	ug/L	1.0	0.11	1		10/31/19 23:27	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 23:27	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		10/31/19 23:27	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/31/19 23:27	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 23:27	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 23:27		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 10:50	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-10-201910 **Lab ID: 60318969022** Collected: 10/22/19 14:05 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**198**	mg/L	10.0	2.2	10		11/05/19 21:47	16887-00-6	
Sulfate	**1.1**	mg/L	1.0	0.23	1		11/06/19 15:28	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		10/23/19 17:51		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/23/19 17:51	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/23/19 17:51	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**16.1**	mg/L	5.0	1.4	5		10/31/19 17:51	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**16.4**	mg/L	5.0	1.4	5		11/01/19 01:13		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-89-201910 **Lab ID: 60318969023** Collected: 10/22/19 16:30 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**63.3**	ug/L	50.0	14.0	1	10/24/19 10:55	10/25/19 14:13	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 23:42	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 23:42	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 23:42	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 23:42	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 23:42	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 23:42	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 23:42	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 23:42	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 23:42	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 23:42	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 23:42	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 23:42	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 23:42	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 23:42	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 23:42	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:42	75-35-4	
cis-1,2-Dichloroethene	**0.51J**	ug/L	1.0	0.17	1		10/31/19 23:42	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 23:42	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 23:42	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 23:42	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 23:42	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 23:42	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 23:42	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 23:42	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 23:42	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 23:42	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 23:42	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:42	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 23:42	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 23:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 23:42	79-00-5	
Trichloroethene	**9.0**	ug/L	1.0	0.17	1		10/31/19 23:42	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 23:42	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 23:42	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/31/19 23:42	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/31/19 23:42	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 23:42	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 23:42		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 10:51	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-89-201910 **Lab ID: 60318969023** Collected: 10/22/19 16:30 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**2.9**	mg/L	1.0	0.23	1		11/06/19 15:44	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**96.3**	mg/L	2.0	0.76	20		10/23/19 17:57		
Nitrogen, Nitrate	**96.3**	mg/L	2.0	1.3	20		10/23/19 17:57	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	2.0	1.3	20		10/23/19 17:57	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.1**	mg/L	1.0	0.29	1		10/30/19 14:17	7440-44-0	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 618015 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

METHOD BLANK: 2521575 Matrix: Water
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	14.0	10/25/19 12:40	

LABORATORY CONTROL SAMPLE: 2521576

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	10000	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2521577 2521578

Parameter	Units	60319061001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	7570	10000	10000	17000	17400	94	99	75-125	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 618900 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60318969001, 60318969002, 60318969003, 60318969004, 60318969005, 60318969006, 60318969007, 60318969008

METHOD BLANK: 2524965 Matrix: Water
Associated Lab Samples: 60318969001, 60318969002, 60318969003, 60318969004, 60318969005, 60318969006, 60318969007, 60318969008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	10/31/19 02:34	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	10/31/19 02:34	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	10/31/19 02:34	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	10/31/19 02:34	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	10/31/19 02:34	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	10/31/19 02:34	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	10/31/19 02:34	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	10/31/19 02:34	
2-Hexanone	ug/L	ND	10.0	1.0	10/31/19 02:34	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	10/31/19 02:34	
Acetone	ug/L	ND	10.0	3.3	10/31/19 02:34	
Benzene	ug/L	ND	1.0	0.079	10/31/19 02:34	
Bromodichloromethane	ug/L	ND	1.0	0.17	10/31/19 02:34	
Bromoform	ug/L	ND	1.0	0.21	10/31/19 02:34	
Bromomethane	ug/L	ND	5.0	0.32	10/31/19 02:34	
Carbon disulfide	ug/L	ND	5.0	0.16	10/31/19 02:34	
Carbon tetrachloride	ug/L	ND	1.0	0.084	10/31/19 02:34	
Chlorobenzene	ug/L	ND	1.0	0.13	10/31/19 02:34	
Chloroethane	ug/L	ND	1.0	0.42	10/31/19 02:34	
Chloroform	ug/L	ND	1.0	0.10	10/31/19 02:34	
Chloromethane	ug/L	ND	1.0	0.16	10/31/19 02:34	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 02:34	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	10/31/19 02:34	
Dibromochloromethane	ug/L	ND	1.0	0.15	10/31/19 02:34	
Ethylbenzene	ug/L	ND	1.0	0.12	10/31/19 02:34	
Methylene Chloride	ug/L	ND	1.0	0.27	10/31/19 02:34	
Styrene	ug/L	ND	1.0	0.15	10/31/19 02:34	
Tetrachloroethene	ug/L	ND	1.0	0.22	10/31/19 02:34	
Toluene	ug/L	ND	1.0	0.14	10/31/19 02:34	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 02:34	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	10/31/19 02:34	
Trichloroethene	ug/L	ND	1.0	0.17	10/31/19 02:34	
Vinyl chloride	ug/L	ND	1.0	0.11	10/31/19 02:34	
Xylene (Total)	ug/L	ND	3.0	0.34	10/31/19 02:34	
1,2-Dichloroethane-d4 (S)	%	102	77-122		10/31/19 02:34	
4-Bromofluorobenzene (S)	%	98	80-120		10/31/19 02:34	
Toluene-d8 (S)	%	99	80-120		10/31/19 02:34	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

LABORATORY CONTROL SAMPLE: 2524966

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.8	94	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	18.5	93	71-122	
1,1,2-Trichloroethane	ug/L	20	19.5	97	76-123	
1,1-Dichloroethane	ug/L	20	19.1	95	78-117	
1,1-Dichloroethene	ug/L	20	21.0	105	74-122	
1,2-Dichloroethane	ug/L	20	18.9	94	73-120	
1,2-Dichloropropane	ug/L	20	19.1	96	78-115	
2-Butanone (MEK)	ug/L	100	92.5	92	54-133	
2-Hexanone	ug/L	100	93.5	94	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	96.5	96	62-130	
Acetone	ug/L	100	82.4	82	54-130	
Benzene	ug/L	20	19.0	95	80-120	
Bromodichloromethane	ug/L	20	18.0	90	78-121	
Bromoform	ug/L	20	16.9	84	62-137	
Bromomethane	ug/L	20	18.6	93	41-145	
Carbon disulfide	ug/L	20	19.6	98	64-119	
Carbon tetrachloride	ug/L	20	19.2	96	77-122	
Chlorobenzene	ug/L	20	18.8	94	80-123	
Chloroethane	ug/L	20	20.5	103	60-146	
Chloroform	ug/L	20	19.2	96	81-116	
Chloromethane	ug/L	20	18.3	91	29-154	
cis-1,2-Dichloroethene	ug/L	20	18.6	93	80-120	
cis-1,3-Dichloropropene	ug/L	20	18.4	92	78-118	
Dibromochloromethane	ug/L	20	17.4	87	73-128	
Ethylbenzene	ug/L	20	18.9	95	80-120	
Methylene Chloride	ug/L	20	20.6	103	80-126	
Styrene	ug/L	20	18.8	94	85-120	
Tetrachloroethene	ug/L	20	19.0	95	77-121	
Toluene	ug/L	20	18.5	93	80-120	
trans-1,2-Dichloroethene	ug/L	20	18.4	92	80-120	
trans-1,3-Dichloropropene	ug/L	20	16.5	83	76-123	
Trichloroethene	ug/L	20	20.6	103	80-121	
Vinyl chloride	ug/L	20	19.5	97	46-162	
Xylene (Total)	ug/L	60	56.2	94	80-120	
1,2-Dichloroethane-d4 (S)	%			101	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2524967 2524968

Parameter	Units	60318969003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	20.0	19.7	100	99	67-137	1	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	18.0	17.7	90	89	54-134	2	33	
1,1,2-Trichloroethane	ug/L	ND	20	20	18.6	17.3	93	86	59-131	8	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2524967			2524968							
Parameter	Units	60318969003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	19.8	19.6	99	98	63-134	1	31	
1,1-Dichloroethene	ug/L	ND	20	20	22.2	22.8	111	114	64-140	3	37	
1,2-Dichloroethane	ug/L	ND	20	20	18.4	17.7	92	88	42-140	4	35	
1,2-Dichloropropane	ug/L	ND	20	20	18.9	18.9	95	94	60-132	0	30	
2-Butanone (MEK)	ug/L	ND	100	100	82.2	77.5	82	78	44-132	6	34	
2-Hexanone	ug/L	ND	100	100	86.6	76.9	87	77	47-134	12	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	90.7	81.6	91	82	50-136	11	34	
Acetone	ug/L	ND	100	100	77.3	69.1	77	69	35-129	11	35	
Benzene	ug/L	ND	20	20	19.2	19.3	96	96	42-137	1	35	
Bromodichloromethane	ug/L	ND	20	20	17.8	17.9	89	90	61-130	1	32	
Bromoform	ug/L	ND	20	20	16.2	15.5	81	78	53-128	5	32	
Bromomethane	ug/L	ND	20	20	19.3	19.0	97	95	33-148	1	42	
Carbon disulfide	ug/L	0.19J	20	20	19.2	19.7	95	98	52-138	3	37	
Carbon tetrachloride	ug/L	ND	20	20	20.1	20.5	101	102	65-143	2	31	
Chlorobenzene	ug/L	ND	20	20	19.2	19.3	96	97	63-131	1	30	
Chloroethane	ug/L	ND	20	20	19.3	24.7	97	123	51-153	24	39	
Chloroform	ug/L	ND	20	20	19.9	19.5	100	98	62-129	2	32	
Chloromethane	ug/L	ND	20	20	20.7	19.9	103	99	16-169	4	59	
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.8	18.7	94	93	43-152	1	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	16.1	15.6	80	78	58-127	3	31	
Dibromochloromethane	ug/L	ND	20	20	17.3	16.3	87	82	54-134	6	33	
Ethylbenzene	ug/L	ND	20	20	19.1	18.7	95	93	44-143	2	36	
Methylene Chloride	ug/L	ND	20	20	20.9	20.7	104	104	65-135	1	33	
Styrene	ug/L	ND	20	20	18.0	18.1	90	90	49-141	0	37	
Tetrachloroethene	ug/L	ND	20	20	18.4	17.8	92	89	62-134	3	33	
Toluene	ug/L	ND	20	20	19.2	19.0	96	95	45-142	1	36	
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.6	18.5	98	92	65-133	6	32	
trans-1,3-Dichloropropene	ug/L	ND	20	20	14.2	13.8	71	69	56-127	3	28	
Trichloroethene	ug/L	ND	20	20	20.8	21.5	104	107	61-148	3	25	
Vinyl chloride	ug/L	ND	20	20	20.9	20.9	104	104	35-185	0	29	
Xylene (Total)	ug/L	ND	60	60	56.8	56.6	95	94	33-149	0	35	
1,2-Dichloroethane-d4 (S)	%						103	97	77-122			
4-Bromofluorobenzene (S)	%						100	101	80-120			
Toluene-d8 (S)	%						102	100	80-120			
Preservation pH		1.0			1.0	1.0				0		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2524969			2524970							
Parameter	Units	60318969006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	20.4	20.2	102	101	67-137	1	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	18.2	19.7	91	98	54-134	8	33	
1,1,2-Trichloroethane	ug/L	ND	20	20	19.1	18.7	96	93	59-131	2	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2524969 2524970

Parameter	Units	60318969006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	19.9	19.6	100	98	63-134	1	31	
1,1-Dichloroethene	ug/L	ND	20	20	22.3	21.6	111	108	64-140	3	37	
1,2-Dichloroethane	ug/L	ND	20	20	18.3	18.2	92	91	42-140	1	35	
1,2-Dichloropropane	ug/L	ND	20	20	19.9	19.3	100	96	60-132	3	30	
2-Butanone (MEK)	ug/L	ND	100	100	86.8	86.5	87	86	44-132	0	34	
2-Hexanone	ug/L	ND	100	100	87.1	88.1	87	88	47-134	1	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	89.1	91.5	89	91	50-136	3	34	
Acetone	ug/L	ND	100	100	80.1	77.4	80	77	35-129	3	35	
Benzene	ug/L	ND	20	20	19.5	19.4	98	97	42-137	1	35	
Bromodichloromethane	ug/L	ND	20	20	18.2	17.7	91	88	61-130	3	32	
Bromoform	ug/L	ND	20	20	16.3	16.2	81	81	53-128	1	32	
Bromomethane	ug/L	ND	20	20	21.8	21.4	109	107	33-148	2	42	
Carbon disulfide	ug/L	ND	20	20	19.2	18.5	96	93	52-138	4	37	
Carbon tetrachloride	ug/L	ND	20	20	20.4	20.4	102	102	65-143	0	31	
Chlorobenzene	ug/L	ND	20	20	19.6	19.2	98	96	63-131	2	30	
Chloroethane	ug/L	ND	20	20	21.1	21.4	106	107	51-153	1	39	
Chloroform	ug/L	ND	20	20	20.1	19.8	101	99	62-129	1	32	
Chloromethane	ug/L	ND	20	20	19.3	17.7	97	89	16-169	9	59	
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.8	18.0	94	90	43-152	5	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	16.1	16.3	81	82	58-127	1	31	
Dibromochloromethane	ug/L	ND	20	20	17.3	16.9	87	85	54-134	2	33	
Ethylbenzene	ug/L	ND	20	20	19.6	19.0	98	95	44-143	3	36	
Methylene Chloride	ug/L	ND	20	20	20.2	20.9	101	104	65-135	3	33	
Styrene	ug/L	ND	20	20	18.6	18.0	93	90	49-141	3	37	
Tetrachloroethene	ug/L	ND	20	20	18.4	17.9	92	89	62-134	3	33	
Toluene	ug/L	ND	20	20	19.5	19.0	97	95	45-142	2	36	
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.5	18.6	97	93	65-133	5	32	
trans-1,3-Dichloropropene	ug/L	ND	20	20	14.7	14.7	74	74	56-127	0	28	
Trichloroethene	ug/L	ND	20	20	21.5	21.1	108	106	61-148	2	25	
Vinyl chloride	ug/L	ND	20	20	21.2	20.6	106	103	35-185	3	29	
Xylene (Total)	ug/L	ND	60	60	58.5	56.5	97	94	33-149	3	35	
1,2-Dichloroethane-d4 (S)	%						100	101	77-122			
4-Bromofluorobenzene (S)	%						99	100	80-120			
Toluene-d8 (S)	%						101	100	80-120			
Preservation pH		1.0			1.0	1.0				0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 619494 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60318969001, 60318969009, 60318969010, 60318969011, 60318969012, 60318969013, 60318969014, 60318969015, 60318969016, 60318969017, 60318969018, 60318969019, 60318969020, 60318969021, 60318969022, 60318969023

METHOD BLANK: 2526821 Matrix: Water
Associated Lab Samples: 60318969001, 60318969009, 60318969010, 60318969011, 60318969012, 60318969013, 60318969014, 60318969015, 60318969016, 60318969017, 60318969018, 60318969019, 60318969020, 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	10/31/19 20:37	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	10/31/19 20:37	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	10/31/19 20:37	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	10/31/19 20:37	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	10/31/19 20:37	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	10/31/19 20:37	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	10/31/19 20:37	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	10/31/19 20:37	
2-Hexanone	ug/L	ND	10.0	1.0	10/31/19 20:37	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	10/31/19 20:37	
Acetone	ug/L	ND	10.0	3.3	10/31/19 20:37	
Benzene	ug/L	ND	1.0	0.079	10/31/19 20:37	
Bromodichloromethane	ug/L	ND	1.0	0.17	10/31/19 20:37	
Bromoform	ug/L	ND	1.0	0.21	10/31/19 20:37	
Bromomethane	ug/L	ND	5.0	0.32	10/31/19 20:37	
Carbon disulfide	ug/L	ND	5.0	0.16	10/31/19 20:37	
Carbon tetrachloride	ug/L	ND	1.0	0.084	10/31/19 20:37	
Chlorobenzene	ug/L	ND	1.0	0.13	10/31/19 20:37	
Chloroethane	ug/L	ND	1.0	0.42	10/31/19 20:37	
Chloroform	ug/L	ND	1.0	0.10	10/31/19 20:37	
Chloromethane	ug/L	ND	1.0	0.16	10/31/19 20:37	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 20:37	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	10/31/19 20:37	
Dibromochloromethane	ug/L	ND	1.0	0.15	10/31/19 20:37	
Ethylbenzene	ug/L	ND	1.0	0.12	10/31/19 20:37	
Methylene Chloride	ug/L	ND	1.0	0.27	10/31/19 20:37	
Styrene	ug/L	ND	1.0	0.15	10/31/19 20:37	
Tetrachloroethene	ug/L	ND	1.0	0.22	10/31/19 20:37	
Toluene	ug/L	ND	1.0	0.14	10/31/19 20:37	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 20:37	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	10/31/19 20:37	
Trichloroethene	ug/L	ND	1.0	0.17	10/31/19 20:37	
Vinyl chloride	ug/L	ND	1.0	0.11	10/31/19 20:37	
Xylene (Total)	ug/L	ND	3.0	0.34	10/31/19 20:37	
1,2-Dichloroethane-d4 (S)	%	101	77-122		10/31/19 20:37	
4-Bromofluorobenzene (S)	%	99	80-120		10/31/19 20:37	
Toluene-d8 (S)	%	102	80-120		10/31/19 20:37	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

LABORATORY CONTROL SAMPLE: 2526822

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.9	99	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	18.4	92	71-122	
1,1,2-Trichloroethane	ug/L	20	19.5	97	76-123	
1,1-Dichloroethane	ug/L	20	20.7	104	78-117	
1,1-Dichloroethene	ug/L	20	22.6	113	74-122	
1,2-Dichloroethane	ug/L	20	19.9	100	73-120	
1,2-Dichloropropane	ug/L	20	20.3	102	78-115	
2-Butanone (MEK)	ug/L	100	98.6	99	54-133	
2-Hexanone	ug/L	100	94.1	94	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	97.3	97	62-130	
Acetone	ug/L	100	99.0	99	54-130	
Benzene	ug/L	20	19.6	98	80-120	
Bromodichloromethane	ug/L	20	18.3	92	78-121	
Bromoform	ug/L	20	16.0	80	62-137	
Bromomethane	ug/L	20	23.0	115	41-145	
Carbon disulfide	ug/L	20	20.5	102	64-119	
Carbon tetrachloride	ug/L	20	20.4	102	77-122	
Chlorobenzene	ug/L	20	19.9	100	80-123	
Chloroethane	ug/L	20	21.5	107	60-146	
Chloroform	ug/L	20	21.0	105	81-116	
Chloromethane	ug/L	20	22.6	113	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.9	99	80-120	
cis-1,3-Dichloropropene	ug/L	20	18.9	95	78-118	
Dibromochloromethane	ug/L	20	17.7	88	73-128	
Ethylbenzene	ug/L	20	19.7	98	80-120	
Methylene Chloride	ug/L	20	21.4	107	80-126	
Styrene	ug/L	20	19.9	100	85-120	
Tetrachloroethene	ug/L	20	19.1	95	77-121	
Toluene	ug/L	20	19.2	96	80-120	
trans-1,2-Dichloroethene	ug/L	20	21.6	108	80-120	
trans-1,3-Dichloropropene	ug/L	20	17.0	85	76-123	
Trichloroethene	ug/L	20	22.4	112	80-121	
Vinyl chloride	ug/L	20	21.4	107	46-162	
Xylene (Total)	ug/L	60	60.5	101	80-120	
1,2-Dichloroethane-d4 (S)	%			103	77-122	
4-Bromofluorobenzene (S)	%			98	80-120	
Toluene-d8 (S)	%			98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2526823 2526824

Parameter	Units	60318969009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	21.8	20.7	109	104	67-137	5	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.1	19.6	101	98	54-134	3	33	
1,1,2-Trichloroethane	ug/L	ND	20	20	20.2	19.5	101	98	59-131	3	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2526823			2526824							
Parameter	Units	60318969009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	21.3	21.1	106	105	63-134	1	31	
1,1-Dichloroethene	ug/L	ND	20	20	24.0	24.2	120	121	64-140	1	37	
1,2-Dichloroethane	ug/L	ND	20	20	19.8	19.0	98	94	42-140	4	35	
1,2-Dichloropropane	ug/L	ND	20	20	20.2	20.0	101	100	60-132	1	30	
2-Butanone (MEK)	ug/L	ND	100	100	97.9	95.8	98	96	44-132	2	34	
2-Hexanone	ug/L	ND	100	100	96.5	93.5	96	94	47-134	3	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	101	97.5	101	98	50-136	3	34	
Acetone	ug/L	ND	100	100	90.6	82.3	91	82	35-129	10	35	
Benzene	ug/L	ND	20	20	20.6	20.4	103	102	42-137	1	35	
Bromodichloromethane	ug/L	ND	20	20	19.0	18.6	95	93	61-130	2	32	
Bromoform	ug/L	ND	20	20	16.6	16.9	83	84	53-128	2	32	
Bromomethane	ug/L	ND	20	20	19.4	21.8	97	109	33-148	12	42	
Carbon disulfide	ug/L	ND	20	20	21.8	22.0	109	110	52-138	1	37	
Carbon tetrachloride	ug/L	ND	20	20	22.0	21.3	110	106	65-143	3	31	
Chlorobenzene	ug/L	ND	20	20	20.4	19.7	102	98	63-131	4	30	
Chloroethane	ug/L	ND	20	20	22.7	23.5	113	117	51-153	3	39	
Chloroform	ug/L	ND	20	20	21.6	21.1	108	106	62-129	2	32	
Chloromethane	ug/L	ND	20	20	22.0	23.7	110	119	16-169	7	59	
cis-1,2-Dichloroethene	ug/L	ND	20	20	20.5	19.9	103	100	43-152	3	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	18.8	18.6	94	93	58-127	1	31	
Dibromochloromethane	ug/L	ND	20	20	18.0	17.4	90	87	54-134	4	33	
Ethylbenzene	ug/L	ND	20	20	19.9	19.7	100	99	44-143	1	36	
Methylene Chloride	ug/L	ND	20	20	21.6	21.6	108	108	65-135	0	33	
Styrene	ug/L	ND	20	20	18.8	18.5	94	93	49-141	2	37	
Tetrachloroethene	ug/L	ND	20	20	20.0	19.2	100	96	62-134	4	33	
Toluene	ug/L	ND	20	20	20.4	19.4	102	97	45-142	5	36	
trans-1,2-Dichloroethene	ug/L	ND	20	20	21.5	20.4	108	102	65-133	5	32	
trans-1,3-Dichloropropene	ug/L	ND	20	20	16.5	16.5	83	83	56-127	0	28	
Trichloroethene	ug/L	ND	20	20	23.7	22.1	119	111	61-148	7	25	
Vinyl chloride	ug/L	ND	20	20	23.3	23.0	116	115	35-185	1	29	
Xylene (Total)	ug/L	ND	60	60	60.7	59.5	101	99	33-149	2	35	
1,2-Dichloroethane-d4 (S)	%						106	105	77-122			
4-Bromofluorobenzene (S)	%						98	98	80-120			
Toluene-d8 (S)	%						100	100	80-120			
Preservation pH		1.0			1.0	1.0				0		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2526825			2526826							
Parameter	Units	60318969015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	21.6	20.4	108	102	67-137	5	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	19.7	20.4	98	102	54-134	4	33	
1,1,2-Trichloroethane	ug/L	ND	20	20	19.2	19.3	96	97	59-131	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2526825 2526826

Parameter	Units	60318969015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	21.0	20.2	105	101	63-134	4	31	
1,1-Dichloroethene	ug/L	ND	20	20	23.8	23.2	119	116	64-140	3	37	
1,2-Dichloroethane	ug/L	ND	20	20	19.4	19.0	97	95	42-140	2	35	
1,2-Dichloropropane	ug/L	ND	20	20	19.8	19.9	99	100	60-132	0	30	
2-Butanone (MEK)	ug/L	ND	100	100	96.0	89.8	96	90	44-132	7	34	
2-Hexanone	ug/L	ND	100	100	93.5	92.5	94	93	47-134	1	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	99.3	96.3	99	96	50-136	3	34	
Acetone	ug/L	ND	100	100	91.4	77.2	91	77	35-129	17	35	
Benzene	ug/L	ND	20	20	20.1	19.9	101	100	42-137	1	35	
Bromodichloromethane	ug/L	ND	20	20	18.5	18.0	92	90	61-130	2	32	
Bromoform	ug/L	ND	20	20	16.6	15.9	83	79	53-128	4	32	
Bromomethane	ug/L	ND	20	20	22.1	22.4	110	112	33-148	1	42	
Carbon disulfide	ug/L	ND	20	20	21.2	21.1	106	105	52-138	0	37	
Carbon tetrachloride	ug/L	ND	20	20	21.2	21.2	106	106	65-143	0	31	
Chlorobenzene	ug/L	ND	20	20	19.9	19.5	99	97	63-131	2	30	
Chloroethane	ug/L	ND	20	20	23.2	21.1	116	106	51-153	9	39	
Chloroform	ug/L	ND	20	20	21.3	20.4	106	102	62-129	4	32	
Chloromethane	ug/L	ND	20	20	23.0	19.9	115	99	16-169	15	59	
cis-1,2-Dichloroethene	ug/L	ND	20	20	20.3	19.3	102	97	43-152	5	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	18.6	18.6	93	93	58-127	0	31	
Dibromochloromethane	ug/L	ND	20	20	16.7	17.4	83	87	54-134	4	33	
Ethylbenzene	ug/L	ND	20	20	19.4	19.7	97	99	44-143	2	36	
Methylene Chloride	ug/L	ND	20	20	21.7	20.7	108	104	65-135	4	33	
Styrene	ug/L	ND	20	20	14.6	14.8	73	74	49-141	1	37	
Tetrachloroethene	ug/L	ND	20	20	18.8	19.2	94	96	62-134	2	33	
Toluene	ug/L	ND	20	20	19.5	19.9	97	99	45-142	2	36	
trans-1,2-Dichloroethene	ug/L	ND	20	20	21.2	18.8	106	94	65-133	12	32	
trans-1,3-Dichloropropene	ug/L	ND	20	20	16.2	16.5	81	82	56-127	2	28	
Trichloroethene	ug/L	ND	20	20	22.2	22.1	111	111	61-148	0	25	
Vinyl chloride	ug/L	ND	20	20	23.4	22.2	117	111	35-185	5	29	
Xylene (Total)	ug/L	ND	60	60	59.9	58.3	100	97	33-149	3	35	
1,2-Dichloroethane-d4 (S)	%						106	100	77-122			
4-Bromofluorobenzene (S)	%						96	102	80-120			
Toluene-d8 (S)	%						100	100	80-120			
Preservation pH		1.0			1.0	1.0				0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 618512 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60318969021, 60318969022, 60318969023

METHOD BLANK: 2524101 Matrix: Water
Associated Lab Samples: 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	0.039	10/28/19 10:44	

LABORATORY CONTROL SAMPLE: 2524102

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.49	99	80-120	

MATRIX SPIKE SAMPLE: 2524103

Parameter	Units	60318813003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.5	0.50	100	75-125	

SAMPLE DUPLICATE: 2524104

Parameter	Units	60318813005 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

SAMPLE DUPLICATE: 2524105

Parameter	Units	60318969023 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 620217 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

METHOD BLANK: 2529350 Matrix: Water
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	11/05/19 16:48	
Sulfate	mg/L	ND	1.0	0.23	11/05/19 16:48	

METHOD BLANK: 2531552 Matrix: Water
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	11/06/19 10:25	
Sulfate	mg/L	ND	1.0	0.23	11/06/19 10:25	

LABORATORY CONTROL SAMPLE: 2529351

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	98	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

LABORATORY CONTROL SAMPLE: 2531553

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2529352 2529353

Parameter	Units	60318275001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	146	2000	2000	6510	6000	318	293	80-120	8	15	M1
Sulfate	mg/L	1750	2000	2000	7630	7570	294	291	80-120	1	15	M1

MATRIX SPIKE SAMPLE: 2529354

Parameter	Units	60318978002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.3	5	6.1	96	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

MATRIX SPIKE SAMPLE: 2529354

Parameter	Units	60318978002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	54.7	5	58.0	68	80-120	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 617944 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

METHOD BLANK: 2521244 Matrix: Water
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	0.067	10/23/19 17:32	
Nitrogen, Nitrite	mg/L	ND	0.10	0.067	10/23/19 17:32	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	10/23/19 17:32	

LABORATORY CONTROL SAMPLE: 2521245

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	0.91	91	70-130	
Nitrogen, Nitrite	mg/L	1	1.0	102	90-110	
Nitrogen, NO2 plus NO3	mg/L	2	1.9	97	90-110	

MATRIX SPIKE SAMPLE: 2521246

Parameter	Units	60319009002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	1	0.92	92	70-130	
Nitrogen, Nitrite	mg/L	1.4	1	2.4	109	90-110	
Nitrogen, NO2 plus NO3	mg/L	1.3	2	3.4	101	90-110	

MATRIX SPIKE SAMPLE: 2521248

Parameter	Units	60318969021 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	1	0.93	93	70-130	
Nitrogen, Nitrite	mg/L	ND	1	1.1	112	90-110	M1
Nitrogen, NO2 plus NO3	mg/L	ND	2	2.0	102	90-110	

SAMPLE DUPLICATE: 2521247

Parameter	Units	60319006001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	31.3	30.6	2	20	
Nitrogen, Nitrite	mg/L	1.4	1.4	2	20	
Nitrogen, NO2 plus NO3	mg/L	32.7	32.0	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 619144 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60318969021, 60318969023

METHOD BLANK: 2525747 Matrix: Water
Associated Lab Samples: 60318969021, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	10/30/19 10:29	

LABORATORY CONTROL SAMPLE: 2525748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.4	108	80-120	

MATRIX SPIKE SAMPLE: 2525749

Parameter	Units	60319126003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	1.9	5	3.8	39	80-120	M1

SAMPLE DUPLICATE: 2525750

Parameter	Units	60319556002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	51.4	48.0	7	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 619519 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60318969020, 60318969022

METHOD BLANK: 2526884 Matrix: Water
Associated Lab Samples: 60318969020, 60318969022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	10/31/19 16:17	

LABORATORY CONTROL SAMPLE: 2526885

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.5	110	80-120	

MATRIX SPIKE SAMPLE: 2526886

Parameter	Units	60319115044 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	212	125	345	106	80-120	

SAMPLE DUPLICATE: 2526887

Parameter	Units	60318969020 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	1130	1130	0	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 619520 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60318969020, 60318969021, 60318969022

METHOD BLANK: 2526889 Matrix: Water
Associated Lab Samples: 60318969020, 60318969021, 60318969022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	0.30J	1.0	0.29	10/31/19 22:45	

LABORATORY CONTROL SAMPLE: 2526890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.5	111	80-120	

MATRIX SPIKE SAMPLE: 2526891

Parameter	Units	60319115044 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	203	125	329	101	80-120	

SAMPLE DUPLICATE: 2526892

Parameter	Units	60319115061 Result	Dup Result	RPD	Max RPD	Qualifiers
Dissolved Organic Carbon	mg/L	0.81J	0.78J		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60318969020	TMW-21-201910	EPA 3010	618015	EPA 6010	618156
60318969021	TMW-11-201910	EPA 3010	618015	EPA 6010	618156
60318969022	TMW-10-201910	EPA 3010	618015	EPA 6010	618156
60318969023	MW-89-201910	EPA 3010	618015	EPA 6010	618156
60318969001	MW-176-201910	EPA 5030B/8260	618900		
60318969001	MW-176-201910	EPA 5030B/8260	619494		
60318969002	MW-187-201910	EPA 5030B/8260	618900		
60318969003	MW-188-201910	EPA 5030B/8260	618900		
60318969004	MW-62R-201910	EPA 5030B/8260	618900		
60318969005	MW-68-201910	EPA 5030B/8260	618900		
60318969006	MW-40R-201910	EPA 5030B/8260	618900		
60318969007	MW-191-201910	EPA 5030B/8260	618900		
60318969008	MW-190-201910	EPA 5030B/8260	618900		
60318969009	MW-192-201910	EPA 5030B/8260	619494		
60318969010	TMW-35-201910	EPA 5030B/8260	619494		
60318969011	MW-63R-201910	EPA 5030B/8260	619494		
60318969012	MW-39R-201910	EPA 5030B/8260	619494		
60318969013	EB-01-201910	EPA 5030B/8260	619494		
60318969014	TB-01-201910	EPA 5030B/8260	619494		
60318969015	MW-195-201910	EPA 5030B/8260	619494		
60318969016	TMW-29-201910	EPA 5030B/8260	619494		
60318969017	TMW-20-201910	EPA 5030B/8260	619494		
60318969018	TB-02-201910	EPA 5030B/8260	619494		
60318969019	ITMW-7-201910	EPA 5030B/8260	619494		
60318969020	TMW-21-201910	EPA 5030B/8260	619494		
60318969021	TMW-11-201910	EPA 5030B/8260	619494		
60318969022	TMW-10-201910	EPA 5030B/8260	619494		
60318969023	MW-89-201910	EPA 5030B/8260	619494		
60318969021	TMW-11-201910	SM 4500-S-2 D	618512		
60318969022	TMW-10-201910	SM 4500-S-2 D	618512		
60318969023	MW-89-201910	SM 4500-S-2 D	618512		
60318969020	TMW-21-201910	EPA 300.0	620217		
60318969021	TMW-11-201910	EPA 300.0	620217		
60318969022	TMW-10-201910	EPA 300.0	620217		
60318969023	MW-89-201910	EPA 300.0	620217		
60318969020	TMW-21-201910	EPA 353.2	617944		
60318969021	TMW-11-201910	EPA 353.2	617944		
60318969022	TMW-10-201910	EPA 353.2	617944		
60318969023	MW-89-201910	EPA 353.2	617944		
60318969020	TMW-21-201910	SM 5310C	619519		
60318969021	TMW-11-201910	SM 5310C	619144		
60318969022	TMW-10-201910	SM 5310C	619519		
60318969023	MW-89-201910	SM 5310C	619144		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60318969

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60318969020	**TMW-21-201910**	SM 5310C	619520		
60318969021	**TMW-11-201910**	SM 5310C	619520		
60318969022	**TMW-10-201910**	SM 5310C	619520		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Aff

WO# : 60318969

60318969

MTJL Log-in

ALL S

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller nzurweller@ramboll.com	Site Collection Info/Address: Fort Smith, AR
Customer Project Name/Number:	State: AR County/City: Sebastian Time Zone Collected: PT MT (CT) ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [X] No
Collected by (print): Alyssa Larson	Purchase Order #: DW PWS ID #:
Collected by (signature): Alyssa	Quote #: DW Location Code #:
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold	Turnaround Date Required: RUSH: Std TAT Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply) Immediately Packed on Ice? [X] Yes [ ] No Field Filtered (if applicable): [ ] Yes [X] No Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

Analyses: VOCs (Full List 8260)

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	(Y)	N	NA
Custody Signatures Present	(Y)	N	NA
Collector Signature Present	(Y)	N	NA
Bottles Intact	(Y)	N	NA
Correct Bottles	(Y)	N	NA
Sufficient Volume	(Y)	N	NA
Samples received on ice	(Y)	N	NA
VOA - Headspace Acceptable	(Y)	N	NA
USDA Regulated Soils	Y	N	(NA)
Samples in holding time	(Y)	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips:			
Sample pH Acceptable	Y	(N)	NA
pH Strips:			
Sulfide Present	(Y)	N	NA
Lead Acetate Strips:			

60318969

↓ LAB USE ONLY: ↓ Lab Sample # / Comments

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Lab Sample # / Comments
MW-176-201910	GW	Grab	10/22/19	1555	N/A	N/A		3	001
MW-187-201910				1425					002
MW-188-201910				1535					003
MW-188-201910-MS				1535					004
MW-188-201910-MSD				1535					005
MW-62R-201910				1309					004 006
MW-68-201910				1434					005 007
MW-40R-201910				1605					006 008
MW-40R-201910-MS				1605					
MW-40R-201910-MSD				1605					

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y (N) N/A

Packing Material Used: Zip Bubble Bag

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: (Y) N NA

Therm ID #: T298

Cooler Temp Upon Receipt: 1.6 oC 2.1

Cooler Therm Corr. Factor: +0.0 oC

Cooler Temp Corrected: 1.6 oC 2.1

Comments:

Trip Blank Received: (Y) N N/A

HCL MeOH TSP Other

NonConformance(s): (YES) / NO

Page 1 of 4

Relinquished by/Company : (Signature) (see page 4)	Date/Time:	Received by/Company : (Signature)	Date/Time: 10.23.19 0620
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight	
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210		
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com	
Copy To: Nick Zurweller nzurweller@ramboll.com	Site Collection Info/Address: Fort Smith, AR	
Customer Project Name/Number:	State: AR / County/City: Sebastian / Time Zone Collected: PT MT (CT) ET	
Phone: / Email:	Site/Facility ID #:	Compliance Monitoring? [ ] Yes [X] No
Collected by (print): Alyssa Larsen	Purchase Order #:	DW PWS ID #:
Collected by (signature): Alyssa Larsen	Quote #:	DW Location Code #:
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	Turnaround Date Required: RUSH: Std TAT Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)	Immediately Packed on Ice? [X] Yes [ ] No; Field Filtered (if applicable): [ ] Yes [X] No; Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

Analyses: VOCs (Full List 8260)

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60318969

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	VOCs	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
MW-191-201910	GW	Grab	10/22/19	12:55	N/A	N/A		3	X	007
MW-190-201910				14:25						008
MW-192-201910				1555						009
MW-192-201910-MS				1555						
MW-192-201910-MSD				1555						
TMW-35-201910				1550						010
TMW-35-201910-MS				1550						
TMW-35-201910-MSD				1550						
MW-03R-201910				1310						011
MW-39R-201910	↓	↓	↓	1430	↓	↓		↓	↓	012

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
	(see page 4)		10/23/1906
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller nzurweller@ramboll.com	Site Collection Info/Address: Fort Smith, AR
Customer Project Name/Number:	State: AR County/City: Sebastian Time Zone Collected: PT MT (CT) ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [X] No
Collected by (print): Alyssa Larson	Purchase Order #: DW PWS ID #:
Collected by (signature): Alyssa Larson	Quote #: DW Location Code #:
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold	Turnaround Date Required: RUSH: Std TAT Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)
	Immediately Packed on Ice? [X] Yes [ ] No
	Field Filtered (if applicable): [ ] Yes [X] No
	Analysis:

Container Preservative Type **: 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Lab Project Manager:

Analyses: VOCs (Full List 8260)

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

60318969

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

	Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	VOCs (Full List 8260)	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
1	EB-01-201910	W	Grab	10/24/19	1050	NA	N/A		3	X	013
1	TB-01-201910	W	—		17:05				2		014
1	MW-195-201910	GW	Grab		16:20				3		015
1	MW-195-201910-MS	↓	↓		16:20				↓		
1	MW-195-201910-MSD				16:20						
1	TMW-29-201910				~~16:25~~ 1430						016
1	TMW-20-201910	↓	↓		1405				↓		017
2	TB-02-201910	W	—		1715				2		018
1	ITMW-07-201910	GW	Grab		1715				3	↓	019

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier []

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #:

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments:

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 3 of 4

Relinquished by/Company : (Signature)	Date/Time: (See page 4)	Received by/Company : (Signature)	Date/Time: 10-27-1900
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

Page 61 of 105

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller nzurweller@ramboll.com	Site Collection Info/Address: Fort Smith AR
Customer Project Name/Number:	State: AR County/City: Sebastian Time Zone Collected: PT MT (CT) ET
Phone: Email: jpavlowsky@ramboll.com	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected by (print): Johanna Pavlowsky	Purchase Order #: DW PWS ID #:
Collected by (signature): JP Pavlowsky	Quote #: DW Location Code #:
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold	Turnaround Date Required: RUSH: (Std) Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)
	Immediately Packed on Ice? [X] Yes [ ] No Field Filtered (if applicable): [ ] Yes [X] No Analysis:

Container Preservative Type **: (3) (D) (D) (2) (1) (O) 4°C

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other benzylalkonium chloride (BAK)

Lab Project Manager:

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	(Y)	N	NA
Custody Signatures Present	(Y)	N	NA
Collector Signature Present	(Y)	N	NA
Bottles Intact	(Y)	N	NA
Correct Bottles	(Y)	N	NA
Sufficient Volume	(Y)	N	NA
Samples received on ice	(Y)	N	NA
VOA - Headspace Acceptable	(Y)	N	NA
USDA Regulated Soils	(Y)	N	(NA)
Samples in holding time	(Y)	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips:			
Sample pH Acceptable	Y	(N)	NA
pH Strips:			
Sulfide Present	(Y)	N	NA
Lead Acetate Strips:			

6031 8969

Analyses

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	VOCs EPA 8260	Methylene, Ethane, Ethene (MEE)	MEE, Acetylene (MEEA)	Sulfate, Nitrate, Chloride	Sulfate, Nitrate (only)	Total organic carbon	TOTAL IRON	volatile fatty acids	TOTAL DISSOLVED CARBON	Sulfide	Hydrogen	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
2 MW-21-201910	GW	G	10-22-19	1600				12	X	X		X		X	X	X	X			020
2 MW-11-201910	GW	G	↓	1345				14	X		X	X		X	X	X	X	X	X	021
2 MW-10-201910	GW	G		1405				14	X		X	X		X	X	X	X	X	X	022
2 MW-89-201910	GW	G	↓	1630				11	X		X		X	X	X	X	X	X	X	023

JP

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y (N) N/A

Packing Material Used: Zplc Bubble Bag

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #:
ACCT #:
Template:
Prelogin:
PM:
PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: T298

Cooler Temp Upon Receipt: 1.6 °C 2.1

Cooler Therm Corr. Factor: +0.0 °C

Cooler Temp Corrected: 1.6 °C

Comments:

Trip Blank Received: (Y) N N/A HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 4 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
JP Pavlowsky /REH	10/22/19 @1800	Client Bus	10/23/19 0620
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

Pace Analytical
www.pacelabs.com

Sample Receiving Non-Conformance Form (NCF)

Date: 10-23-19	Evaluated by: Wr.pt / Pag
Client: Kaw boll	

Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. If COC is incomplete, check applicable issues below and add details where appropriate:

	Collection date/time missing or incorrect		Analyses or analytes: missing or clarification needed		Samples listed on COC do not match samples received (missing, additional, etc.)
	Sample IDs on COC do not match sample labels		Required trip blanks were not received		Required signatures are missing

Comments/Details/Other Issues not listed above:

3. Sample integrity issues: check applicable issues below and add details where appropriate:

	Samples: Past holding time		Samples: Condition needs to be brought to lab personnel's attention (details below)	X	Preservation: Improper
	Samples: Not field filtered		Containers: Broken or compromised		Temperature: not within acceptance criteria (typically 0-6C)
	Samples: Insufficient volume received		Containers: Incorrect		Temperature: Samples arrived frozen
	Samples: Cooler damaged or compromised		Custody Seals: Missing or compromised on samples, trip blanks or coolers		Vials received with improper headspace
	Samples: contain chlorine or sulfides		Packing Material: Insufficient/Improper		Other:

Comments/Details:

TMW-21-201910 has PH of 3
added 2.5 mL of HNO3 Final PH 1.5 Lot 9589-34

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:	
PM Initials:	Date/Time:	

Client Comments/Instructions:

	AG1U	AG2U	AG3U	BP1U	BP2U	BP3U	BP3S	AG3S	BP3N	BP3C	BP3Z	DG9H	DG9Q	DG9U	JGFU	WGKU	VG9U	AG1H	AG2H	AG4U	AG5U	OTHR
20 1						1		1	1			3	3									1 - Boston Rd.
21 2						1		1	1		1	3	3						40 mL - 2 - other			1 " " VG9U
22 3						1		1	1		1	3	3							" "		1 " " VG9U
23 4						1		1	1		1	3	3							" "		VG9U
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						
16																						
17																						
18																						
19																						
20																						

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 7, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60318969**

Pace Workorder: 31884

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Thursday, October 24, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/07/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 26

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31884 60318969

Lab ID	Sample ID	Matrix	Date Collected	Date Received
318840001	TMW-21-201910	Water	10/22/2019 16:00	10/24/2019 11:00
318840002	TMW-11-201910	Water	10/22/2019 13:45	10/24/2019 11:00
318840003	TMW-10-201910	Water	10/22/2019 14:05	10/24/2019 11:00
318840004	MW-89-201910	Water	10/22/2019 16:30	10/24/2019 11:00
318840005	TMW-11-201910	Bubble Strip	10/22/2019 13:45	10/24/2019 11:00
318840006	TMW-10-201910	Bubble Strip	10/22/2019 14:05	10/24/2019 11:00
318840007	MW-89-201910	Bubble Strip	10/22/2019 16:30	10/24/2019 11:00

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31884 60318969

Workorder Comments

The container pH for samples 31884 (0001-0004) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31884 60318969

Lab ID: **318840001** Date Received: 10/24/2019 11:00 Matrix: Water

Sample ID: **TMW-21-201910** Date Collected: 10/22/2019 16:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**12000**	ug/l	0.50	0.094	1	11/1/2019 13:11	MM	n
Ethane	**0.48**	ug/l	0.10	0.011	1	11/1/2019 13:11	MM	n
Ethene	**1.2**	ug/l	0.10	0.0080	1	11/1/2019 13:11	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31884 60318969

Lab ID: **318840002** Date Received: 10/24/2019 11:00 Matrix: Water

Sample ID: **TMW-11-201910** Date Collected: 10/22/2019 13:45

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**13000**	ug/l	0.50	0.094	1	11/1/2019 13:24	MM	n
Ethane	**0.74**	ug/l	0.10	0.011	1	11/1/2019 13:24	MM	n
Ethene	**0.52**	ug/l	0.10	0.0080	1	11/1/2019 13:24	MM	n
Acetylene	**<0.50**	ug/l	0.50	0.037	1	11/1/2019 13:24	MM	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31884 60318969

Lab ID: **318840003** Date Received: 10/24/2019 11:00 Matrix: Water

Sample ID: **TMW-10-201910** Date Collected: 10/22/2019 14:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**14000**	ug/l	0.50	0.094	1	11/1/2019 13:37	MM	n
Ethane	**0.74**	ug/l	0.10	0.011	1	11/1/2019 13:37	MM	n
Ethene	**2.8**	ug/l	0.10	0.0080	1	11/1/2019 13:37	MM	n
Acetylene	**<0.50**	ug/l	0.50	0.037	1	11/1/2019 13:37	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31884 60318969

Lab ID: **318840004** Date Received: 10/24/2019 11:00 Matrix: Water

Sample ID: **MW-89-201910** Date Collected: 10/22/2019 16:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**48**	ug/l	0.50	0.094	1	11/1/2019 13:55	MM	n
Ethane	**<0.10**	ug/l	0.10	0.011	1	11/1/2019 13:55	MM	n
Ethene	**<0.10**	ug/l	0.10	0.0080	1	11/1/2019 13:55	MM	n
Acetylene	**<0.50**	ug/l	0.50	0.037	1	11/1/2019 13:55	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31884 60318969

Lab ID: **318840005** Date Received: 10/24/2019 11:00 Matrix: Bubble Strip

Sample ID: **TMW-11-201910** Date Collected: 10/22/2019 13:45

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**2.5**	nM	1.0	0.75	1	10/30/2019 11:16	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31884 60318969

Lab ID: **318840006** Date Received: 10/24/2019 11:00 Matrix: Bubble Strip

Sample ID: **TMW-10-201910** Date Collected: 10/22/2019 14:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**1.6**	nM	1.0	0.75	1	10/30/2019 11:28	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31884 60318969

Lab ID: **318840007** Date Received: 10/24/2019 11:00 Matrix: Bubble Strip

Sample ID: **MW-89-201910** Date Collected: 10/22/2019 16:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**1.8**	nM	1.0	0.75	1	10/30/2019 11:45	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31884 60318969

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31884 60318969

QC Batch: DISG/7882 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 318840005, 318840006, 318840007

METHOD BLANK: 64051

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Hydrogen	nM	<1.0	1.0	n

LABORATORY CONTROL SAMPLE & LCSD: 64052 64053

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Hydrogen	nM	24	24	24	101	99	80-120	1.4	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31884 60318969

QC Batch: DISG/7890 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 318840001, 318840002, 318840003, 318840004

METHOD BLANK: 64121

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n
Acetylene	ug/l	<0.50	0.50	n

LABORATORY CONTROL SAMPLE & LCSD: 64123 64125

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	790	800	106	107	80-120	1.5	20	n
Ethane	ug/l	38	42	41	111	109	80-120	2.3	20	n
Ethene	ug/l	35	40	39	113	110	80-120	2.1	20	n
Acetylene	ug/l	33	37	36	112	110	80-120	2.1	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 31884 60318969

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31884 60318969

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
318840005	TMW-11-201910			AM20GAX	DISG/7882
318840006	TMW-10-201910			AM20GAX	DISG/7882
318840007	MW-89-201910			AM20GAX	DISG/7882
318840001	TMW-21-201910			AM20GAX	DISG/7890
318840002	TMW-11-201910			AM20GAX	DISG/7890
318840003	TMW-10-201910			AM20GAX	DISG/7890
318840004	MW-89-201910			AM20GAX	DISG/7890

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

1

Chain of Custody

PASI Kansas Laboratory

31884

Pace Analytical®
www.pacelabs.com

Workorder: 60318969 **Workorder Name:** WHIRLPOOL FORT SMITH, AR **Results Requested By:** 11/4/2019

Report / Invoice To	Subcontract To	Requested Analysis
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy P.O. Sub 10245	

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	M/E/E, Acetylene, Hydrogen	M/E/E	LAB USE ONLY
1	TMW-21-201910	10/22/2019 16:00	60318969020	Water	3		X	
2	TMW-11-201910	10/22/2019 13:45	60318969021	Water	4	X		
3	TMW-10-201910	10/22/2019 14:05	60318969022	Water	4	X		
4	MW-89-201910	10/22/2019 16:30	60318969023	Water	4	X		
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	Holly Fowlerpasi	10/23/19 1800	Lon PASS	10.24
2				1100
3				

Comments

60318969020: 3X40ml vials TSP
60318969021-023: 3X40ml vials TSP, 1 x 20cc vapor vial

Cooler Temperature on Receipt 1.4 °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

Cooler Receipt Form

Client Name: Pace **Project:** 60318969 **Lab Work Order:** 31884

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ **Air bill Present:** (Yes) No

Tracking Number: 1219 2981 2342

Custody Seal on Cooler/Box Present: Yes (No) **Seals Intact:** Yes No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None **Ice Intact:** (Yes) Melted

Cooler Temperature: 1.4°C **Radiation Screened:** Yes (No) **Chain of Custody Present:** (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected		✓		
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?		✓		

Comments:_____

_____

Cooler contents examined/received by : LY **Date:** 10.24.19

Project Manager Review : JW **Date:** 10/24/19

NON-CONFORMANCE FORM

PAES Work Order #: 31884

Date: 10.24.19 Time of Receipt: 11:00 Receiver: _____

Client: Pace

REASON FOR NON-CONFORMANCE:

First 3 samples: ID on vials started with ITMW.

ACTION TAKEN:

Client name: Jamie Church Date: 10/24/19 Time: 14:40

client emailed

Customer Service Initials: JW Date: 10/24/19

F-PAE-Q-014-rev.00, 20 Nov2014

Emma Louis - Re: 60318969

From: Jamie Church
To: Ward, Joseph
Date: 10/24/2019 2:45 PM
Subject: Re: 60318969
Cc: Louis, Emma
Attachments: 60318969_coc.pdf

Here is the original COC. Says TMW

>>> Joseph Ward 10/24/2019 1:40 PM >>>
Upon receiving your samples for the project referenced above, We noticed the following.

The first three samples beginning ID's started with ITMW on the vials but on the COC it states the samples ID's should be TMW. Can you confirm the correct sample id?

Thank you

Joseph Ward
Customer Service
Pace Analytical Energy Services
220 William Pitt Way
Pittsburgh PA 15238
412-826-5245/412-826-2384(Direct)

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Aff

WO# : 60318969

60318969

MTJL Log-in

ALL S

Company: Ramboll	Billing Information: Tamara House-Knight	
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210		Container Preservative Type ** / Lab Project Manager:
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com	** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other
Copy To: Nick Zurweller nzurweller@ramboll.com	Site Collection Info/Address: Fort Smith, AR	Analyses
Customer Project Name/Number:	State: AR County/City: Sebastian Time Zone Collected: PT MT (CT) ET	LAB Profile/Line: 7444 Line 1
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [X] No	LAB Sample Receipt Checklist
Collected by (print): Alyssa Larson	Purchase Order #: DW PWS ID #:	
Collected by (signature): Alyssa	Quote #: DW Location Code #:	
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold	Turnaround Date Required: RUSH: Std TAT Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)	Immediately Packed on Ice? [X] Yes [ ] No; Field Filtered (if applicable): [ ] Yes [X] No; Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	VOCs (Full List 8260)	LAB USE ONLY: Lab Sample # / Comments
MW-17R-201910	GW	Grab	10/22/19	1555	N/A	N/A		3	X	001
MW-18I-201910				1425						002
MW-18E-201910				1536						003
MW-18E-201910-MS				1535						004
MW-18E-201910-MSD				1535						005
MW-02R-201910				1309						004 006
MW-08-201910				1434						005 007
MW-40R-201910				1605						006 008
MW-40R-201910-MS				1605						
MW-40R-201910-MSD	↓	↓	↓	1605	↓	↓		↓	↓	6

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	(Y)	N	NA
Custody Signatures Present	(Y)	N	NA
Collector Signature Present	(Y)	N	NA
Bottles Intact	(Y)	N	NA
Correct Bottles	(Y)	N	NA
Sufficient Volume	(Y)	N	NA
Samples received on ice	(Y)	N	NA
VOA - Headspace Acceptable	(Y)	N	NA
USDA Regulated Soils	Y	N	(NA)
Samples in holding time	(Y)	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips:			
Sample pH Acceptable	Y	(N)	NA
pH Strips:			
Sulfide Present	(Y)	N	NA
Lead Acetate Strips:			

60318969

↓ LAB USE ONLY: ↓

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y (N) N/A

Packing Material Used: Zip Bubble Bag

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: [ ] FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: (Y) N NA

Therm ID #: T298

Cooler Temp Upon Receipt: 1.6 oC 2.1

Cooler Therm Corr. Factor: +0.0 oC

Cooler Temp Corrected: 1.6 oC 2.1

Comments:

Trip Blank Received: (Y) N N/A

HCL MeOH TSP Other

Nonconformance(s): YES / NO

Page 1 of 4

Relinquished by/Company : (Signature) (see page 4)	Date/Time:	Received by/Company : (Signature)	Date/Time: 10.23.19 0620
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Container Preservative Type **: 3

Lab Project Manager:

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Copy To: Nick Zurweller nzurweller@ramboll.com

Site Collection Info/Address: Fort Smith, AR

Customer Project Name/Number:

State: AR / County/City: Sebastian / Time Zone Collected: PT MT CT ET

Phone:
Email:

Site/Facility ID #:

Compliance Monitoring? [ ] Yes [X] No

Collected by (print): Alyssa Larson

Purchase Order #:

DW PWS ID #:

Quote #:

DW Location Code #:

Collected by (signature): Alyssa Larson

Turnaround Date Required:

Immediately Packed on Ice? [X] Yes [ ] No

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive _____
[ ] Hold _____

RUSH: Std TAT Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [X] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses: VOCs (Full List 8260)

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60318969

↓ LAB USE ONLY: ↓

Customer Sample ID	Matrix*	Comp/Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	VOCs (Full List 8260)	Lab Sample # / Comments
MW-191-201910	GW	Grab	10/22/19	12:55	N/A	N/A		3	X	007
MW-190-201910	↓	↓	↓	14:25	↓	↓		↓	↓	008
MW-192-201910	↓	↓	↓	1555	↓	↓		↓	↓	009
MW-192-201910-MS	↓	↓	↓	1555	↓	↓		↓	↓	
MW-192-201910-MSD	↓	↓	↓	1555	↓	↓		↓	↓	
TMW-35-201910	↓	↓	↓	1550	↓	↓		↓	↓	010
TMW-35-201910-MS	↓	↓	↓	1550	↓	↓		↓	↓	[illegible]
TMW-35-201910-MSD	↓	↓	↓	1550	↓	↓		↓	↓	
MW-63R-201910	↓	↓	↓	1310	↓	↓		↓	↓	011
MW-39R-201910	↓	↓	↓	1430	↓	↓		↓	↓	012

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A
HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 2 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
	(see page 4)	[illegible]	10-23-19 0620
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

Pace Analytical®

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Container Preservative Type **: 3

Lab Project Manager:

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Copy To: Nick Zurweller nzurweller@ramboll.com

Site Collection Info/Address: Fort Smith, AR

Customer Project Name/Number:

State: AR / County/City: Sebastian / Time Zone Collected: PT MT (CT) ET

Phone:
Email:

Site/Facility ID #:

Compliance Monitoring? [ ] Yes [X] No

Collected by (print): Alyssa Larson

Purchase Order #:

DW PWS ID #:

Quote #:

DW Location Code #:

Collected by (signature): Alyssa L

Turnaround Date Required:

Immediately Packed on Ice? [X] Yes [ ] No

Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____

RUSH: Std TAT Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [X] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses: VOCs (Full List 8260)

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

60318969

↓ LAB USE ONLY: ↓ Lab Sample # / Comments

	Customer Sample ID	Matrix*	Comp/Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	VOCs (Full List 8260)	Lab Sample # / Comments
1	EB-01-201910	W	Grab	10/24/19	1650	N/A	N/A		3	X	013
1	TB-01-201910	W	—		17:05				2		014
1	MW-195-201910	GW	Grab		16:20				3		015
1	MW-195-201910-MS				16:20						
1	MW-195-201910-MSD				16:20						
1	TMW-29-201910				~~16:20~~ 1430						016
1	TMW-20-201910				1405						017
2	TB-02-201910	W	—		1715				2		018
1	ITMW-07-201910	GW	Grab		1715				3		019

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 3 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
	(see page 4)	[illegible]	10-27-19 [illegible]
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

F-ALL-C-010-rev 00, 05Jul2018

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-In Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller nzurweller@ramboll.com	Site Collection Info/Address: Fort Smith AR
Customer Project Name/Number:	State: AR County/City: Sebastian Time Zone Collected: PT MT (CT) ET
Phone: Email: jpavlowsky@ramboll.com	Site/Facility ID #:	Compliance Monitoring? [ ] Yes [ ] No
Collected by (print): Johanna Pavlowsky	Purchase Order #:	DW PWS ID #:
Collected by (signature): JP Pavlowsky	Quote #:	DW Location Code #:
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold	Turnaround Date Required: RUSH: (STD) Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)	Immediately Packed on Ice? [X] Yes [ ] No; Field Filtered (if applicable): [ ] Yes [X] No; Analysis:

Container Preservative Type **: (3) (D) (D) (2) (1) (O) (4??)

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other benzylalkonium chloride (BAK)

Lab Project Manager:

LAB Profile/Line: 7444 Line 1

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

	Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	VOCs EPA 8260D	Methylene, Ethane, Ethene (MEE)	MEE, Acetylene (MEEA)	Sulfate, Nitrate, Chloride	Sulfate, Nitrate (only)	Total organic carbon	TOTAL IRON	volatile fatty acids	TOTAL DISSOLVED CARBON	Sulfide	Hydrogen	Lab Sample # / Comments
2	TMW-21-20191O	GW	G	10-22-19	1600				12	X	X		X		X	X	X	X			020
2	TMW-11-20191O	GW	G		1345				14	X		X	X		X	X	X	X	X	X	021
2	TMW-10-20191O	GW	G		1405				14	X		X	X		X	X	X	X	X	X	022
2	MW-89-20191O	GW	G		1630				11	X		X		X	X	X			X	X	023

LAB USE ONLY: ↓

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	(Y)	N	NA
Custody Signatures Present	(Y)	N	NA
Collector Signature Present	(Y)	N	NA
Bottles Intact	(Y)	N	NA
Correct Bottles	(Y)	N	NA
Sufficient Volume	(Y)	N	NA
Samples received on ice	(Y)	N	NA
VOA - Headspace Acceptable	(Y)	N	NA
USDA Regulated Soils	(Y)	N	(NA)
Samples in holding time	(Y)	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips:			
Sample pH Acceptable	Y	(N)	NA
pH Strips:			
Sulfide Present	(Y)	N	NA
Lead Acetate Strips:			

60031869

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y (N) N/A

Packing Material Used: Zplc Bubble Bag

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: T298

Cooler Temp Upon Receipt: 1.6 oC 2.1

Cooler Therm Corr. Factor: +0.0 oC

Cooler Temp Corrected: 1.6 oC

Comments:

Trip Blank Received: (Y) N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Relinquished by/Company : (Signature) JP Pavlowsky /RSH	Date/Time: 10/22/19 @1800	Received by/Company : (Signature) Client Rep	Date/Time: 10/23/19 0620
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

Pace Analytical

Sample Receiving Non-Conformance Form (NCF)

Date: 10-23-19	Evaluated by: WC:pt / Pag	Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here
Client: Kaw boll		

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. If COC is incomplete, check applicable issues below and add details where appropriate:

	Collection date/time missing or incorrect		Analyses or analytes: missing or clarification needed		Samples listed on COC do not match samples received (missing, additional, etc.)
	Sample IDs on COC do not match sample labels		Required trip blanks were not received		Required signatures are missing

Comments/Details/Other Issues not listed above:

3. Sample integrity issues: check applicable issues below and add details where appropriate:

	Samples: Past holding time		Samples: Condition needs to be brought to lab personnel's attention (details below)	X	Preservation: Improper
	Samples: Not field filtered		Containers: Broken or compromised		Temperature: not within acceptance criteria (typically 0-6C)
	Samples: Insufficient volume received		Containers: Incorrect		Temperature: Samples arrived frozen
	Samples: Cooler damaged or compromised		Custody Seals: Missing or compromised on samples, trip blanks or coolers		Vials received with improper headspace
	Samples: contain chlorine or sulfides		Packing Material: Insufficient/Improper		Other:

Comments/Details:

TMW-21-201910 has PH of 3
added 2.5 mL of HNO3 Final PH 1.5 Lot 9589-34

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:	
PM Initials:	Date/Time:	

Client Comments/Instructions:

	AG1U	AG2U	AG3U	BP1U	BP2U	BP3U	BP3S	AG3S	BP3N	BP3C	BP3Z	DG9H	DG9Q	DG9U	JGFU	WGKU	VG9U	AG1H	AG2H	AG4U	AG5U	OTHR
1						1		1	1			3	3									1 - Boston Rd
2						1		1	1		1	3	3						40 mL - 2 - other			1 " " VGGU
3						1		1	1		1	3	3							" "		1 " " VGGU
4						1		1	1		1	3	3							" "		VGGU
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						
16																						
17																						
18																						
19																						
20																						

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 6, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60318969**

Pace Workorder: 31878

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Thursday, October 24, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/06/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 15

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31878 60318969

Lab ID	Sample ID	Matrix	Date Collected	Date Received
318780001	TMW-21-201910	Water	10/22/2019 16:00	10/24/2019 11:00
318780002	TMW-11-201910	Water	10/22/2019 13:45	10/24/2019 11:00
318780003	TMW-10-201910	Water	10/22/2019 14:05	10/24/2019 11:00

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31878 60318969

Lab ID: **318780001** Date Received: 10/24/2019 11:00 Matrix: Water

Sample ID: **TMW-21-201910** Date Collected: 10/22/2019 16:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<2.0**	mg/l	2.0	0.43	10	11/2/2019 01:54	KB	d
Acetic Acid	**130**	mg/l	10	2.8	100	11/2/2019 02:47	KB	d
Propionic Acid	**1300**	mg/l	100	4.0	1000	11/2/2019 03:40	KB	d
Formic Acid	**<50**	mg/l	50	8.6	100	11/2/2019 02:47	KB	d,B
Butyric Acid	**56**	mg/l	10	1.1	100	11/2/2019 02:47	KB	d
Pyruvic Acid	**5.4**	mg/l	1.0	0.050	10	11/2/2019 01:54	KB	d
i-Pentanoic Acid	**5.5**	mg/l	1.0	0.060	10	11/2/2019 01:54	KB	d
Pentanoic Acid	**130**	mg/l	10	0.70	100	11/2/2019 02:47	KB	d
i-Hexanoic Acid	**0.39**	mg/l	0.20	0.029	1	10/31/2019 05:16	KB	
Hexanoic Acid	**6.3**	mg/l	2.0	0.10	10	11/2/2019 01:54	KB	d

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31878 60318969

Lab ID: **318780002** Date Received: 10/24/2019 11:00 Matrix: Water

Sample ID: **TMW-11-201910** Date Collected: 10/22/2019 13:45

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	10/31/2019 06:09	KB	
Acetic Acid	**0.19**	mg/l	0.10	0.028	1	10/31/2019 06:09	KB	
Propionic Acid	**0.40**	mg/l	0.10	0.0040	1	10/31/2019 06:09	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	10/31/2019 06:09	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	10/31/2019 06:09	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	10/31/2019 06:09	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 06:09	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	10/31/2019 06:09	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 06:09	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	10/31/2019 06:09	KB	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31878 60318969

Lab ID: **318780003** Date Received: 10/24/2019 11:00 Matrix: Water

Sample ID: **TMW-10-201910** Date Collected: 10/22/2019 14:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	10/31/2019 07:03	KB	
Acetic Acid	**0.63**	mg/l	0.10	0.028	1	10/31/2019 07:03	KB	
Propionic Acid	**0.30**	mg/l	0.10	0.0040	1	10/31/2019 07:03	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	10/31/2019 07:03	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	10/31/2019 07:03	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	10/31/2019 07:03	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 07:03	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	10/31/2019 07:03	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 07:03	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	10/31/2019 07:03	KB	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31878 60318969

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
B	The analyte was detected in the associated blank.
d	The analyte concentration was determined from a dilution.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31878 60318969

QC Batch: EDON/4247 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 318780001, 318780002, 318780003

METHOD BLANK: 64054

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	
Formic Acid	mg/l	<0.50	0.50	
Butyric Acid	mg/l	<0.10	0.10	
Pyruvic Acid	mg/l	<0.10	0.10	
i-Pentanoic Acid	mg/l	<0.10	0.10	
Pentanoic Acid	mg/l	<0.10	0.10	
i-Hexanoic Acid	mg/l	<0.20	0.20	
Hexanoic Acid	mg/l	<0.20	0.20	

LABORATORY CONTROL SAMPLE: 64055

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	1.9	97	70-130	
Acetic Acid	mg/l	2	1.9	93	70-130	
Propionic Acid	mg/l	2	1.9	97	70-130	
Formic Acid	mg/l	2	2.2	112	70-130	
Butyric Acid	mg/l	2	2.0	100	70-130	
Pyruvic Acid	mg/l	2	1.8	90	70-130	
i-Pentanoic Acid	mg/l	2	2.0	98	70-130	
Pentanoic Acid	mg/l	2	1.9	97	70-130	
i-Hexanoic Acid	mg/l	2	2.0	99	70-130	
Hexanoic Acid	mg/l	2	1.8	92	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64056 64057 Original: 319080001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
EDonors											
Lactic Acid	mg/l	0.032	2	1.8	1.9	90	92	70-130	1.9	30	
Acetic Acid	mg/l	0.032	2	2.0	1.9	96	95	70-130	1.1	30	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31878 60318969

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64056 64057 Original: 319080001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Propionic Acid	mg/l	0.0053	2	2.0	1.9	98	97	70-130	1.3	30	
Formic Acid	mg/l	0.085	2	2.3	2.0	110	97	70-130	12	30	
Butyric Acid	mg/l	0.0049	2	2.0	2.0	100	98	70-130	1.7	30	
Pyruvic Acid	mg/l	0	2	1.7	1.7	87	87	70-130	0.46	30	
i-Pentanoic Acid	mg/l	0	2	2.0	2.0	100	98	70-130	2.5	30	
Pentanoic Acid	mg/l	0.036	2	2.0	1.9	98	95	70-130	3.6	30	
i-Hexanoic Acid	mg/l	0	2	2.1	2.0	105	98	70-130	6.9	30	
Hexanoic Acid	mg/l	0.0024	2	1.9	1.8	96	90	70-130	6.5	30	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31878 60318969

QC Batch: EDON/4257 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 318780001

METHOD BLANK: 64154

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	
Formic Acid	mg/l	<0.50	0.50	B
Butyric Acid	mg/l	<0.10	0.10	
Pyruvic Acid	mg/l	<0.10	0.10	
i-Pentanoic Acid	mg/l	<0.10	0.10	
Pentanoic Acid	mg/l	<0.10	0.10	
Hexanoic Acid	mg/l	<0.20	0.20	

LABORATORY CONTROL SAMPLE: 64155

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	2.0	98	70-130	
Acetic Acid	mg/l	2	1.9	97	70-130	
Propionic Acid	mg/l	2	2.0	99	70-130	
Formic Acid	mg/l	2	2.3	117	70-130	B
Butyric Acid	mg/l	2	2.0	100	70-130	
Pyruvic Acid	mg/l	2	1.8	90	70-130	
i-Pentanoic Acid	mg/l	2	2.0	99	70-130	
Pentanoic Acid	mg/l	2	2.0	102	70-130	
Hexanoic Acid	mg/l	2	1.9	94	70-130	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31878 60318969

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
318780001	TMW-21-201910			AM23G	EDON/4247
318780002	TMW-11-201910			AM23G	EDON/4247
318780003	TMW-10-201910			AM23G	EDON/4247
318780001	TMW-21-201910			AM23G	EDON/4257

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Chain of Custody

PASI Kansas Laboratory

31878

Pace Analytical®
www.pacelabs.com

Workorder: 60318969 **Workorder Name:** WHIRLPOOL FORT SMITH, AR **Results Requested By:** 11/6/2019

Report / Invoice To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy

P.O._____

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Requested Analysis: Volatile Fatty Acids	LAB USE ONLY
1	TMW-21-201910	10/22/2019 16:00	60318969020	Water		X	
2	TMW-11-201910	10/22/2019 13:45	60318969021	Water		X	
3	TMW-10-201910	10/22/2019 14:05	60318969022	Water		X	
4							
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	Kelly Fowler PASI	10/23/19 1800	PASI	10.24
2				11:00
3				

2 x 40 ml vials BAK

Cooler Temperature on Receipt 1.4 °C **Custody Seal** Y or (N) **Received on Ice** (Y)

Cooler Receipt Form

Client Name: Pace **Project:** 60318969 **Lab Work Order:** 31878

A. **Shipping/Container Information** (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ **Air bill Present:** (Yes) No

Tracking Number: 1219 2981 2342

Custody Seal on Cooler/Box Present: Yes (No) **Seals Intact:** Yes No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None **Ice Intact:** (Yes) Melted

Cooler Temperature: 1.40°C **Radiation Screened:** Yes (No) **Chain of Custody Present:** (Yes) No

Comments:_____

B. **Laboratory Assignment/Log-in** (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓	✓		
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?			✓	

Comments:_____

_____

Cooler contents examined/received by : LG **Date:** 10.24.19

Project Manager Review : JW **Date:** 10/24/19

F-PAE-Q-009-rev.01, 3Oct2017

NON-CONFORMANCE FORM

PAES Work Order #: 31878

Date: 10.24 Time of Receipt: 11:00 Receiver: LG

Client: Pace

REASON FOR NON-CONFORMANCE:

Vials IDs all started with ITMW.

ACTION TAKEN:

Client name: Jamie Church Date: 10/24/19 Time: 14:40

client emailed

Customer Service Initials: JW Date: 10/24/19

F-PAE-Q-014-rev.00, 20 Nov2014

Joseph Ward - Re: 60318969

From: Jamie Church
To: Ward, Joseph
Date: 10/24/2019 2:45 PM
Subject: Re: 60318969
Cc: Louis, Emma
Attachments: 60318969_coc.pdf

Here is the original COC. Says TMW

>>> Joseph Ward 10/24/2019 1:40 PM >>>
Upon receiving your samples for the project referenced above, We noticed the following.

The first three samples beginning ID's started with ITMW on the vials but on the COC it states the samples ID's should be TMW. Can you confirm the correct sample id?

Thank you

Joseph Ward
Customer Service
Pace Analytical Energy Services
220 William Pitt Way
Pittsburgh PA 15238
412-826-5245/412-826-2384(Direct)

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 15, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on October 24, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

REV-1, 11/15/19: Revised to include both Pace Energy Reports.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60319115001	MW-56R-201910	Water	10/23/19 11:29	10/24/19 06:15
60319115002	MW-57R-201910	Water	10/23/19 13:32	10/24/19 06:15
60319115003	TMW-19-201910	Water	10/23/19 16:06	10/24/19 06:15
60319115004	DUP-06-201910	Water	10/23/19 16:06	10/24/19 06:15
60319115005	MW-97-201910	Water	10/23/19 09:15	10/24/19 06:15
60319115006	MW-96-201910	Water	10/23/19 10:35	10/24/19 06:15
60319115007	MW-82-201910	Water	10/23/19 12:40	10/24/19 06:15
60319115008	DUP-02-201910	Water	10/23/19 12:40	10/24/19 06:15
60319115009	IW-78-201910	Water	10/23/19 14:05	10/24/19 06:15
60319115010	ITMW-1R-201910	Water	10/23/19 16:00	10/24/19 06:15
60319115011	MW-175-201910	Water	10/23/19 11:45	10/24/19 06:15
60319115012	TMW-30-201910	Water	10/23/19 14:45	10/24/19 06:15
60319115013	MW-182-201910	Water	10/23/19 16:00	10/24/19 06:15
60319115014	MW-29-201910	Water	10/23/19 09:10	10/24/19 06:15
60319115015	TMW-27-201910	Water	10/23/19 10:40	10/24/19 06:15
60319115016	ITMW-20-201910	Water	10/23/19 11:35	10/24/19 06:15
60319115017	DUP-05-201910	Water	10/23/19 11:35	10/24/19 06:15
60319115018	MW-26-201910	Water	10/23/19 12:35	10/24/19 06:15
60319115019	MW-84-201910	Water	10/23/19 14:55	10/24/19 06:15
60319115020	MW-22-201910	Water	10/23/19 16:00	10/24/19 06:15
60319115021	MW-28-201910	Water	10/23/19 17:15	10/24/19 06:15
60319115022	DUP-03-201910	Water	10/23/19 15:00	10/24/19 06:15
60319115023	MW-60R-201910	Water	10/23/19 09:40	10/24/19 06:15
60319115024	MW-196-201910	Water	10/23/19 10:55	10/24/19 06:15
60319115025	MW-55R-201910	Water	10/23/19 12:15	10/24/19 06:15
60319115026	DUP-04-2019110	Water	10/23/19 12:15	10/24/19 06:15
60319115027	TMW-24-2019110	Water	10/23/19 14:25	10/24/19 06:15
60319115028	TMW-23-2019110	Water	10/23/19 16:05	10/24/19 06:15
60319115029	MW-24-2019110	Water	10/23/19 17:20	10/24/19 06:15
60319115030	MW-178-201910	Water	10/23/19 16:45	10/24/19 06:15
60319115031	EB-02-201910	Water	10/23/19 17:05	10/24/19 06:15
60319115032	EB-03-201910	Water	10/23/19 17:05	10/24/19 06:15
60319115033	TB-03-201910	Water	10/23/19 07:30	10/24/19 06:15
60319115034	MW-98-201910	Water	10/23/19 09:50	10/24/19 06:15
60319115035	TB-04-201910	Water	10/23/19 17:50	10/24/19 06:15
60319115036	TB-05-201910	Water	10/23/19 17:55	10/24/19 06:15
60319115037	VP-10-201910	Water	10/23/19 10:00	10/24/19 06:15

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60319115038	VP-12-201910	Water	10/23/19 10:15	10/24/19 06:15
60319115039	VP-7-201910	Water	10/23/19 10:50	10/24/19 06:15
60319115040	VP-8-201910	Water	10/23/19 11:10	10/24/19 06:15
60319115041	VP-14-201910	Water	10/23/19 12:35	10/24/19 06:15
60319115042	MW-194-201910	Water	10/23/19 10:40	10/24/19 06:15
60319115043	MW-61R-201910	Water	10/23/19 09:10	10/24/19 06:15
60319115044	TMW-26-201910	Water	10/23/19 17:00	10/24/19 06:15
60319115045	MW-46R-201910	Water	10/23/19 15:00	10/24/19 06:15
60319115046	MW-184-201910	Water	10/23/19 13:40	10/24/19 06:15
60319115047	MW-183R-201910	Water	10/23/19 11:02	10/24/19 06:15
60319115048	MW-99-201910	Water	10/23/19 12:35	10/24/19 06:15
60319115049	I W-77-201910	Water	10/23/19 16:10	10/24/19 06:15
60319115050	TMW-12-201910	Water	10/23/19 09:30	10/24/19 06:15
60319115051	TMW-14-201910	Water	10/23/19 11:00	10/24/19 06:15
60319115052	MW -50R-201910	Water	10/23/19 09:35	10/24/19 06:15
60319115053	RW -69-201910	Water	10/23/19 11:25	10/24/19 06:15
60319115054	ITMW -9-201910	Water	10/23/19 13:05	10/24/19 06:15
60319115055	MW -87-201910	Water	10/23/19 13:10	10/24/19 06:15
60319115056	MW -58R-201910	Water	10/23/19 15:15	10/24/19 06:15
60319115057	MW -38-201910	Water	10/23/19 17:00	10/24/19 06:15
60319115058	DUP -01-201910	Water	10/23/19 15:15	10/24/19 06:15
60319115059	DUP -07-201910	Water	10/23/19 13:05	10/24/19 06:15
60319115060	TMW -16-201910	Water	10/23/19 15:15	10/24/19 06:15
60319115061	TMW -22R-201910	Water	10/23/19 12:30	10/24/19 06:15

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60319115001	MW-56R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115002	MW-57R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115003	TMW-19-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115004	DUP-06-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115005	MW-97-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115006	MW-96-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115007	MW-82-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115008	DUP-02-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115009	IW-78-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115010	ITMW-1R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115011	MW-175-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115012	TMW-30-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115013	MW-182-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115014	MW-29-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115015	TMW-27-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115016	ITMW-20-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115017	DUP-05-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115018	MW-26-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115019	MW-84-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115020	MW-22-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115021	MW-28-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115022	DUP-03-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115023	MW-60R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115024	MW-196-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115025	MW-55R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115026	DUP-04-2019110	EPA 5030B/8260	PGH	38	PASI-K
60319115027	TMW-24-2019110	EPA 5030B/8260	PGH	38	PASI-K
60319115028	TMW-23-2019110	EPA 5030B/8260	PGH	38	PASI-K
60319115029	MW-24-2019110	EPA 5030B/8260	PGH	38	PASI-K
60319115030	MW-178-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115031	EB-02-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115032	EB-03-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115033	TB-03-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115034	MW-98-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115035	TB-04-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115036	TB-05-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115037	VP-10-201910	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60319115038	**VP-12-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115039	**VP-7-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115040	**VP-8-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115041	**VP-14-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115042	**MW-194-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS, MJK	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115043	**MW-61R-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS, MJK	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115044	**TMW-26-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS, MJK	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115045	**MW-46R-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115046	**MW-184-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115047	**MW-183R-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115048	**MW-99-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115049	**I W-77-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115050	**TMW-12-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115051	**TMW-14-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115052	**MW -50R-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115053	**RW -69-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115054	**ITMW -9-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115055	**MW -87-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115056	**MW -58R-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115057	**MW -38-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MJK	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115058	**DUP -01-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115059	**DUP -07-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115060	**TMW -16-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115061	**TMW -22R-201910**	EPA 6010	LRS	1	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS, MJK	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
11 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
61 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

pH: Post-analysis pH measurement indicates insufficient VOA sample preservation.
- TMW-30-201910 (Lab ID: 60319115012)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 618529

B: Analyte was detected in the associated method blank.
- BLANK for HBN 618529 [MSV/1015 (Lab ID: 2524157)
  - 1,2-Dichloroethane
  - Tetrachloroethene

QC Batch: 618530

B: Analyte was detected in the associated method blank.
- BLANK for HBN 618530 [MSV/1015 (Lab ID: 2524159)
  - Carbon disulfide

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 618526

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 15, 2019

QC Batch: 618529
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 618530
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 618858
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 619234
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 619489
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 620343
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
6 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
11 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 unpres
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
11 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 618075

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60319115043,60319115057

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2521955)
  - Nitrogen, Nitrite

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **SM 5310C**
Description: 5310C TOC
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
11 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **SM 5310C**
Description: 5310C Diss. Organic Carbon LF
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
5 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 619520

B: Analyte was detected in the associated method blank.

- BLANK for HBN 619520 [WETA/631 (Lab ID: 2526889)
  - Dissolved Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-56R-201910 **Lab ID: 60319115001** Collected: 10/23/19 11:29 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 12:38	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 12:38	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 12:38	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 12:38	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 12:38	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 12:38	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 12:38	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 12:38	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 12:38	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 12:38	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 12:38	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 12:38	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 12:38	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 12:38	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 12:38	107-06-2	
1,1-Dichloroethene	**2.0**	ug/L	1.0	0.22	1		11/01/19 12:38	75-35-4	
cis-1,2-Dichloroethene	**16.9**	ug/L	1.0	0.17	1		11/01/19 12:38	156-59-2	
trans-1,2-Dichloroethene	**0.30J**	ug/L	1.0	0.17	1		11/01/19 12:38	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 12:38	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 12:38	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 12:38	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 12:38	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 12:38	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 12:38	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 12:38	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 12:38	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 12:38	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 12:38	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 12:38	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 12:38	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 12:38	79-00-5	
Trichloroethene	**649**	ug/L	20.0	3.4	20		11/05/19 15:53	79-01-6	
Vinyl chloride	**0.32J**	ug/L	1.0	0.11	1		11/01/19 12:38	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 12:38	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		11/01/19 12:38	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/01/19 12:38	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		11/01/19 12:38	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 12:38		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-57R-201910 **Lab ID: 60319115002** Collected: 10/23/19 13:32 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 12:23	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 12:23	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 12:23	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 12:23	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 12:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 12:23	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 12:23	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 12:23	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 12:23	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 12:23	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 12:23	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 12:23	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 12:23	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 12:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 12:23	107-06-2	
1,1-Dichloroethene	**1.6**	ug/L	1.0	0.22	1		11/01/19 12:23	75-35-4	
cis-1,2-Dichloroethene	**12.4**	ug/L	1.0	0.17	1		11/01/19 12:23	156-59-2	
trans-1,2-Dichloroethene	**0.24J**	ug/L	1.0	0.17	1		11/01/19 12:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 12:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 12:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 12:23	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 12:23	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 12:23	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 12:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 12:23	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 12:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 12:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 12:23	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 12:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 12:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 12:23	79-00-5	
Trichloroethene	**317**	ug/L	10.0	1.7	10		11/05/19 16:08	79-01-6	
Vinyl chloride	**0.39J**	ug/L	1.0	0.11	1		11/01/19 12:23	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 12:23	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/01/19 12:23	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		11/01/19 12:23	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 12:23	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 12:23		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-19-201910 **Lab ID: 60319115003** Collected: 10/23/19 16:06 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 10:43	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 10:43	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 10:43	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 10:43	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 10:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 10:43	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 10:43	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 10:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 10:43	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 10:43	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 10:43	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 10:43	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 10:43	124-48-1	
1,1-Dichloroethane	**0.25J**	ug/L	1.0	0.097	1		11/01/19 10:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 10:43	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 10:43	75-35-4	
cis-1,2-Dichloroethene	**1.6**	ug/L	1.0	0.17	1		11/01/19 10:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 10:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 10:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 10:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 10:43	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 10:43	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 10:43	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 10:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 10:43	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 10:43	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 10:43	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 10:43	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 10:43	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 10:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 10:43	79-00-5	
Trichloroethene	**13.6**	ug/L	1.0	0.17	1		11/01/19 10:43	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 10:43	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 10:43	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/01/19 10:43	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		11/01/19 10:43	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 10:43	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 10:43		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: DUP-06-201910 **Lab ID: 60319115004** Collected: 10/23/19 16:06 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 10:57	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 10:57	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 10:57	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 10:57	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 10:57	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 10:57	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 10:57	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 10:57	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 10:57	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 10:57	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 10:57	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 10:57	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 10:57	124-48-1	
1,1-Dichloroethane	**0.21J**	ug/L	1.0	0.097	1		11/01/19 10:57	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 10:57	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 10:57	75-35-4	
cis-1,2-Dichloroethene	**1.5**	ug/L	1.0	0.17	1		11/01/19 10:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 10:57	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 10:57	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 10:57	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 10:57	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 10:57	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 10:57	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 10:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 10:57	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 10:57	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 10:57	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 10:57	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 10:57	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 10:57	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 10:57	79-00-5	
Trichloroethene	**12.2**	ug/L	1.0	0.17	1		11/01/19 10:57	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 10:57	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 10:57	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		11/01/19 10:57	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/01/19 10:57	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 10:57	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 10:57		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-97-201910 **Lab ID: 60319115005** Collected: 10/23/19 09:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 11:12	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 11:12	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 11:12	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 11:12	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 11:12	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 11:12	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 11:12	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 11:12	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 11:12	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 11:12	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 11:12	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 11:12	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 11:12	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 11:12	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 11:12	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:12	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:12	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:12	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 11:12	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 11:12	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 11:12	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 11:12	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 11:12	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 11:12	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 11:12	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 11:12	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 11:12	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:12	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 11:12	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 11:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 11:12	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:12	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 11:12	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 11:12	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		11/01/19 11:12	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/01/19 11:12	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 11:12	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 11:12		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-96-201910 **Lab ID: 60319115006** Collected: 10/23/19 10:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 11:26	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 11:26	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 11:26	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 11:26	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 11:26	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 11:26	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 11:26	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 11:26	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 11:26	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 11:26	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 11:26	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 11:26	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 11:26	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 11:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 11:26	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 11:26	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 11:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 11:26	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 11:26	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 11:26	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 11:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 11:26	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 11:26	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 11:26	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:26	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 11:26	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 11:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 11:26	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:26	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 11:26	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 11:26	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		11/01/19 11:26	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		11/01/19 11:26	17060-07-0	
Toluene-d8 (S)	103	%	80-120		1		11/01/19 11:26	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 11:26		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-82-201910 **Lab ID: 60319115007** Collected: 10/23/19 12:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 11:54	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 11:54	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 11:54	75-27-4	
Bromoform	**0.79J**	ug/L	1.0	0.21	1		11/01/19 11:54	75-25-2	
Bromomethane	**0.40J**	ug/L	5.0	0.32	1		11/01/19 11:54	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 11:54	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 11:54	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 11:54	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 11:54	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 11:54	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 11:54	67-66-3	
Chloromethane	**0.39J**	ug/L	1.0	0.16	1		11/01/19 11:54	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 11:54	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 11:54	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 11:54	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:54	75-35-4	
cis-1,2-Dichloroethene	**1.1**	ug/L	1.0	0.17	1		11/01/19 11:54	156-59-2	
trans-1,2-Dichloroethene	**0.17J**	ug/L	1.0	0.17	1		11/01/19 11:54	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 11:54	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 11:54	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 11:54	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 11:54	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 11:54	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 11:54	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 11:54	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 11:54	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 11:54	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:54	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 11:54	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 11:54	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 11:54	79-00-5	
Trichloroethene	**55.6**	ug/L	1.0	0.17	1		11/01/19 11:54	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 11:54	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 11:54	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/01/19 11:54	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/01/19 11:54	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 11:54	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 11:54		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: DUP-02-201910 **Lab ID: 60319115008** Collected: 10/23/19 12:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 12:09	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 12:09	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 12:09	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 12:09	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 12:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 12:09	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 12:09	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 12:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 12:09	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 12:09	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 12:09	67-66-3	
Chloromethane	**0.50J**	ug/L	1.0	0.16	1		11/01/19 12:09	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 12:09	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 12:09	75-34-3	
1,2-Dichloroethane	**0.14J**	ug/L	1.0	0.14	1		11/01/19 12:09	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 12:09	75-35-4	
cis-1,2-Dichloroethene	**0.99J**	ug/L	1.0	0.17	1		11/01/19 12:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 12:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 12:09	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 12:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 12:09	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 12:09	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 12:09	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 12:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 12:09	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 12:09	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 12:09	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 12:09	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 12:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 12:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 12:09	79-00-5	
Trichloroethene	**55.9**	ug/L	1.0	0.17	1		11/01/19 12:09	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 12:09	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 12:09	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/01/19 12:09	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/01/19 12:09	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		11/01/19 12:09	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 12:09		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: IW-78-201910 **Lab ID: 60319115009** Collected: 10/23/19 14:05 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**5.3J**	ug/L	10.0	3.3	1		11/01/19 11:40	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 11:40	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 11:40	75-27-4	
Bromoform	**95.6**	ug/L	1.0	0.21	1		11/01/19 11:40	75-25-2	
Bromomethane	**0.82J**	ug/L	5.0	0.32	1		11/01/19 11:40	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 11:40	78-93-3	
Carbon disulfide	**0.21J**	ug/L	5.0	0.16	1		11/01/19 11:40	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 11:40	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 11:40	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 11:40	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 11:40	67-66-3	
Chloromethane	**1.1**	ug/L	1.0	0.16	1		11/01/19 11:40	74-87-3	
Dibromochloromethane	**2.8**	ug/L	1.0	0.15	1		11/01/19 11:40	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 11:40	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 11:40	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:40	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:40	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:40	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 11:40	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 11:40	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 11:40	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 11:40	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 11:40	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 11:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 11:40	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 11:40	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 11:40	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:40	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 11:40	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 11:40	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 11:40	79-00-5	
Trichloroethene	**2.4**	ug/L	1.0	0.17	1		11/01/19 11:40	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 11:40	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 11:40	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		11/01/19 11:40	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		11/01/19 11:40	17060-07-0	
Toluene-d8 (S)	96	%	80-120		1		11/01/19 11:40	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 11:40		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: ITMW-1R-201910 **Lab ID: 60319115010** Collected: 10/23/19 16:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 19:49	67-64-1	
Benzene	**0.18J**	ug/L	1.0	0.079	1		10/28/19 19:49	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 19:49	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 19:49	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 19:49	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 19:49	78-93-3	
Carbon disulfide	**1.2J**	ug/L	5.0	0.16	1		10/28/19 19:49	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 19:49	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 19:49	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 19:49	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 19:49	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 19:49	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 19:49	124-48-1	
1,1-Dichloroethane	**2.7**	ug/L	1.0	0.097	1		10/28/19 19:49	75-34-3	
1,2-Dichloroethane	**0.17J**	ug/L	1.0	0.14	1		10/28/19 19:49	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 19:49	75-35-4	
cis-1,2-Dichloroethene	**8.9**	ug/L	1.0	0.17	1		10/28/19 19:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 19:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 19:49	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 19:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 19:49	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 19:49	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 19:49	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 19:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 19:49	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 19:49	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 19:49	79-34-5	
Tetrachloroethene	**0.29J**	ug/L	1.0	0.22	1		10/28/19 19:49	127-18-4	B
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 19:49	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 19:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 19:49	79-00-5	
Trichloroethene	**11.4**	ug/L	1.0	0.17	1		10/28/19 19:49	79-01-6	
Vinyl chloride	**0.14J**	ug/L	1.0	0.11	1		10/28/19 19:49	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 19:49	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	80-120		1		10/28/19 19:49	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/28/19 19:49	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/28/19 19:49	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 19:49		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-175-201910 **Lab ID: 60319115011** Collected: 10/23/19 11:45 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 20:03	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 20:03	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 20:03	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 20:03	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 20:03	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 20:03	78-93-3	
Carbon disulfide	**0.40J**	ug/L	5.0	0.16	1		10/28/19 20:03	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 20:03	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 20:03	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 20:03	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 20:03	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 20:03	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 20:03	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 20:03	75-34-3	
1,2-Dichloroethane	**0.19J**	ug/L	1.0	0.14	1		10/28/19 20:03	107-06-2	B
1,1-Dichloroethene	**0.59J**	ug/L	1.0	0.22	1		10/28/19 20:03	75-35-4	
cis-1,2-Dichloroethene	**2.2**	ug/L	1.0	0.17	1		10/28/19 20:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 20:03	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 20:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 20:03	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 20:03	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 20:03	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 20:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 20:03	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 20:03	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 20:03	79-34-5	
Tetrachloroethene	**0.24J**	ug/L	1.0	0.22	1		10/28/19 20:03	127-18-4	B
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 20:03	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 20:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 20:03	79-00-5	
Trichloroethene	**138**	ug/L	1.0	0.17	1		10/28/19 20:03	79-01-6	
Vinyl chloride	**0.16J**	ug/L	1.0	0.11	1		10/28/19 20:03	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 20:03	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	80-120		1		10/28/19 20:03	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/28/19 20:03	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/28/19 20:03	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 20:03		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-30-201910 **Lab ID: 60319115012** Collected: 10/23/19 14:45 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**419**	ug/L	10.0	3.3	1		10/28/19 20:17	67-64-1	
Benzene	**0.31J**	ug/L	1.0	0.079	1		10/28/19 20:17	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 20:17	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 20:17	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 20:17	74-83-9	
2-Butanone (MEK)	**2600**	ug/L	200	14.0	20		10/31/19 14:56	78-93-3	
Carbon disulfide	**4.1J**	ug/L	5.0	0.16	1		10/28/19 20:17	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 20:17	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 20:17	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 20:17	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 20:17	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 20:17	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 20:17	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 20:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/28/19 20:17	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 20:17	75-35-4	
cis-1,2-Dichloroethene	**2.3**	ug/L	1.0	0.17	1		10/28/19 20:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 20:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 20:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 20:17	10061-02-6	
Ethylbenzene	**3.2**	ug/L	1.0	0.12	1		10/28/19 20:17	100-41-4	
2-Hexanone	**6.0J**	ug/L	10.0	1.0	1		10/28/19 20:17	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 20:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.3J**	ug/L	10.0	0.56	1		10/28/19 20:17	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 20:17	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 20:17	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 20:17	127-18-4	
Toluene	**1.0**	ug/L	1.0	0.14	1		10/28/19 20:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 20:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 20:17	79-00-5	
Trichloroethene	**2.5**	ug/L	1.0	0.17	1		10/28/19 20:17	79-01-6	
Vinyl chloride	**0.12J**	ug/L	1.0	0.11	1		10/28/19 20:17	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 20:17	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/28/19 20:17	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/28/19 20:17	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		10/28/19 20:17	2037-26-5	
Preservation pH	**4.0**		0.10	0.10	1		10/28/19 20:17		pH

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-182-201910 **Lab ID: 60319115013** Collected: 10/23/19 16:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 22:53	67-64-1	
Benzene	**0.16J**	ug/L	1.0	0.079	1		10/28/19 22:53	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 22:53	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 22:53	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 22:53	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 22:53	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 22:53	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 22:53	56-23-5	
Chlorobenzene	**6.7**	ug/L	1.0	0.13	1		10/28/19 22:53	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 22:53	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 22:53	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 22:53	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 22:53	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 22:53	75-34-3	
1,2-Dichloroethane	**0.18J**	ug/L	1.0	0.14	1		10/28/19 22:53	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 22:53	75-35-4	
cis-1,2-Dichloroethene	**1.8**	ug/L	1.0	0.17	1		10/28/19 22:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:53	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 22:53	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 22:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 22:53	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 22:53	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 22:53	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 22:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 22:53	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 22:53	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 22:53	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 22:53	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 22:53	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 22:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 22:53	79-00-5	
Trichloroethene	**26.3**	ug/L	1.0	0.17	1		10/28/19 22:53	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 22:53	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 22:53	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	80-120		1		10/28/19 22:53	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		10/28/19 22:53	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		10/28/19 22:53	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 22:53		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-29-201910 **Lab ID: 60319115014** Collected: 10/23/19 09:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 09:29	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 20:31	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 20:31	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 20:31	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 20:31	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 09:29	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 20:31	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 20:31	56-23-5	
Chlorobenzene	**4.6**	ug/L	1.0	0.13	1		10/28/19 20:31	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 20:31	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 20:31	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 20:31	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 20:31	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 20:31	75-34-3	
1,2-Dichloroethane	**0.16J**	ug/L	1.0	0.14	1		10/28/19 20:31	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 20:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 20:31	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 20:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 20:31	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 20:31	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 20:31	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 20:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 20:31	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 20:31	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 20:31	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 20:31	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 20:31	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 20:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 20:31	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:31	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 20:31	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 20:31	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/28/19 20:31	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	77-122		1		10/28/19 20:31	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/28/19 20:31	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 20:31		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-27-201910 **Lab ID: 60319115015** Collected: 10/23/19 10:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 20:46	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 20:46	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 20:46	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 20:46	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 20:46	74-83-9	
2-Butanone (MEK)	**1.7J**	ug/L	10.0	0.70	1		10/28/19 20:46	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 20:46	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 20:46	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 20:46	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 20:46	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 20:46	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 20:46	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 20:46	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 20:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/28/19 20:46	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 20:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 20:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 20:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 20:46	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 20:46	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 20:46	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 20:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 20:46	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 20:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 20:46	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 20:46	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 20:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 20:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 20:46	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:46	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 20:46	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 20:46	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	105	%	80-120		1		10/28/19 20:46	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	77-122		1		10/28/19 20:46	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/28/19 20:46	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 20:46		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: ITMW-20-201910 **Lab ID: 60319115016** Collected: 10/23/19 11:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 21:00	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 21:00	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 21:00	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 21:00	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 21:00	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 21:00	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 21:00	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 21:00	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 21:00	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 21:00	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 21:00	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 21:00	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 21:00	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 21:00	75-34-3	
1,2-Dichloroethane	**0.16J**	ug/L	1.0	0.14	1		10/28/19 21:00	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:00	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:00	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:00	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 21:00	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 21:00	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 21:00	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 21:00	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 21:00	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 21:00	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 21:00	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 21:00	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 21:00	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:00	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 21:00	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 21:00	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 21:00	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:00	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 21:00	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 21:00	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	105	%	80-120		1		10/28/19 21:00	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/28/19 21:00	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/28/19 21:00	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 21:00		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: DUP-05-201910 **Lab ID: 60319115017** Collected: 10/23/19 11:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 23:07	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 23:07	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 23:07	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 23:07	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 23:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 23:07	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 23:07	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 23:07	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 23:07	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 23:07	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 23:07	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 23:07	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 23:07	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 23:07	75-34-3	
1,2-Dichloroethane	**0.14J**	ug/L	1.0	0.14	1		10/28/19 23:07	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 23:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 23:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 23:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 23:07	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 23:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 23:07	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 23:07	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 23:07	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 23:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 23:07	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 23:07	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 23:07	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 23:07	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 23:07	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 23:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 23:07	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 23:07	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 23:07	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 23:07	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	80-120		1		10/28/19 23:07	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	77-122		1		10/28/19 23:07	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/28/19 23:07	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 23:07		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-26-201910 **Lab ID: 60319115018** Collected: 10/23/19 12:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 21:14	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 21:14	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 21:14	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 21:14	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 21:14	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 21:14	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 21:14	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 21:14	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 21:14	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 21:14	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 21:14	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 21:14	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 21:14	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 21:14	75-34-3	
1,2-Dichloroethane	**0.20J**	ug/L	1.0	0.14	1		10/28/19 21:14	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:14	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 21:14	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 21:14	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 21:14	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 21:14	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 21:14	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 21:14	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 21:14	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 21:14	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 21:14	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:14	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 21:14	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 21:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 21:14	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:14	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 21:14	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 21:14	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	80-120		1		10/28/19 21:14	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	77-122		1		10/28/19 21:14	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		10/28/19 21:14	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 21:14		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-84-201910 **Lab ID: 60319115019** Collected: 10/23/19 14:55 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**5.5J**	ug/L	10.0	3.3	1		10/28/19 21:28	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 21:28	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 21:28	75-27-4	
Bromoform	**3.7**	ug/L	1.0	0.21	1		10/28/19 21:28	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 21:28	74-83-9	
2-Butanone (MEK)	**0.97J**	ug/L	10.0	0.70	1		10/28/19 21:28	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 21:28	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 21:28	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 21:28	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 21:28	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 21:28	67-66-3	
Chloromethane	**0.94J**	ug/L	1.0	0.16	1		10/28/19 21:28	74-87-3	
Dibromochloromethane	**0.24J**	ug/L	1.0	0.15	1		10/28/19 21:28	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 21:28	75-34-3	
1,2-Dichloroethane	**0.17J**	ug/L	1.0	0.14	1		10/28/19 21:28	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 21:28	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 21:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 21:28	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 21:28	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 21:28	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 21:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 21:28	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 21:28	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 21:28	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:28	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 21:28	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 21:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 21:28	79-00-5	
Trichloroethene	**2.4**	ug/L	1.0	0.17	1		10/28/19 21:28	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 21:28	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 21:28	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	80-120		1		10/28/19 21:28	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	77-122		1		10/28/19 21:28	17060-07-0	
Toluene-d8 (S)	96	%	80-120		1		10/28/19 21:28	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 21:28		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-22-201910 **Lab ID: 60319115020** Collected: 10/23/19 16:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 21:42	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 21:42	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 21:42	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 21:42	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 21:42	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 21:42	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 21:42	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 21:42	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 21:42	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 21:42	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 21:42	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 21:42	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 21:42	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 21:42	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/28/19 21:42	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:42	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:42	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:42	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 21:42	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 21:42	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 21:42	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 21:42	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 21:42	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 21:42	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 21:42	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 21:42	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 21:42	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:42	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 21:42	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 21:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 21:42	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:42	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 21:42	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 21:42	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/28/19 21:42	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/28/19 21:42	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/28/19 21:42	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 21:42		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-28-201910 **Lab ID: 60319115021** Collected: 10/23/19 17:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 21:57	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 21:57	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 21:57	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 21:57	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 21:57	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 21:57	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 21:57	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 21:57	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 21:57	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 21:57	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 21:57	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 21:57	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 21:57	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 21:57	75-34-3	
1,2-Dichloroethane	**0.15J**	ug/L	1.0	0.14	1		10/28/19 21:57	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:57	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:57	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 21:57	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 21:57	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 21:57	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 21:57	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 21:57	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 21:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 21:57	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 21:57	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 21:57	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:57	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 21:57	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 21:57	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 21:57	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:57	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 21:57	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 21:57	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/28/19 21:57	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	77-122		1		10/28/19 21:57	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		10/28/19 21:57	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 21:57		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: DUP-03-201910 **Lab ID: 60319115022** Collected: 10/23/19 15:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 23:21	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 23:21	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 23:21	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 23:21	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 23:21	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 23:21	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 23:21	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 23:21	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 23:21	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 23:21	75-00-3	
Chloroform	**0.12J**	ug/L	1.0	0.10	1		10/28/19 23:21	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 23:21	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 23:21	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 23:21	75-34-3	
1,2-Dichloroethane	**0.18J**	ug/L	1.0	0.14	1		10/28/19 23:21	107-06-2	B
1,1-Dichloroethene	**1.9**	ug/L	1.0	0.22	1		10/28/19 23:21	75-35-4	
cis-1,2-Dichloroethene	**16.5**	ug/L	1.0	0.17	1		10/28/19 23:21	156-59-2	
trans-1,2-Dichloroethene	**0.49J**	ug/L	1.0	0.17	1		10/28/19 23:21	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 23:21	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 23:21	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 23:21	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 23:21	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 23:21	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 23:21	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 23:21	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 23:21	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 23:21	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 23:21	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 23:21	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 23:21	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 23:21	79-00-5	
Trichloroethene	**560**	ug/L	10.0	1.7	10		10/31/19 15:11	79-01-6	
Vinyl chloride	**0.56J**	ug/L	1.0	0.11	1		10/28/19 23:21	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 23:21	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	80-120		1		10/28/19 23:21	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	77-122		1		10/28/19 23:21	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/28/19 23:21	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 23:21		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-60R-201910 **Lab ID: 60319115023** Collected: 10/23/19 09:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 22:11	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 22:11	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 22:11	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 22:11	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 22:11	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 22:11	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 22:11	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 22:11	56-23-5	
Chlorobenzene	**0.17J**	ug/L	1.0	0.13	1		10/28/19 22:11	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 22:11	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 22:11	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 22:11	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 22:11	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 22:11	75-34-3	
1,2-Dichloroethane	**0.14J**	ug/L	1.0	0.14	1		10/28/19 22:11	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 22:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:11	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 22:11	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 22:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 22:11	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 22:11	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 22:11	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 22:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 22:11	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 22:11	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 22:11	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 22:11	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 22:11	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 22:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 22:11	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:11	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 22:11	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 22:11	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	80-120		1		10/28/19 22:11	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		10/28/19 22:11	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		10/28/19 22:11	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 22:11		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-196-201910 **Lab ID: 60319115024** Collected: 10/23/19 10:55 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 22:25	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 22:25	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 22:25	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 22:25	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 22:25	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 22:25	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 22:25	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 22:25	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 22:25	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 22:25	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 22:25	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 22:25	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 22:25	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 22:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/28/19 22:25	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 22:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:25	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 22:25	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 22:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 22:25	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 22:25	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 22:25	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 22:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 22:25	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 22:25	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 22:25	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 22:25	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 22:25	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 22:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 22:25	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:25	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 22:25	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 22:25	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/28/19 22:25	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/28/19 22:25	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/28/19 22:25	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 22:25		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-55R-201910 **Lab ID: 60319115025** Collected: 10/23/19 12:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 22:39	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 22:39	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 22:39	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 22:39	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 22:39	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 22:39	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 22:39	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 22:39	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 22:39	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 22:39	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 22:39	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 22:39	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 22:39	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 22:39	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/28/19 22:39	107-06-2	
1,1-Dichloroethene	**0.39J**	ug/L	1.0	0.22	1		10/28/19 22:39	75-35-4	
cis-1,2-Dichloroethene	**0.98J**	ug/L	1.0	0.17	1		10/28/19 22:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:39	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 22:39	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 22:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 22:39	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 22:39	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 22:39	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 22:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 22:39	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 22:39	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 22:39	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 22:39	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 22:39	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 22:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 22:39	79-00-5	
Trichloroethene	**26.4**	ug/L	1.0	0.17	1		10/28/19 22:39	79-01-6	
Vinyl chloride	**0.16J**	ug/L	1.0	0.11	1		10/28/19 22:39	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 22:39	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	80-120		1		10/28/19 22:39	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	77-122		1		10/28/19 22:39	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		10/28/19 22:39	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 22:39		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: DUP-04-2019110 **Lab ID: 60319115026** Collected: 10/23/19 12:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 23:36	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 23:36	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 23:36	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 23:36	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 23:36	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 23:36	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 23:36	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 23:36	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 23:36	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 23:36	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 23:36	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 23:36	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 23:36	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 23:36	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/28/19 23:36	107-06-2	B
1,1-Dichloroethene	**0.34J**	ug/L	1.0	0.22	1		10/28/19 23:36	75-35-4	
cis-1,2-Dichloroethene	**1.2**	ug/L	1.0	0.17	1		10/28/19 23:36	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 23:36	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 23:36	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 23:36	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 23:36	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 23:36	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 23:36	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 23:36	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 23:36	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 23:36	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 23:36	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 23:36	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 23:36	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 23:36	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 23:36	79-00-5	
Trichloroethene	**27.7**	ug/L	1.0	0.17	1		10/28/19 23:36	79-01-6	
Vinyl chloride	**0.18J**	ug/L	1.0	0.11	1		10/28/19 23:36	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 23:36	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/28/19 23:36	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		10/28/19 23:36	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/28/19 23:36	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 23:36		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-24-2019110 **Lab ID: 60319115027** Collected: 10/23/19 14:25 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 00:18	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 00:18	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 00:18	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 00:18	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 00:18	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 00:18	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 00:18	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 00:18	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 00:18	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 00:18	75-00-3	
Chloroform	**0.13J**	ug/L	1.0	0.10	1		10/29/19 00:18	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 00:18	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 00:18	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 00:18	75-34-3	
1,2-Dichloroethane	**0.17J**	ug/L	1.0	0.14	1		10/29/19 00:18	107-06-2	B
1,1-Dichloroethene	**1.5**	ug/L	1.0	0.22	1		10/29/19 00:18	75-35-4	
cis-1,2-Dichloroethene	**11.8**	ug/L	1.0	0.17	1		10/29/19 00:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 00:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 00:18	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 00:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 00:18	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 00:18	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 00:18	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 00:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 00:18	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 00:18	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 00:18	79-34-5	
Tetrachloroethene	**0.23J**	ug/L	1.0	0.22	1		10/29/19 00:18	127-18-4	B
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 00:18	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 00:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 00:18	79-00-5	
Trichloroethene	**575**	ug/L	10.0	1.7	10		10/31/19 15:25	79-01-6	
Vinyl chloride	**0.20J**	ug/L	1.0	0.11	1		10/29/19 00:18	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 00:18	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/29/19 00:18	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		10/29/19 00:18	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 00:18	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 00:18		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-23-2019110 **Lab ID: 60319115028** Collected: 10/23/19 16:05 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 23:50	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 23:50	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 23:50	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 23:50	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 23:50	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 23:50	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 23:50	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 23:50	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 23:50	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 23:50	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 23:50	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 23:50	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 23:50	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 23:50	75-34-3	
1,2-Dichloroethane	**0.18J**	ug/L	1.0	0.14	1		10/28/19 23:50	107-06-2	B
1,1-Dichloroethene	**0.36J**	ug/L	1.0	0.22	1		10/28/19 23:50	75-35-4	
cis-1,2-Dichloroethene	**2.5**	ug/L	1.0	0.17	1		10/28/19 23:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 23:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 23:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 23:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 23:50	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 23:50	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 23:50	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 23:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 23:50	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 23:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 23:50	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 23:50	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 23:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 23:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 23:50	79-00-5	
Trichloroethene	**189**	ug/L	1.0	0.17	1		10/28/19 23:50	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 23:50	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 23:50	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/28/19 23:50	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	77-122		1		10/28/19 23:50	17060-07-0	
Toluene-d8 (S)	96	%	80-120		1		10/28/19 23:50	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 23:50		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-24-2019110 **Lab ID: 60319115029** Collected: 10/23/19 17:20 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 00:04	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 00:04	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 00:04	75-27-4	
Bromoform	**3.1**	ug/L	1.0	0.21	1		10/29/19 00:04	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 00:04	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 00:04	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 00:04	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 00:04	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 00:04	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 00:04	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 00:04	67-66-3	
Chloromethane	**0.48J**	ug/L	1.0	0.16	1		10/29/19 00:04	74-87-3	
Dibromochloromethane	**0.25J**	ug/L	1.0	0.15	1		10/29/19 00:04	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 00:04	75-34-3	
1,2-Dichloroethane	**0.18J**	ug/L	1.0	0.14	1		10/29/19 00:04	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 00:04	75-35-4	
cis-1,2-Dichloroethene	**0.24J**	ug/L	1.0	0.17	1		10/29/19 00:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 00:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 00:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 00:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 00:04	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 00:04	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 00:04	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 00:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 00:04	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 00:04	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 00:04	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 00:04	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 00:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 00:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 00:04	79-00-5	
Trichloroethene	**19.0**	ug/L	1.0	0.17	1		10/29/19 00:04	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 00:04	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 00:04	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	80-120		1		10/29/19 00:04	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/29/19 00:04	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		10/29/19 00:04	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 00:04		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-178-201910 **Lab ID: 60319115030** Collected: 10/23/19 16:45 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 14:39	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 14:39	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 14:39	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 14:39	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 14:39	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 14:39	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 14:39	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 14:39	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 14:39	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 14:39	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 14:39	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 14:39	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 14:39	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 14:39	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 14:39	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:39	75-35-4	
cis-1,2-Dichloroethene	**1.2**	ug/L	1.0	0.17	1		10/29/19 14:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:39	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 14:39	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 14:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 14:39	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 14:39	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 14:39	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 14:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 14:39	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 14:39	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 14:39	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:39	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 14:39	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 14:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 14:39	79-00-5	
Trichloroethene	**4.1**	ug/L	1.0	0.17	1		10/29/19 14:39	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 14:39	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 14:39	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/29/19 14:39	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	77-122		1		10/29/19 14:39	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/29/19 14:39	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 14:39		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: EB-02-201910 **Lab ID: 60319115031** Collected: 10/23/19 17:05 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 14:11	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 14:11	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 14:11	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 14:11	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 14:11	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 14:11	78-93-3	
Carbon disulfide	**0.27J**	ug/L	5.0	0.16	1		10/29/19 14:11	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 14:11	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 14:11	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 14:11	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 14:11	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 14:11	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 14:11	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 14:11	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 14:11	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:11	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 14:11	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 14:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 14:11	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 14:11	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 14:11	591-78-6	
Methylene Chloride	**0.53J**	ug/L	1.0	0.27	1		10/29/19 14:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 14:11	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 14:11	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 14:11	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:11	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 14:11	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 14:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 14:11	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:11	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 14:11	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 14:11	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/29/19 14:11	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/29/19 14:11	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/29/19 14:11	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 14:11		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: EB-03-201910 **Lab ID: 60319115032** Collected: 10/23/19 17:05 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 14:25	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 14:25	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 14:25	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 14:25	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 14:25	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 14:25	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 14:25	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 14:25	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 14:25	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 14:25	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 14:25	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 14:25	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 14:25	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 14:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 14:25	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:25	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 14:25	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 14:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 14:25	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 14:25	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 14:25	591-78-6	
Methylene Chloride	**0.52J**	ug/L	1.0	0.27	1		10/29/19 14:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 14:25	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 14:25	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 14:25	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:25	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 14:25	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 14:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 14:25	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:25	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 14:25	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 14:25	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/29/19 14:25	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/29/19 14:25	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/29/19 14:25	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 14:25		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TB-03-201910 **Lab ID: 60319115033** Collected: 10/23/19 07:30 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 12:55	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 12:55	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 12:55	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 12:55	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 12:55	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 12:55	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 12:55	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 12:55	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 12:55	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 12:55	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 12:55	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 12:55	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 12:55	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 12:55	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 12:55	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 12:55	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 12:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 12:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 12:55	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 12:55	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 12:55	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 12:55	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 12:55	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 12:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 12:55	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 12:55	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 12:55	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 12:55	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 12:55	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 12:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 12:55	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 12:55	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 12:55	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 12:55	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/29/19 12:55	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		10/29/19 12:55	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 12:55	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 12:55		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-98-201910 **Lab ID: 60319115034** Collected: 10/23/19 09:50 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 14:53	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 14:53	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 14:53	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 14:53	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 14:53	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 14:53	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 14:53	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 14:53	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 14:53	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 14:53	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 14:53	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 14:53	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 14:53	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 14:53	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 14:53	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:53	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 14:53	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 14:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 14:53	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 14:53	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 14:53	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 14:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 14:53	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 14:53	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 14:53	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:53	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 14:53	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 14:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 14:53	79-00-5	
Trichloroethene	**0.38J**	ug/L	1.0	0.17	1		10/29/19 14:53	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 14:53	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 14:53	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		10/29/19 14:53	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		10/29/19 14:53	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/29/19 14:53	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 14:53		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TB-04-201910 **Lab ID: 60319115035** Collected: 10/23/19 17:50 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 13:09	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 13:09	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 13:09	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 13:09	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 13:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 13:09	78-93-3	
Carbon disulfide	**0.17J**	ug/L	5.0	0.16	1		10/29/19 13:09	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 13:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 13:09	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 13:09	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 13:09	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 13:09	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 13:09	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 13:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 13:09	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 13:09	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 13:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 13:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 13:09	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 13:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 13:09	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 13:09	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 13:09	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 13:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 13:09	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 13:09	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 13:09	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 13:09	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 13:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 13:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 13:09	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 13:09	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 13:09	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 13:09	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/29/19 13:09	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		10/29/19 13:09	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 13:09	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 13:09		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TB-05-201910 **Lab ID: 60319115036** Collected: 10/23/19 17:55 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 13:23	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 13:23	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 13:23	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 13:23	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 13:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 13:23	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 13:23	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 13:23	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 13:23	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 13:23	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 13:23	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 13:23	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 13:23	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 13:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 13:23	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 13:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 13:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 13:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 13:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 13:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 13:23	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 13:23	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 13:23	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 13:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 13:23	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 13:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 13:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 13:23	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 13:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 13:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 13:23	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 13:23	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 13:23	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 13:23	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/29/19 13:23	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/29/19 13:23	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 13:23	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 13:23		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: VP-10-201910 **Lab ID: 60319115037** Collected: 10/23/19 10:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**15.1**	ug/L	10.0	3.3	1		10/29/19 17:29	67-64-1	
Benzene	**0.50J**	ug/L	1.0	0.079	1		10/29/19 17:29	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 17:29	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 17:29	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 17:29	74-83-9	
2-Butanone (MEK)	**5.4J**	ug/L	10.0	0.70	1		10/29/19 17:29	78-93-3	
Carbon disulfide	**0.67J**	ug/L	5.0	0.16	1		10/29/19 17:29	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 17:29	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 17:29	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 17:29	75-00-3	
Chloroform	**2.9**	ug/L	1.0	0.10	1		10/29/19 17:29	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 17:29	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 17:29	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 17:29	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 17:29	107-06-2	
1,1-Dichloroethene	**1.4**	ug/L	1.0	0.22	1		10/29/19 17:29	75-35-4	
cis-1,2-Dichloroethene	**11.9**	ug/L	1.0	0.17	1		10/29/19 17:29	156-59-2	
trans-1,2-Dichloroethene	**0.30J**	ug/L	1.0	0.17	1		10/29/19 17:29	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 17:29	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 17:29	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 17:29	10061-02-6	
Ethylbenzene	**0.15J**	ug/L	1.0	0.12	1		10/29/19 17:29	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 17:29	591-78-6	
Methylene Chloride	**0.31J**	ug/L	1.0	0.27	1		10/29/19 17:29	75-09-2	
4-Methyl-2-pentanone (MIBK)	**0.83J**	ug/L	10.0	0.56	1		10/29/19 17:29	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 17:29	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 17:29	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 17:29	127-18-4	
Toluene	**1.1**	ug/L	1.0	0.14	1		10/29/19 17:29	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 17:29	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 17:29	79-00-5	
Trichloroethene	**3.3J**	ug/L	5.0	0.85	5		10/30/19 19:28	79-01-6	
Vinyl chloride	**0.52J**	ug/L	1.0	0.11	1		10/29/19 17:29	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 17:29	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/29/19 17:29	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/29/19 17:29	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 17:29	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 17:29		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: VP-12-201910 **Lab ID: 60319115038** Collected: 10/23/19 10:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 15:08	67-64-1	
Benzene	**0.21J**	ug/L	1.0	0.079	1		10/29/19 15:08	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 15:08	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 15:08	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 15:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 15:08	78-93-3	
Carbon disulfide	**0.34J**	ug/L	5.0	0.16	1		10/29/19 15:08	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 15:08	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 15:08	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 15:08	75-00-3	
Chloroform	**0.23J**	ug/L	1.0	0.10	1		10/29/19 15:08	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 15:08	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 15:08	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 15:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 15:08	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:08	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 15:08	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 15:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 15:08	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 15:08	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 15:08	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 15:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 15:08	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 15:08	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 15:08	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:08	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 15:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 15:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 15:08	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:08	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 15:08	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 15:08	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/29/19 15:08	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/29/19 15:08	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/29/19 15:08	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 15:08		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: VP-7-201910 **Lab ID: 60319115039** Collected: 10/23/19 10:50 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**143**	ug/L	10.0	3.3	1		10/29/19 15:50	67-64-1	
Benzene	**1.0**	ug/L	1.0	0.079	1		10/29/19 15:50	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 15:50	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 15:50	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 15:50	74-83-9	
2-Butanone (MEK)	**14.7**	ug/L	10.0	0.70	1		10/29/19 15:50	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 15:50	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 15:50	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 15:50	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 15:50	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 15:50	67-66-3	
Chloromethane	**0.40J**	ug/L	1.0	0.16	1		10/29/19 15:50	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 15:50	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 15:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 15:50	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 15:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 15:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 15:50	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 15:50	100-41-4	
2-Hexanone	**1.6J**	ug/L	10.0	1.0	1		10/29/19 15:50	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 15:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.8J**	ug/L	10.0	0.56	1		10/29/19 15:50	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 15:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 15:50	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:50	127-18-4	
Toluene	**0.28J**	ug/L	1.0	0.14	1		10/29/19 15:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 15:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 15:50	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:50	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 15:50	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 15:50	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/29/19 15:50	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/29/19 15:50	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 15:50	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 15:50		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: VP-8-201910 **Lab ID: 60319115040** Collected: 10/23/19 11:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**162**	ug/L	10.0	3.3	1		10/29/19 16:04	67-64-1	
Benzene	**0.90J**	ug/L	1.0	0.079	1		10/29/19 16:04	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 16:04	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 16:04	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 16:04	74-83-9	
2-Butanone (MEK)	**18.6**	ug/L	10.0	0.70	1		10/29/19 16:04	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 16:04	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 16:04	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 16:04	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 16:04	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 16:04	67-66-3	
Chloromethane	**0.66J**	ug/L	1.0	0.16	1		10/29/19 16:04	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 16:04	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 16:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 16:04	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:04	75-35-4	
cis-1,2-Dichloroethene	**0.23J**	ug/L	1.0	0.17	1		10/29/19 16:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 16:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 16:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 16:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 16:04	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 16:04	100-41-4	
2-Hexanone	**3.4J**	ug/L	10.0	1.0	1		10/29/19 16:04	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 16:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.5J**	ug/L	10.0	0.56	1		10/29/19 16:04	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 16:04	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 16:04	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:04	127-18-4	
Toluene	**0.50J**	ug/L	1.0	0.14	1		10/29/19 16:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 16:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 16:04	79-00-5	
Trichloroethene	**5.8**	ug/L	1.0	0.17	1		10/29/19 16:04	79-01-6	
Vinyl chloride	**0.26J**	ug/L	1.0	0.11	1		10/29/19 16:04	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 16:04	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		10/29/19 16:04	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/29/19 16:04	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 16:04	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 16:04		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: VP-14-201910 **Lab ID: 60319115041** Collected: 10/23/19 12:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 17:01	67-64-1	
Benzene	**0.25J**	ug/L	1.0	0.079	1		10/29/19 17:01	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 17:01	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 17:01	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 17:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 17:01	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 17:01	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 17:01	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 17:01	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 17:01	75-00-3	
Chloroform	**0.40J**	ug/L	1.0	0.10	1		10/29/19 17:01	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 17:01	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 17:01	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 17:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 17:01	107-06-2	
1,1-Dichloroethene	**1.1**	ug/L	1.0	0.22	1		10/29/19 17:01	75-35-4	
cis-1,2-Dichloroethene	**3.9**	ug/L	1.0	0.17	1		10/29/19 17:01	156-59-2	
trans-1,2-Dichloroethene	**0.36J**	ug/L	1.0	0.17	1		10/29/19 17:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 17:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 17:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 17:01	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 17:01	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 17:01	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 17:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 17:01	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 17:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 17:01	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 17:01	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 17:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 17:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 17:01	79-00-5	
Trichloroethene	**87.9**	ug/L	1.0	0.17	1		10/29/19 17:01	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 17:01	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 17:01	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		10/29/19 17:01	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/29/19 17:01	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/29/19 17:01	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 17:01		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-194-201910 **Lab ID: 60319115042** Collected: 10/23/19 10:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**6940**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:14	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**4.2J**	ug/L	10.0	3.3	1		10/29/19 16:18	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 16:18	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 16:18	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 16:18	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 16:18	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 16:18	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 16:18	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 16:18	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 16:18	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 16:18	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 16:18	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 16:18	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 16:18	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 16:18	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 16:18	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:18	75-35-4	
cis-1,2-Dichloroethene	**0.97J**	ug/L	1.0	0.17	1		10/29/19 16:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 16:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 16:18	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 16:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 16:18	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 16:18	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 16:18	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 16:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 16:18	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 16:18	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 16:18	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:18	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 16:18	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 16:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 16:18	79-00-5	
Trichloroethene	**10.8**	ug/L	1.0	0.17	1		10/29/19 16:18	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 16:18	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 16:18	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/29/19 16:18	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/29/19 16:18	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		10/29/19 16:18	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 16:18		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**155**	mg/L	20.0	4.4	20		11/02/19 14:36	16887-00-6	
Sulfate	**10.2**	mg/L	1.0	0.23	1		11/05/19 00:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-194-201910 **Lab ID: 60319115042** Collected: 10/23/19 10:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.053J**	mg/L	0.10	0.038	1		10/24/19 16:04		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:04	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:04	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.63J**	mg/L	1.0	0.29	1		10/29/19 15:36	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**0.58J**	mg/L	1.0	0.29	1		10/30/19 17:24		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-61R-201910 **Lab ID: 60319115043** Collected: 10/23/19 09:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**9690**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:22	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 16:32	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 16:32	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 16:32	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 16:32	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 16:32	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 16:32	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 16:32	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 16:32	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 16:32	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 16:32	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 16:32	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 16:32	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 16:32	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 16:32	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 16:32	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:32	75-35-4	
cis-1,2-Dichloroethene	**1.7**	ug/L	1.0	0.17	1		10/29/19 16:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 16:32	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 16:32	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 16:32	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 16:32	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 16:32	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 16:32	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 16:32	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 16:32	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 16:32	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 16:32	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:32	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 16:32	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 16:32	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 16:32	79-00-5	
Trichloroethene	**20.8**	ug/L	1.0	0.17	1		10/29/19 16:32	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 16:32	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 16:32	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/29/19 16:32	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/29/19 16:32	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/29/19 16:32	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 16:32		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**109**	mg/L	20.0	4.4	20		11/02/19 15:26	16887-00-6	
Sulfate	**12.1**	mg/L	1.0	0.23	1		11/05/19 01:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-61R-201910 **Lab ID: 60319115043** Collected: 10/23/19 09:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.069J**	mg/L	0.10	0.038	1		10/24/19 16:01		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:01	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:01	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.38J**	mg/L	1.0	0.29	1		10/29/19 16:30	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**0.57J**	mg/L	1.0	0.29	1		10/30/19 17:50		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-26-201910 **Lab ID: 60319115044** Collected: 10/23/19 17:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**34800**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:49	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**38.2**	ug/L	10.0	3.3	1		10/29/19 17:15	67-64-1	
Benzene	**0.12J**	ug/L	1.0	0.079	1		10/29/19 17:15	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 17:15	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 17:15	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 17:15	74-83-9	
2-Butanone (MEK)	**113**	ug/L	10.0	0.70	1		10/29/19 17:15	78-93-3	
Carbon disulfide	**1.2J**	ug/L	5.0	0.16	1		10/29/19 17:15	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 17:15	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 17:15	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 17:15	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 17:15	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 17:15	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 17:15	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 17:15	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 17:15	107-06-2	
1,1-Dichloroethene	**0.29J**	ug/L	1.0	0.22	1		10/29/19 17:15	75-35-4	
cis-1,2-Dichloroethene	**53.3**	ug/L	1.0	0.17	1		10/29/19 17:15	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 17:15	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 17:15	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 17:15	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 17:15	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 17:15	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 17:15	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 17:15	75-09-2	
4-Methyl-2-pentanone (MIBK)	**2.6J**	ug/L	10.0	0.56	1		10/29/19 17:15	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 17:15	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 17:15	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 17:15	127-18-4	
Toluene	**0.37J**	ug/L	1.0	0.14	1		10/29/19 17:15	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 17:15	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 17:15	79-00-5	
Trichloroethene	**42.9**	ug/L	1.0	0.17	1		10/29/19 17:15	79-01-6	
Vinyl chloride	**2.9**	ug/L	1.0	0.11	1		10/29/19 17:15	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 17:15	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/29/19 17:15	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/29/19 17:15	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		10/29/19 17:15	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 17:15		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**206**	mg/L	20.0	4.4	20		11/02/19 15:43	16887-00-6	
Sulfate	**33.9**	mg/L	2.0	0.46	2		11/05/19 02:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-26-201910 **Lab ID: 60319115044** Collected: 10/23/19 17:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**3.5**	mg/L	0.10	0.038	1		10/24/19 16:12		
Nitrogen, Nitrate	**3.4**	mg/L	0.10	0.067	1		10/24/19 16:12	14797-55-8	
Nitrogen, Nitrite	**0.14**	mg/L	0.10	0.067	1		10/24/19 16:12	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**212**	mg/L	25.0	7.2	25		10/31/19 16:44	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**203**	mg/L	25.0	7.2	25		10/31/19 23:12		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-46R-201910 **Lab ID: 60319115045** Collected: 10/23/19 15:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 17:43	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 17:43	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 17:43	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 17:43	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 17:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 17:43	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 17:43	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 17:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 17:43	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 17:43	75-00-3	
Chloroform	**0.13J**	ug/L	1.0	0.10	1		10/29/19 17:43	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 17:43	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 17:43	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 17:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 17:43	107-06-2	
1,1-Dichloroethene	**2.4**	ug/L	1.0	0.22	1		10/29/19 17:43	75-35-4	
cis-1,2-Dichloroethene	**22.1**	ug/L	1.0	0.17	1		10/29/19 17:43	156-59-2	
trans-1,2-Dichloroethene	**0.72J**	ug/L	1.0	0.17	1		10/29/19 17:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 17:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 17:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 17:43	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 17:43	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 17:43	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 17:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 17:43	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 17:43	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 17:43	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 17:43	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 17:43	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 17:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 17:43	79-00-5	
Trichloroethene	**555**	ug/L	10.0	1.7	10		10/30/19 19:42	79-01-6	
Vinyl chloride	**0.69J**	ug/L	1.0	0.11	1		10/29/19 17:43	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 17:43	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/29/19 17:43	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/29/19 17:43	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 17:43	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 17:43		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-184-201910 **Lab ID: 60319115046** Collected: 10/23/19 13:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 15:22	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 15:22	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 15:22	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 15:22	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 15:22	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 15:22	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 15:22	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 15:22	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 15:22	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 15:22	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 15:22	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 15:22	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 15:22	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 15:22	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 15:22	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:22	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:22	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 15:22	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 15:22	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 15:22	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 15:22	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 15:22	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 15:22	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 15:22	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 15:22	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 15:22	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:22	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 15:22	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 15:22	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 15:22	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:22	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 15:22	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 15:22	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/29/19 15:22	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/29/19 15:22	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/29/19 15:22	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 15:22		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-183R-201910 **Lab ID: 60319115047** Collected: 10/23/19 11:02 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 15:36	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 15:36	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 15:36	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 15:36	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 15:36	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 15:36	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 15:36	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 15:36	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 15:36	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 15:36	75-00-3	
Chloroform	**0.14J**	ug/L	1.0	0.10	1		10/29/19 15:36	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 15:36	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 15:36	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 15:36	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 15:36	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:36	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:36	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:36	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 15:36	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 15:36	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 15:36	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 15:36	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 15:36	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 15:36	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 15:36	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 15:36	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 15:36	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:36	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 15:36	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 15:36	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 15:36	79-00-5	
Trichloroethene	**1.2**	ug/L	1.0	0.17	1		10/29/19 15:36	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 15:36	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 15:36	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/29/19 15:36	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/29/19 15:36	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 15:36	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 15:36		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-99-201910 **Lab ID: 60319115048** Collected: 10/23/19 12:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 16:46	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 16:46	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 16:46	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 16:46	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 16:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 16:46	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 16:46	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 16:46	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 16:46	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 16:46	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 16:46	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 16:46	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 16:46	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 16:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 16:46	107-06-2	
1,1-Dichloroethene	**0.56J**	ug/L	1.0	0.22	1		10/29/19 16:46	75-35-4	
cis-1,2-Dichloroethene	**4.8**	ug/L	1.0	0.17	1		10/29/19 16:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 16:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 16:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 16:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 16:46	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 16:46	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 16:46	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 16:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 16:46	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 16:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 16:46	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:46	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 16:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 16:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 16:46	79-00-5	
Trichloroethene	**72.6**	ug/L	1.0	0.17	1		10/29/19 16:46	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 16:46	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 16:46	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	80-120		1		10/29/19 16:46	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/29/19 16:46	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/29/19 16:46	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 16:46		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: I W-77-201910 **Lab ID: 60319115049** Collected: 10/23/19 16:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**3.4J**	ug/L	10.0	3.3	1		10/29/19 17:57	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 17:57	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 17:57	75-27-4	
Bromoform	**0.74J**	ug/L	1.0	0.21	1		10/29/19 17:57	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 17:57	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 17:57	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 17:57	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 17:57	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 17:57	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 17:57	75-00-3	
Chloroform	**0.18J**	ug/L	1.0	0.10	1		10/29/19 17:57	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 17:57	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 17:57	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 17:57	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 17:57	107-06-2	
1,1-Dichloroethene	**0.70J**	ug/L	1.0	0.22	1		10/29/19 17:57	75-35-4	
cis-1,2-Dichloroethene	**6.8**	ug/L	1.0	0.17	1		10/29/19 17:57	156-59-2	
trans-1,2-Dichloroethene	**0.48J**	ug/L	1.0	0.17	1		10/29/19 17:57	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 17:57	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 17:57	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 17:57	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 17:57	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 17:57	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 17:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 17:57	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 17:57	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 17:57	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 17:57	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 17:57	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 17:57	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 17:57	79-00-5	
Trichloroethene	**180**	ug/L	10.0	1.7	10		10/31/19 18:15	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 17:57	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 17:57	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/29/19 17:57	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/29/19 17:57	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/29/19 17:57	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 17:57		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-12-201910 **Lab ID: 60319115050** Collected: 10/23/19 09:30 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 13:02	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 13:02	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 13:02	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 13:02	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 13:02	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 13:02	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 13:02	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 13:02	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 13:02	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 13:02	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 13:02	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 13:02	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 13:02	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 13:02	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 13:02	107-06-2	
1,1-Dichloroethene	**1.4**	ug/L	1.0	0.22	1		10/31/19 13:02	75-35-4	
cis-1,2-Dichloroethene	**10.1**	ug/L	1.0	0.17	1		10/31/19 13:02	156-59-2	
trans-1,2-Dichloroethene	**0.21J**	ug/L	1.0	0.17	1		10/31/19 13:02	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 13:02	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 13:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 13:02	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 13:02	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 13:02	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 13:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 13:02	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 13:02	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 13:02	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 13:02	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 13:02	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 13:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 13:02	79-00-5	
Trichloroethene	**471**	ug/L	10.0	1.7	10		10/31/19 13:17	79-01-6	
Vinyl chloride	**0.26J**	ug/L	1.0	0.11	1		10/31/19 13:02	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 13:02	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/31/19 13:02	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		10/31/19 13:02	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 13:02	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 13:02		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-14-201910 **Lab ID: 60319115051** Collected: 10/23/19 11:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 09:43	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 09:43	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 09:43	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 09:43	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 09:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 09:43	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 09:43	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 09:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 09:43	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 09:43	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 09:43	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 09:43	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 09:43	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 09:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 09:43	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 09:43	75-35-4	
cis-1,2-Dichloroethene	**0.60J**	ug/L	1.0	0.17	1		10/31/19 09:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 09:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 09:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 09:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 09:43	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 09:43	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 09:43	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 09:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 09:43	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 09:43	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 09:43	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 09:43	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 09:43	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 09:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 09:43	79-00-5	
Trichloroethene	**2.6**	ug/L	1.0	0.17	1		10/31/19 09:43	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 09:43	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 09:43	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 09:43	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	77-122		1		10/31/19 09:43	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/31/19 09:43	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 09:43		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -50R-201910 **Lab ID: 60319115052** Collected: 10/23/19 09:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**728**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:24	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 09:58	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 09:58	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 09:58	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 09:58	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 09:58	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 09:58	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 09:58	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 09:58	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 09:58	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 09:58	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 09:58	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 09:58	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 09:58	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 09:58	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 09:58	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 09:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 09:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 09:58	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 09:58	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 09:58	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 09:58	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 09:58	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 09:58	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 09:58	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 09:58	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 09:58	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 09:58	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 09:58	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 09:58	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 09:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 09:58	79-00-5	
Trichloroethene	**0.61J**	ug/L	1.0	0.17	1		10/31/19 09:58	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 09:58	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 09:58	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/31/19 09:58	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		10/31/19 09:58	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 09:58	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 09:58		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 11:02	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -50R-201910 **Lab ID: 60319115052** Collected: 10/23/19 09:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**17.1**	mg/L	1.0	0.23	1		11/05/19 02:17	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.043J**	mg/L	0.10	0.038	1		10/24/19 16:03		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:03	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:03	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.8**	mg/L	1.0	0.29	1		10/29/19 16:57	7440-44-0	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: RW -69-201910 **Lab ID: 60319115053** Collected: 10/23/19 11:25 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**638**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:32	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 10:40	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 10:40	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 10:40	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 10:40	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 10:40	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 10:40	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 10:40	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 10:40	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 10:40	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 10:40	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 10:40	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 10:40	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 10:40	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 10:40	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 10:40	107-06-2	
1,1-Dichloroethene	**1.5**	ug/L	1.0	0.22	1		10/31/19 10:40	75-35-4	
cis-1,2-Dichloroethene	**5.6**	ug/L	1.0	0.17	1		10/31/19 10:40	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 10:40	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 10:40	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 10:40	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 10:40	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 10:40	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 10:40	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 10:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 10:40	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 10:40	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 10:40	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 10:40	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 10:40	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 10:40	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 10:40	79-00-5	
Trichloroethene	**150**	ug/L	1.0	0.17	1		10/31/19 10:40	79-01-6	
Vinyl chloride	**0.53J**	ug/L	1.0	0.11	1		10/31/19 10:40	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 10:40	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/31/19 10:40	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/31/19 10:40	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		10/31/19 10:40	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 10:40		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 11:03	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: RW -69-201910 **Lab ID: 60319115053** Collected: 10/23/19 11:25 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**1.6**	mg/L	1.0	0.23	1		11/05/19 03:08	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		10/24/19 16:05		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:05	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:05	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.88J**	mg/L	1.0	0.29	1		10/29/19 17:10	7440-44-0	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: ITMW -9-201910 **Lab ID: 60319115054** Collected: 10/23/19 13:05 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**24.0J**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:34	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 11:37	67-64-1	
Benzene	**1.6**	ug/L	1.0	0.079	1		10/31/19 11:37	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 11:37	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 11:37	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 11:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 11:37	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 11:37	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 11:37	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 11:37	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 11:37	75-00-3	
Chloroform	**0.59J**	ug/L	1.0	0.10	1		10/31/19 11:37	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 11:37	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 11:37	124-48-1	
1,1-Dichloroethane	**4.6**	ug/L	1.0	0.097	1		10/31/19 11:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 11:37	107-06-2	
1,1-Dichloroethene	**13.8**	ug/L	1.0	0.22	1		10/31/19 11:37	75-35-4	
cis-1,2-Dichloroethene	**96.3**	ug/L	1.0	0.17	1		10/31/19 11:37	156-59-2	
trans-1,2-Dichloroethene	**3.0**	ug/L	1.0	0.17	1		10/31/19 11:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 11:37	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 11:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 11:37	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 11:37	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 11:37	591-78-6	
Methylene Chloride	**0.28J**	ug/L	1.0	0.27	1		10/31/19 11:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 11:37	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 11:37	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 11:37	79-34-5	
Tetrachloroethene	**2.9**	ug/L	1.0	0.22	1		10/31/19 11:37	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 11:37	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 11:37	71-55-6	
1,1,2-Trichloroethane	**0.15J**	ug/L	1.0	0.10	1		10/31/19 11:37	79-00-5	
Trichloroethene	**2720**	ug/L	50.0	8.5	50		10/31/19 11:51	79-01-6	
Vinyl chloride	**2.0**	ug/L	1.0	0.11	1		10/31/19 11:37	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 11:37	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/31/19 11:37	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	77-122		1		10/31/19 11:37	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 11:37	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 11:37		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 11:03	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: ITMW -9-201910 **Lab ID: 60319115054** Collected: 10/23/19 13:05 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**25.1**	mg/L	2.0	0.46	2		11/05/19 03:24	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**6.5**	mg/L	0.20	0.076	2		10/24/19 16:42		
Nitrogen, Nitrate	**6.5**	mg/L	0.20	0.13	2		10/24/19 16:42	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.20	0.13	2		10/24/19 16:42	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.8**	mg/L	1.0	0.29	1		10/29/19 17:23	7440-44-0	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -87-201910 **Lab ID: 60319115055** Collected: 10/23/19 13:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**82.8**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:37	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 13:31	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 13:31	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 13:31	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 13:31	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 13:31	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 13:31	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 13:31	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 13:31	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 13:31	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 13:31	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 13:31	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 13:31	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 13:31	124-48-1	
1,1-Dichloroethane	**1.1**	ug/L	1.0	0.097	1		10/31/19 13:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 13:31	107-06-2	
1,1-Dichloroethene	**2.9**	ug/L	1.0	0.22	1		10/31/19 13:31	75-35-4	
cis-1,2-Dichloroethene	**22.4**	ug/L	1.0	0.17	1		10/31/19 13:31	156-59-2	
trans-1,2-Dichloroethene	**0.89J**	ug/L	1.0	0.17	1		10/31/19 13:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 13:31	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 13:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 13:31	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 13:31	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 13:31	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 13:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 13:31	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 13:31	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 13:31	79-34-5	
Tetrachloroethene	**3.9**	ug/L	1.0	0.22	1		10/31/19 13:31	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 13:31	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 13:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 13:31	79-00-5	
Trichloroethene	**315**	ug/L	10.0	1.7	10		10/31/19 13:45	79-01-6	
Vinyl chloride	**0.21J**	ug/L	1.0	0.11	1		10/31/19 13:31	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 13:31	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 13:31	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/31/19 13:31	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 13:31	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 13:31		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 11:03	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -87-201910 **Lab ID: 60319115055** Collected: 10/23/19 13:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**13.6**	mg/L	1.0	0.23	1		11/05/19 03:41	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**2.4**	mg/L	0.10	0.038	1		10/24/19 16:10		
Nitrogen, Nitrate	**2.4**	mg/L	0.10	0.067	1		10/24/19 16:10	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:10	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.65J**	mg/L	1.0	0.29	1		10/29/19 17:36	7440-44-0	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -58R-201910 **Lab ID: 60319115056** Collected: 10/23/19 15:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**732**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:39	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 13:59	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 13:59	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 13:59	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 13:59	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 13:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 13:59	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 13:59	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 13:59	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 13:59	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 13:59	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 13:59	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 13:59	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 13:59	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 13:59	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 13:59	107-06-2	
1,1-Dichloroethene	**1.8**	ug/L	1.0	0.22	1		10/31/19 13:59	75-35-4	
cis-1,2-Dichloroethene	**9.1**	ug/L	1.0	0.17	1		10/31/19 13:59	156-59-2	
trans-1,2-Dichloroethene	**0.19J**	ug/L	1.0	0.17	1		10/31/19 13:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 13:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 13:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 13:59	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 13:59	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 13:59	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 13:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 13:59	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 13:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 13:59	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 13:59	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 13:59	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 13:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 13:59	79-00-5	
Trichloroethene	**299**	ug/L	10.0	1.7	10		10/31/19 14:14	79-01-6	
Vinyl chloride	**0.51J**	ug/L	1.0	0.11	1		10/31/19 13:59	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 13:59	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/31/19 13:59	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/31/19 13:59	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 13:59	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 13:59		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 11:04	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -58R-201910 **Lab ID: 60319115056** Collected: 10/23/19 15:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**1.7**	mg/L	1.0	0.23	1		11/05/19 03:58	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		10/24/19 16:11		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:11	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:11	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.40J**	mg/L	1.0	0.29	1		10/29/19 17:50	7440-44-0	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -38-201910 **Lab ID: 60319115057** Collected: 10/23/19 17:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**4060**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:42	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 12:06	67-64-1	
Benzene	**0.15J**	ug/L	1.0	0.079	1		10/31/19 12:06	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 12:06	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 12:06	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 12:06	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 12:06	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 12:06	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 12:06	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 12:06	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 12:06	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 12:06	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 12:06	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 12:06	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 12:06	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 12:06	107-06-2	
1,1-Dichloroethene	**8.1**	ug/L	1.0	0.22	1		10/31/19 12:06	75-35-4	
cis-1,2-Dichloroethene	**542**	ug/L	50.0	8.5	50		10/31/19 12:20	156-59-2	
trans-1,2-Dichloroethene	**3.4**	ug/L	1.0	0.17	1		10/31/19 12:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 12:06	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 12:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 12:06	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 12:06	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 12:06	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 12:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 12:06	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 12:06	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 12:06	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 12:06	127-18-4	
Toluene	**0.20J**	ug/L	1.0	0.14	1		10/31/19 12:06	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 12:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 12:06	79-00-5	
Trichloroethene	**2180**	ug/L	50.0	8.5	50		10/31/19 12:20	79-01-6	
Vinyl chloride	**307**	ug/L	50.0	5.5	50		10/31/19 12:20	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 12:06	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 12:06	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/31/19 12:06	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 12:06	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 12:06		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 11:04	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -38-201910 **Lab ID: 60319115057** Collected: 10/23/19 17:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**94.4**	mg/L	20.0	4.6	20		11/02/19 17:58	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.086J**	mg/L	0.10	0.038	1		10/24/19 16:13		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:13	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:13	14797-65-0	M1
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.3**	mg/L	1.0	0.29	1		10/29/19 18:03	7440-44-0	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: DUP -01-201910 **Lab ID: 60319115058** Collected: 10/23/19 15:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 14:28	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 14:28	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 14:28	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 14:28	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 14:28	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 14:28	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 14:28	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 14:28	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 14:28	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 14:28	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 14:28	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 14:28	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 14:28	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 14:28	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 14:28	107-06-2	
1,1-Dichloroethene	**1.8**	ug/L	1.0	0.22	1		10/31/19 14:28	75-35-4	
cis-1,2-Dichloroethene	**9.6**	ug/L	1.0	0.17	1		10/31/19 14:28	156-59-2	
trans-1,2-Dichloroethene	**0.25J**	ug/L	1.0	0.17	1		10/31/19 14:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 14:28	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 14:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 14:28	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 14:28	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 14:28	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 14:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 14:28	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 14:28	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 14:28	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 14:28	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 14:28	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 14:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 14:28	79-00-5	
Trichloroethene	**311**	ug/L	10.0	1.7	10		10/31/19 14:42	79-01-6	
Vinyl chloride	**0.55J**	ug/L	1.0	0.11	1		10/31/19 14:28	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 14:28	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 14:28	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/31/19 14:28	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 14:28	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 14:28		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: DUP -07-201910 **Lab ID: 60319115059** Collected: 10/23/19 13:05 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 12:34	67-64-1	
Benzene	**1.6**	ug/L	1.0	0.079	1		10/31/19 12:34	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 12:34	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 12:34	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 12:34	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 12:34	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 12:34	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 12:34	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 12:34	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 12:34	75-00-3	
Chloroform	**0.57J**	ug/L	1.0	0.10	1		10/31/19 12:34	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 12:34	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 12:34	124-48-1	
1,1-Dichloroethane	**4.5**	ug/L	1.0	0.097	1		10/31/19 12:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 12:34	107-06-2	
1,1-Dichloroethene	**13.8**	ug/L	1.0	0.22	1		10/31/19 12:34	75-35-4	
cis-1,2-Dichloroethene	**95.0**	ug/L	1.0	0.17	1		10/31/19 12:34	156-59-2	
trans-1,2-Dichloroethene	**3.0**	ug/L	1.0	0.17	1		10/31/19 12:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 12:34	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 12:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 12:34	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 12:34	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 12:34	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 12:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 12:34	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 12:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 12:34	79-34-5	
Tetrachloroethene	**3.0**	ug/L	1.0	0.22	1		10/31/19 12:34	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 12:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 12:34	71-55-6	
1,1,2-Trichloroethane	**0.12J**	ug/L	1.0	0.10	1		10/31/19 12:34	79-00-5	
Trichloroethene	**2810**	ug/L	50.0	8.5	50		10/31/19 12:48	79-01-6	
Vinyl chloride	**2.0**	ug/L	1.0	0.11	1		10/31/19 12:34	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 12:34	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 12:34	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/31/19 12:34	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		10/31/19 12:34	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 12:34		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW -16-201910 **Lab ID: 60319115060** Collected: 10/23/19 15:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**53400**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:52	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**73.7**	ug/L	10.0	3.3	1		10/31/19 10:12	67-64-1	
Benzene	**0.18J**	ug/L	1.0	0.079	1		10/31/19 10:12	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 10:12	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 10:12	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 10:12	74-83-9	
2-Butanone (MEK)	**325**	ug/L	10.0	0.70	1		10/31/19 10:12	78-93-3	
Carbon disulfide	**1.6J**	ug/L	5.0	0.16	1		10/31/19 10:12	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 10:12	56-23-5	
Chlorobenzene	**0.14J**	ug/L	1.0	0.13	1		10/31/19 10:12	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 10:12	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 10:12	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 10:12	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 10:12	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 10:12	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 10:12	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 10:12	75-35-4	
cis-1,2-Dichloroethene	**8.8**	ug/L	1.0	0.17	1		10/31/19 10:12	156-59-2	
trans-1,2-Dichloroethene	**0.39J**	ug/L	1.0	0.17	1		10/31/19 10:12	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 10:12	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 10:12	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 10:12	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 10:12	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 10:12	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 10:12	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.9J**	ug/L	10.0	0.56	1		10/31/19 10:12	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 10:12	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 10:12	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 10:12	127-18-4	
Toluene	**0.21J**	ug/L	1.0	0.14	1		10/31/19 10:12	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 10:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 10:12	79-00-5	
Trichloroethene	**6.0**	ug/L	1.0	0.17	1		10/31/19 10:12	79-01-6	
Vinyl chloride	**2.4**	ug/L	1.0	0.11	1		10/31/19 10:12	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 10:12	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 10:12	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/31/19 10:12	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 10:12	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 10:12		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**498**	mg/L	50.0	11.0	50		11/05/19 04:49	16887-00-6	
Sulfate	**3.9**	mg/L	1.0	0.23	1		11/05/19 04:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW -16-201910 **Lab ID: 60319115060** Collected: 10/23/19 15:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.081J**	mg/L	0.10	0.038	1		10/24/19 16:11		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:11	14797-55-8	
Nitrogen, Nitrite	**0.085J**	mg/L	0.10	0.067	1		10/24/19 16:11	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**449**	mg/L	50.0	14.5	50		10/31/19 17:10	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**469**	mg/L	50.0	14.5	50		10/31/19 23:38		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW -22R-201910 **Lab ID: 60319115061** Collected: 10/23/19 12:30 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**21200**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:44	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 11:09	67-64-1	
Benzene	**0.15J**	ug/L	1.0	0.079	1		10/31/19 11:09	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 11:09	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 11:09	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 11:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 11:09	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 11:09	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 11:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 11:09	108-90-7	
Chloroethane	**1.5**	ug/L	1.0	0.42	1		10/31/19 11:09	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 11:09	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 11:09	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 11:09	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 11:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 11:09	107-06-2	
1,1-Dichloroethene	**0.72J**	ug/L	1.0	0.22	1		10/31/19 11:09	75-35-4	
cis-1,2-Dichloroethene	**126**	ug/L	1.0	0.17	1		10/31/19 11:09	156-59-2	
trans-1,2-Dichloroethene	**1.1**	ug/L	1.0	0.17	1		10/31/19 11:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 11:09	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 11:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 11:09	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 11:09	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 11:09	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 11:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 11:09	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 11:09	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 11:09	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 11:09	127-18-4	
Toluene	**0.23J**	ug/L	1.0	0.14	1		10/31/19 11:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 11:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 11:09	79-00-5	
Trichloroethene	**146**	ug/L	1.0	0.17	1		10/31/19 11:09	79-01-6	
Vinyl chloride	**7.9**	ug/L	1.0	0.11	1		10/31/19 11:09	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 11:09	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/31/19 11:09	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		10/31/19 11:09	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 11:09	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 11:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**189**	mg/L	20.0	4.4	20		11/02/19 18:48	16887-00-6	
Sulfate	**2.8**	mg/L	1.0	0.23	1		11/05/19 05:22	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW -22R-201910 **Lab ID: 60319115061** Collected: 10/23/19 12:30 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.075J**	mg/L	0.10	0.038	1		10/24/19 16:08		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:08	14797-55-8	
Nitrogen, Nitrite	**0.069J**	mg/L	0.10	0.067	1		10/24/19 16:08	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.9**	mg/L	1.0	0.29	1		10/29/19 18:30	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**0.81J**	mg/L	1.0	0.29	1		11/01/19 00:19		B

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618327 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

METHOD BLANK: 2523009 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	14.0	10/28/19 12:12	

LABORATORY CONTROL SAMPLE: 2523010

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	9930	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2523011 2523012

Parameter	Units	60319115042 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	6940	10000	10000	16700	16800	98	98	75-125	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618526 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115001, 60319115002, 60319115003, 60319115004, 60319115005, 60319115006, 60319115007, 60319115008, 60319115009

METHOD BLANK: 2524149 Matrix: Water
Associated Lab Samples: 60319115001, 60319115002, 60319115003, 60319115004, 60319115005, 60319115006, 60319115007, 60319115008, 60319115009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/01/19 08:35	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/01/19 08:35	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/01/19 08:35	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/01/19 08:35	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/01/19 08:35	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/01/19 08:35	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/01/19 08:35	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/01/19 08:35	
2-Hexanone	ug/L	ND	10.0	1.0	11/01/19 08:35	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/01/19 08:35	
Acetone	ug/L	ND	10.0	3.3	11/01/19 08:35	
Benzene	ug/L	ND	1.0	0.079	11/01/19 08:35	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/01/19 08:35	
Bromoform	ug/L	ND	1.0	0.21	11/01/19 08:35	
Bromomethane	ug/L	ND	5.0	0.32	11/01/19 08:35	
Carbon disulfide	ug/L	ND	5.0	0.16	11/01/19 08:35	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/01/19 08:35	
Chlorobenzene	ug/L	ND	1.0	0.13	11/01/19 08:35	
Chloroethane	ug/L	ND	1.0	0.42	11/01/19 08:35	
Chloroform	ug/L	ND	1.0	0.10	11/01/19 08:35	
Chloromethane	ug/L	ND	1.0	0.16	11/01/19 08:35	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/01/19 08:35	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/01/19 08:35	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/01/19 08:35	
Ethylbenzene	ug/L	ND	1.0	0.12	11/01/19 08:35	
Methylene Chloride	ug/L	ND	1.0	0.27	11/01/19 08:35	
Styrene	ug/L	ND	1.0	0.15	11/01/19 08:35	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/01/19 08:35	
Toluene	ug/L	ND	1.0	0.14	11/01/19 08:35	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/01/19 08:35	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/01/19 08:35	
Trichloroethene	ug/L	ND	1.0	0.17	11/01/19 08:35	
Vinyl chloride	ug/L	ND	1.0	0.11	11/01/19 08:35	
Xylene (Total)	ug/L	ND	3.0	0.34	11/01/19 08:35	
1,2-Dichloroethane-d4 (S)	%	105	77-122		11/01/19 08:35	
4-Bromofluorobenzene (S)	%	100	80-120		11/01/19 08:35	
Toluene-d8 (S)	%	100	80-120		11/01/19 08:35	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

LABORATORY CONTROL SAMPLE: 2524150

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.7	103	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	20.0	100	71-122	
1,1,2-Trichloroethane	ug/L	20	20.4	102	76-123	
1,1-Dichloroethane	ug/L	20	20.5	103	78-117	
1,1-Dichloroethene	ug/L	20	23.0	115	74-122	
1,2-Dichloroethane	ug/L	20	19.9	100	73-120	
1,2-Dichloropropane	ug/L	20	20.7	103	78-115	
2-Butanone (MEK)	ug/L	100	96.8	97	54-133	
2-Hexanone	ug/L	100	94.9	95	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	97.2	97	62-130	
Acetone	ug/L	100	97.5	98	54-130	
Benzene	ug/L	20	20.3	102	80-120	
Bromodichloromethane	ug/L	20	18.8	94	78-121	
Bromoform	ug/L	20	16.6	83	62-137	
Bromomethane	ug/L	20	23.4	117	41-145	
Carbon disulfide	ug/L	20	20.3	102	64-119	
Carbon tetrachloride	ug/L	20	20.5	103	77-122	
Chlorobenzene	ug/L	20	20.3	101	80-123	
Chloroethane	ug/L	20	21.7	108	60-146	
Chloroform	ug/L	20	21.1	106	81-116	
Chloromethane	ug/L	20	21.4	107	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.2	101	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.3	101	78-118	
Dibromochloromethane	ug/L	20	17.6	88	73-128	
Ethylbenzene	ug/L	20	20.3	102	80-120	
Methylene Chloride	ug/L	20	22.1	110	80-126	
Styrene	ug/L	20	20.2	101	85-120	
Tetrachloroethene	ug/L	20	19.9	100	77-121	
Toluene	ug/L	20	20.1	101	80-120	
trans-1,2-Dichloroethene	ug/L	20	20.3	101	80-120	
trans-1,3-Dichloropropene	ug/L	20	17.9	90	76-123	
Trichloroethene	ug/L	20	22.5	112	80-121	
Vinyl chloride	ug/L	20	21.2	106	46-162	
Xylene (Total)	ug/L	60	61.0	102	80-120	
1,2-Dichloroethane-d4 (S)	%			103	77-122	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618529 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115010, 60319115011, 60319115012, 60319115013, 60319115014, 60319115015, 60319115016, 60319115017, 60319115018, 60319115019, 60319115020, 60319115021, 60319115022, 60319115023, 60319115024, 60319115025, 60319115026, 60319115027, 60319115028, 60319115029

METHOD BLANK: 2524157 Matrix: Water
Associated Lab Samples: 60319115010, 60319115011, 60319115012, 60319115013, 60319115014, 60319115015, 60319115016, 60319115017, 60319115018, 60319115019, 60319115020, 60319115021, 60319115022, 60319115023, 60319115024, 60319115025, 60319115026, 60319115027, 60319115028, 60319115029

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	10/28/19 19:34	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	10/28/19 19:34	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	10/28/19 19:34	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	10/28/19 19:34	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	10/28/19 19:34	
1,2-Dichloroethane	ug/L	0.15J	1.0	0.14	10/28/19 19:34	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	10/28/19 19:34	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	10/28/19 19:34	
2-Hexanone	ug/L	ND	10.0	1.0	10/28/19 19:34	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	10/28/19 19:34	
Acetone	ug/L	ND	10.0	3.3	10/28/19 19:34	
Benzene	ug/L	ND	1.0	0.079	10/28/19 19:34	
Bromodichloromethane	ug/L	ND	1.0	0.17	10/28/19 19:34	
Bromoform	ug/L	ND	1.0	0.21	10/28/19 19:34	
Bromomethane	ug/L	ND	5.0	0.32	10/28/19 19:34	
Carbon disulfide	ug/L	ND	5.0	0.16	10/28/19 19:34	
Carbon tetrachloride	ug/L	ND	1.0	0.084	10/28/19 19:34	
Chlorobenzene	ug/L	ND	1.0	0.13	10/28/19 19:34	
Chloroethane	ug/L	ND	1.0	0.42	10/28/19 19:34	
Chloroform	ug/L	ND	1.0	0.10	10/28/19 19:34	
Chloromethane	ug/L	ND	1.0	0.16	10/28/19 19:34	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/28/19 19:34	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	10/28/19 19:34	
Dibromochloromethane	ug/L	ND	1.0	0.15	10/28/19 19:34	
Ethylbenzene	ug/L	ND	1.0	0.12	10/28/19 19:34	
Methylene Chloride	ug/L	ND	1.0	0.27	10/28/19 19:34	
Styrene	ug/L	ND	1.0	0.15	10/28/19 19:34	
Tetrachloroethene	ug/L	0.30J	1.0	0.22	10/28/19 19:34	
Toluene	ug/L	ND	1.0	0.14	10/28/19 19:34	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/28/19 19:34	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	10/28/19 19:34	
Trichloroethene	ug/L	ND	1.0	0.17	10/28/19 19:34	
Vinyl chloride	ug/L	ND	1.0	0.11	10/28/19 19:34	
Xylene (Total)	ug/L	ND	3.0	0.34	10/28/19 19:34	
1,2-Dichloroethane-d4 (S)	%	102	77-122		10/28/19 19:34	
4-Bromofluorobenzene (S)	%	102	80-120		10/28/19 19:34	
Toluene-d8 (S)	%	98	80-120		10/28/19 19:34	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

LABORATORY CONTROL SAMPLE: 2524158

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	22.0	110	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.7	99	71-122	
1,1,2-Trichloroethane	ug/L	20	21.8	109	76-123	
1,1-Dichloroethane	ug/L	20	21.9	109	78-117	
1,1-Dichloroethene	ug/L	20	23.4	117	74-122	
1,2-Dichloroethane	ug/L	20	20.5	103	73-120	
1,2-Dichloropropane	ug/L	20	21.7	108	78-115	
2-Butanone (MEK)	ug/L	100	99.2	99	54-133	
2-Hexanone	ug/L	100	101	101	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	118	118	62-130	
Acetone	ug/L	100	102	102	54-130	
Benzene	ug/L	20	22.0	110	80-120	
Bromodichloromethane	ug/L	20	21.1	105	78-121	
Bromoform	ug/L	20	16.5	83	62-137	
Bromomethane	ug/L	20	15.0	75	41-145	
Carbon disulfide	ug/L	20	21.3	107	64-119	
Carbon tetrachloride	ug/L	20	20.3	102	77-122	
Chlorobenzene	ug/L	20	21.0	105	80-123	
Chloroethane	ug/L	20	20.4	102	60-146	
Chloroform	ug/L	20	21.1	105	81-116	
Chloromethane	ug/L	20	13.1	65	29-154	
cis-1,2-Dichloroethene	ug/L	20	22.0	110	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.7	103	78-118	
Dibromochloromethane	ug/L	20	19.3	96	73-128	
Ethylbenzene	ug/L	20	21.2	106	80-120	
Methylene Chloride	ug/L	20	21.8	109	80-126	
Styrene	ug/L	20	21.2	106	85-120	
Tetrachloroethene	ug/L	20	21.4	107	77-121	
Toluene	ug/L	20	21.4	107	80-120	
trans-1,2-Dichloroethene	ug/L	20	21.8	109	80-120	
trans-1,3-Dichloropropene	ug/L	20	18.8	94	76-123	
Trichloroethene	ug/L	20	22.6	113	80-121	
Vinyl chloride	ug/L	20	20.6	103	46-162	
Xylene (Total)	ug/L	60	65.6	109	80-120	
1,2-Dichloroethane-d4 (S)	%			102	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618530 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115030, 60319115031, 60319115032, 60319115033, 60319115034, 60319115035, 60319115036, 60319115037, 60319115038, 60319115039, 60319115040, 60319115041, 60319115042, 60319115043, 60319115044, 60319115045, 60319115046, 60319115047, 60319115048, 60319115049

METHOD BLANK: 2524159 Matrix: Water
Associated Lab Samples: 60319115030, 60319115031, 60319115032, 60319115033, 60319115034, 60319115035, 60319115036, 60319115037, 60319115038, 60319115039, 60319115040, 60319115041, 60319115042, 60319115043, 60319115044, 60319115045, 60319115046, 60319115047, 60319115048, 60319115049

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	10/29/19 12:40	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	10/29/19 12:40	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	10/29/19 12:40	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	10/29/19 12:40	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	10/29/19 12:40	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	10/29/19 12:40	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	10/29/19 12:40	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	10/29/19 12:40	
2-Hexanone	ug/L	ND	10.0	1.0	10/29/19 12:40	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	10/29/19 12:40	
Acetone	ug/L	ND	10.0	3.3	10/29/19 12:40	
Benzene	ug/L	ND	1.0	0.079	10/29/19 12:40	
Bromodichloromethane	ug/L	ND	1.0	0.17	10/29/19 12:40	
Bromoform	ug/L	ND	1.0	0.21	10/29/19 12:40	
Bromomethane	ug/L	ND	5.0	0.32	10/29/19 12:40	
Carbon disulfide	ug/L	0.19J	5.0	0.16	10/29/19 12:40	
Carbon tetrachloride	ug/L	ND	1.0	0.084	10/29/19 12:40	
Chlorobenzene	ug/L	ND	1.0	0.13	10/29/19 12:40	
Chloroethane	ug/L	ND	1.0	0.42	10/29/19 12:40	
Chloroform	ug/L	ND	1.0	0.10	10/29/19 12:40	
Chloromethane	ug/L	ND	1.0	0.16	10/29/19 12:40	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/29/19 12:40	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	10/29/19 12:40	
Dibromochloromethane	ug/L	ND	1.0	0.15	10/29/19 12:40	
Ethylbenzene	ug/L	ND	1.0	0.12	10/29/19 12:40	
Methylene Chloride	ug/L	ND	1.0	0.27	10/29/19 12:40	
Styrene	ug/L	ND	1.0	0.15	10/29/19 12:40	
Tetrachloroethene	ug/L	ND	1.0	0.22	10/29/19 12:40	
Toluene	ug/L	ND	1.0	0.14	10/29/19 12:40	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/29/19 12:40	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	10/29/19 12:40	
Trichloroethene	ug/L	ND	1.0	0.17	10/29/19 12:40	
Vinyl chloride	ug/L	ND	1.0	0.11	10/29/19 12:40	
Xylene (Total)	ug/L	ND	3.0	0.34	10/29/19 12:40	
1,2-Dichloroethane-d4 (S)	%	99	77-122		10/29/19 12:40	
4-Bromofluorobenzene (S)	%	103	80-120		10/29/19 12:40	
Toluene-d8 (S)	%	98	80-120		10/29/19 12:40	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

LABORATORY CONTROL SAMPLE: 2524160

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.1	100	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.7	99	71-122	
1,1,2-Trichloroethane	ug/L	20	18.1	91	76-123	
1,1-Dichloroethane	ug/L	20	20.5	102	78-117	
1,1-Dichloroethene	ug/L	20	20.3	102	74-122	
1,2-Dichloroethane	ug/L	20	20.1	101	73-120	
1,2-Dichloropropane	ug/L	20	20.7	104	78-115	
2-Butanone (MEK)	ug/L	100	94.7	95	54-133	
2-Hexanone	ug/L	100	98.8	99	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	108	108	62-130	
Acetone	ug/L	100	102	102	54-130	
Benzene	ug/L	20	20.0	100	80-120	
Bromodichloromethane	ug/L	20	20.0	100	78-121	
Bromoform	ug/L	20	17.3	86	62-137	
Bromomethane	ug/L	20	21.1	106	41-145	
Carbon disulfide	ug/L	20	20.5	102	64-119	
Carbon tetrachloride	ug/L	20	20.0	100	77-122	
Chlorobenzene	ug/L	20	19.4	97	80-123	
Chloroethane	ug/L	20	19.8	99	60-146	
Chloroform	ug/L	20	20.7	103	81-116	
Chloromethane	ug/L	20	17.9	89	29-154	
cis-1,2-Dichloroethene	ug/L	20	21.0	105	80-120	
cis-1,3-Dichloropropene	ug/L	20	21.2	106	78-118	
Dibromochloromethane	ug/L	20	19.6	98	73-128	
Ethylbenzene	ug/L	20	19.2	96	80-120	
Methylene Chloride	ug/L	20	22.2	111	80-126	
Styrene	ug/L	20	19.7	99	85-120	
Tetrachloroethene	ug/L	20	18.6	93	77-121	
Toluene	ug/L	20	19.0	95	80-120	
trans-1,2-Dichloroethene	ug/L	20	20.8	104	80-120	
trans-1,3-Dichloropropene	ug/L	20	19.0	95	76-123	
Trichloroethene	ug/L	20	20.6	103	80-121	
Vinyl chloride	ug/L	20	20.5	102	46-162	
Xylene (Total)	ug/L	60	59.1	98	80-120	
1,2-Dichloroethane-d4 (S)	%			105	77-122	
4-Bromofluorobenzene (S)	%			98	80-120	
Toluene-d8 (S)	%			97	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618858 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115012, 60319115014, 60319115022, 60319115027, 60319115050, 60319115051, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115058, 60319115059, 60319115060, 60319115061

METHOD BLANK: 2524826 Matrix: Water
Associated Lab Samples: 60319115012, 60319115014, 60319115022, 60319115027, 60319115050, 60319115051, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115058, 60319115059, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	10/31/19 08:47	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	10/31/19 08:47	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	10/31/19 08:47	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	10/31/19 08:47	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	10/31/19 08:47	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	10/31/19 08:47	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	10/31/19 08:47	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	10/31/19 08:47	
2-Hexanone	ug/L	ND	10.0	1.0	10/31/19 08:47	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	10/31/19 08:47	
Acetone	ug/L	ND	10.0	3.3	10/31/19 08:47	
Benzene	ug/L	ND	1.0	0.079	10/31/19 08:47	
Bromodichloromethane	ug/L	ND	1.0	0.17	10/31/19 08:47	
Bromoform	ug/L	ND	1.0	0.21	10/31/19 08:47	
Bromomethane	ug/L	ND	5.0	0.32	10/31/19 08:47	
Carbon disulfide	ug/L	ND	5.0	0.16	10/31/19 08:47	
Carbon tetrachloride	ug/L	ND	1.0	0.084	10/31/19 08:47	
Chlorobenzene	ug/L	ND	1.0	0.13	10/31/19 08:47	
Chloroethane	ug/L	ND	1.0	0.42	10/31/19 08:47	
Chloroform	ug/L	ND	1.0	0.10	10/31/19 08:47	
Chloromethane	ug/L	ND	1.0	0.16	10/31/19 08:47	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 08:47	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	10/31/19 08:47	
Dibromochloromethane	ug/L	ND	1.0	0.15	10/31/19 08:47	
Ethylbenzene	ug/L	ND	1.0	0.12	10/31/19 08:47	
Methylene Chloride	ug/L	ND	1.0	0.27	10/31/19 08:47	
Styrene	ug/L	ND	1.0	0.15	10/31/19 08:47	
Tetrachloroethene	ug/L	ND	1.0	0.22	10/31/19 08:47	
Toluene	ug/L	ND	1.0	0.14	10/31/19 08:47	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 08:47	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	10/31/19 08:47	
Trichloroethene	ug/L	ND	1.0	0.17	10/31/19 08:47	
Vinyl chloride	ug/L	ND	1.0	0.11	10/31/19 08:47	
Xylene (Total)	ug/L	ND	3.0	0.34	10/31/19 08:47	
1,2-Dichloroethane-d4 (S)	%	99	77-122		10/31/19 08:47	
4-Bromofluorobenzene (S)	%	98	80-120		10/31/19 08:47	
Toluene-d8 (S)	%	100	80-120		10/31/19 08:47	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

LABORATORY CONTROL SAMPLE: 2524827

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.0	95	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.3	96	71-122	
1,1,2-Trichloroethane	ug/L	20	19.5	97	76-123	
1,1-Dichloroethane	ug/L	20	19.6	98	78-117	
1,1-Dichloroethene	ug/L	20	21.4	107	74-122	
1,2-Dichloroethane	ug/L	20	18.8	94	73-120	
1,2-Dichloropropane	ug/L	20	19.2	96	78-115	
2-Butanone (MEK)	ug/L	100	89.8	90	54-133	
2-Hexanone	ug/L	100	93.2	93	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	96.5	96	62-130	
Acetone	ug/L	100	86.8	87	54-130	
Benzene	ug/L	20	19.3	96	80-120	
Bromodichloromethane	ug/L	20	18.3	91	78-121	
Bromoform	ug/L	20	17.1	86	62-137	
Bromomethane	ug/L	20	21.8	109	41-145	
Carbon disulfide	ug/L	20	19.6	98	64-119	
Carbon tetrachloride	ug/L	20	19.6	98	77-122	
Chlorobenzene	ug/L	20	19.3	97	80-123	
Chloroethane	ug/L	20	19.8	99	60-146	
Chloroform	ug/L	20	19.8	99	81-116	
Chloromethane	ug/L	20	17.8	89	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.0	95	80-120	
cis-1,3-Dichloropropene	ug/L	20	18.7	94	78-118	
Dibromochloromethane	ug/L	20	17.9	90	73-128	
Ethylbenzene	ug/L	20	19.3	96	80-120	
Methylene Chloride	ug/L	20	21.2	106	80-126	
Styrene	ug/L	20	19.3	96	85-120	
Tetrachloroethene	ug/L	20	18.9	94	77-121	
Toluene	ug/L	20	18.9	94	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.0	95	80-120	
trans-1,3-Dichloropropene	ug/L	20	17.4	87	76-123	
Trichloroethene	ug/L	20	21.3	106	80-121	
Vinyl chloride	ug/L	20	19.8	99	46-162	
Xylene (Total)	ug/L	60	58.4	97	80-120	
1,2-Dichloroethane-d4 (S)	%			99	77-122	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 619234
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115037, 60319115045

METHOD BLANK: 2526076 Matrix: Water
Associated Lab Samples: 60319115037, 60319115045

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Trichloroethene	ug/L	ND	1.0	0.17	10/30/19 14:59	
1,2-Dichloroethane-d4 (S)	%	99	77-122		10/30/19 14:59	
4-Bromofluorobenzene (S)	%	102	80-120		10/30/19 14:59	
Toluene-d8 (S)	%	100	80-120		10/30/19 14:59	

LABORATORY CONTROL SAMPLE: 2526077

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichloroethene	ug/L	20	22.2	111	80-121	
1,2-Dichloroethane-d4 (S)	%			99	77-122	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			101	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 619489
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115049

METHOD BLANK: 2526812 Matrix: Water
Associated Lab Samples: 60319115049

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Trichloroethene	ug/L	ND	1.0	0.17	10/31/19 16:21	
1,2-Dichloroethane-d4 (S)	%	100	77-122		10/31/19 16:21	
4-Bromofluorobenzene (S)	%	99	80-120		10/31/19 16:21	
Toluene-d8 (S)	%	101	80-120		10/31/19 16:21	

LABORATORY CONTROL SAMPLE: 2526813

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichloroethene	ug/L	20	23.5	118	80-121	
1,2-Dichloroethane-d4 (S)	%			105	77-122	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 620343
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115001, 60319115002

METHOD BLANK: 2529674 Matrix: Water
Associated Lab Samples: 60319115001, 60319115002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Trichloroethene	ug/L	ND	1.0	0.17	11/05/19 14:42	
1,2-Dichloroethane-d4 (S)	%	99	77-122		11/05/19 14:42	
4-Bromofluorobenzene (S)	%	99	80-120		11/05/19 14:42	
Toluene-d8 (S)	%	101	80-120		11/05/19 14:42	

LABORATORY CONTROL SAMPLE: 2529675

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichloroethene	ug/L	20	21.8	109	80-121	
1,2-Dichloroethane-d4 (S)	%			100	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618515 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057

METHOD BLANK: 2524109 Matrix: Water
Associated Lab Samples: 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	0.039	10/28/19 10:58	

LABORATORY CONTROL SAMPLE: 2524110

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.49	99	80-120	

MATRIX SPIKE SAMPLE: 2524111

Parameter	Units	60319063002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.5	0.51	101	75-125	

SAMPLE DUPLICATE: 2524112

Parameter	Units	60319116002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

SAMPLE DUPLICATE: 2524113

Parameter	Units	60319146002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 620025 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

METHOD BLANK: 2528885 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	11/02/19 14:02	
Sulfate	mg/L	ND	1.0	0.23	11/02/19 14:02	

METHOD BLANK: 2529453 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	11/05/19 08:38	
Sulfate	mg/L	ND	1.0	0.23	11/05/19 08:38	

LABORATORY CONTROL SAMPLE: 2528886

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	101	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

LABORATORY CONTROL SAMPLE: 2529454

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	
Sulfate	mg/L	5	5.3	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2528887 2528888

Parameter	Units	60319115042 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	155	100	100	260	258	105	103	80-120	1	15	
Sulfate	mg/L	10.2	5	5	15.6	15.5	109	108	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

MATRIX SPIKE SAMPLE: 2528889

Parameter	Units	60319115060 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	498	250	748	100	80-120	
Sulfate	mg/L	3.9	5	8.9	100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618075 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

METHOD BLANK: 2521951 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	0.067	10/24/19 15:59	
Nitrogen, Nitrite	mg/L	ND	0.10	0.067	10/24/19 15:59	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	10/24/19 15:59	

LABORATORY CONTROL SAMPLE: 2521952

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	0.90	90	70-130	
Nitrogen, Nitrite	mg/L	1	1.0	102	90-110	
Nitrogen, NO2 plus NO3	mg/L	2	1.9	96	90-110	

MATRIX SPIKE SAMPLE: 2521953

Parameter	Units	60319115043 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	1	0.95	95	70-130	
Nitrogen, Nitrite	mg/L	ND	1	1.1	110	90-110	
Nitrogen, NO2 plus NO3	mg/L	0.069J	2	2.0	99	90-110	

MATRIX SPIKE SAMPLE: 2521955

Parameter	Units	60319115057 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	1	1.0	101	70-130	
Nitrogen, Nitrite	mg/L	ND	1	1.1	111	90-110	M1
Nitrogen, NO2 plus NO3	mg/L	0.086J	2	2.1	102	90-110	

SAMPLE DUPLICATE: 2521954

Parameter	Units	60319115042 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	ND	ND		20	
Nitrogen, Nitrite	mg/L	ND	ND		20	
Nitrogen, NO2 plus NO3	mg/L	0.053J	0.051J		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618924 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60319115042, 60319115043, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115061

METHOD BLANK: 2525011 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	10/29/19 13:49	

LABORATORY CONTROL SAMPLE: 2525012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.5	110	80-120	

MATRIX SPIKE SAMPLE: 2525013

Parameter	Units	60318535007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	17.1	25	44.6	110	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 619519 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60319115044, 60319115060

METHOD BLANK: 2526884 Matrix: Water
Associated Lab Samples: 60319115044, 60319115060

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	10/31/19 16:17	

LABORATORY CONTROL SAMPLE: 2526885

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.5	110	80-120	

MATRIX SPIKE SAMPLE: 2526886

Parameter	Units	60319115044 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	212	125	345	106	80-120	

SAMPLE DUPLICATE: 2526887

Parameter	Units	60318969020 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	1130	1130	0	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 619152 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60319115042, 60319115043

METHOD BLANK: 2525777 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.29	10/30/19 16:57	

LABORATORY CONTROL SAMPLE: 2525778

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.6	112	80-120	

MATRIX SPIKE SAMPLE: 2525779

Parameter	Units	60319115042 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	0.58J	5	4.8	84	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 619520 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60319115044, 60319115060, 60319115061

METHOD BLANK: 2526889 Matrix: Water
Associated Lab Samples: 60319115044, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	0.30J	1.0	0.29	10/31/19 22:45	

LABORATORY CONTROL SAMPLE: 2526890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.5	111	80-120	

MATRIX SPIKE SAMPLE: 2526891

Parameter	Units	60319115044 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	203	125	329	101	80-120	

SAMPLE DUPLICATE: 2526892

Parameter	Units	60319115061 Result	Dup Result	RPD	Max RPD	Qualifiers
Dissolved Organic Carbon	mg/L	0.81J	0.78J		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 618526
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 618529
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 618530
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 618858
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 619234
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 619489
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 620343
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
pH	Post-analysis pH measurement indicates insufficient VOA sample preservation.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319115042	MW-194-201910	EPA 3010	618327	EPA 6010	618369
60319115043	MW-61R-201910	EPA 3010	618327	EPA 6010	618369
60319115044	TMW-26-201910	EPA 3010	618327	EPA 6010	618369
60319115052	MW -50R-201910	EPA 3010	618327	EPA 6010	618369
60319115053	RW -69-201910	EPA 3010	618327	EPA 6010	618369
60319115054	ITMW -9-201910	EPA 3010	618327	EPA 6010	618369
60319115055	MW -87-201910	EPA 3010	618327	EPA 6010	618369
60319115056	MW -58R-201910	EPA 3010	618327	EPA 6010	618369
60319115057	MW -38-201910	EPA 3010	618327	EPA 6010	618369
60319115060	TMW -16-201910	EPA 3010	618327	EPA 6010	618369
60319115061	TMW -22R-201910	EPA 3010	618327	EPA 6010	618369
60319115001	MW-56R-201910	EPA 5030B/8260	618526		
60319115001	MW-56R-201910	EPA 5030B/8260	620343		
60319115002	MW-57R-201910	EPA 5030B/8260	618526		
60319115002	MW-57R-201910	EPA 5030B/8260	620343		
60319115003	TMW-19-201910	EPA 5030B/8260	618526		
60319115004	DUP-06-201910	EPA 5030B/8260	618526		
60319115005	MW-97-201910	EPA 5030B/8260	618526		
60319115006	MW-96-201910	EPA 5030B/8260	618526		
60319115007	MW-82-201910	EPA 5030B/8260	618526		
60319115008	DUP-02-201910	EPA 5030B/8260	618526		
60319115009	IW-78-201910	EPA 5030B/8260	618526		
60319115010	ITMW-1R-201910	EPA 5030B/8260	618529		
60319115011	MW-175-201910	EPA 5030B/8260	618529		
60319115012	TMW-30-201910	EPA 5030B/8260	618529		
60319115012	TMW-30-201910	EPA 5030B/8260	618858		
60319115013	MW-182-201910	EPA 5030B/8260	618529		
60319115014	MW-29-201910	EPA 5030B/8260	618529		
60319115014	MW-29-201910	EPA 5030B/8260	618858		
60319115015	TMW-27-201910	EPA 5030B/8260	618529		
60319115016	ITMW-20-201910	EPA 5030B/8260	618529		
60319115017	DUP-05-201910	EPA 5030B/8260	618529		
60319115018	MW-26-201910	EPA 5030B/8260	618529		
60319115019	MW-84-201910	EPA 5030B/8260	618529		
60319115020	MW-22-201910	EPA 5030B/8260	618529		
60319115021	MW-28-201910	EPA 5030B/8260	618529		
60319115022	DUP-03-201910	EPA 5030B/8260	618529		
60319115022	DUP-03-201910	EPA 5030B/8260	618858		
60319115023	MW-60R-201910	EPA 5030B/8260	618529		
60319115024	MW-196-201910	EPA 5030B/8260	618529		
60319115025	MW-55R-201910	EPA 5030B/8260	618529		
60319115026	DUP-04-2019110	EPA 5030B/8260	618529		
60319115027	TMW-24-2019110	EPA 5030B/8260	618529		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319115027	TMW-24-2019110	EPA 5030B/8260	618858		
60319115028	TMW-23-2019110	EPA 5030B/8260	618529		
60319115029	MW-24-2019110	EPA 5030B/8260	618529		
60319115030	MW-178-201910	EPA 5030B/8260	618530		
60319115031	EB-02-201910	EPA 5030B/8260	618530		
60319115032	EB-03-201910	EPA 5030B/8260	618530		
60319115033	TB-03-201910	EPA 5030B/8260	618530		
60319115034	MW-98-201910	EPA 5030B/8260	618530		
60319115035	TB-04-201910	EPA 5030B/8260	618530		
60319115036	TB-05-201910	EPA 5030B/8260	618530		
60319115037	VP-10-201910	EPA 5030B/8260	618530		
60319115037	VP-10-201910	EPA 5030B/8260	619234		
60319115038	VP-12-201910	EPA 5030B/8260	618530		
60319115039	VP-7-201910	EPA 5030B/8260	618530		
60319115040	VP-8-201910	EPA 5030B/8260	618530		
60319115041	VP-14-201910	EPA 5030B/8260	618530		
60319115042	MW-194-201910	EPA 5030B/8260	618530		
60319115043	MW-61R-201910	EPA 5030B/8260	618530		
60319115044	TMW-26-201910	EPA 5030B/8260	618530		
60319115045	MW-46R-201910	EPA 5030B/8260	618530		
60319115045	MW-46R-201910	EPA 5030B/8260	619234		
60319115046	MW-184-201910	EPA 5030B/8260	618530		
60319115047	MW-183R-201910	EPA 5030B/8260	618530		
60319115048	MW-99-201910	EPA 5030B/8260	618530		
60319115049	I W-77-201910	EPA 5030B/8260	618530		
60319115049	I W-77-201910	EPA 5030B/8260	619489		
60319115050	TMW-12-201910	EPA 5030B/8260	618858		
60319115051	TMW-14-201910	EPA 5030B/8260	618858		
60319115052	MW -50R-201910	EPA 5030B/8260	618858		
60319115053	RW -69-201910	EPA 5030B/8260	618858		
60319115054	ITMW -9-201910	EPA 5030B/8260	618858		
60319115055	MW -87-201910	EPA 5030B/8260	618858		
60319115056	MW -58R-201910	EPA 5030B/8260	618858		
60319115057	MW -38-201910	EPA 5030B/8260	618858		
60319115058	DUP -01-201910	EPA 5030B/8260	618858		
60319115059	DUP -07-201910	EPA 5030B/8260	618858		
60319115060	TMW -16-201910	EPA 5030B/8260	618858		
60319115061	TMW -22R-201910	EPA 5030B/8260	618858		
60319115052	MW -50R-201910	SM 4500-S-2 D	618515		
60319115053	RW -69-201910	SM 4500-S-2 D	618515		
60319115054	ITMW -9-201910	SM 4500-S-2 D	618515		
60319115055	MW -87-201910	SM 4500-S-2 D	618515		
60319115056	MW -58R-201910	SM 4500-S-2 D	618515		
60319115057	MW -38-201910	SM 4500-S-2 D	618515		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319115042	**MW-194-201910**	EPA 300.0	620025		
60319115043	**MW-61R-201910**	EPA 300.0	620025		
60319115044	**TMW-26-201910**	EPA 300.0	620025		
60319115052	**MW -50R-201910**	EPA 300.0	620025		
60319115053	**RW -69-201910**	EPA 300.0	620025		
60319115054	**ITMW -9-201910**	EPA 300.0	620025		
60319115055	**MW -87-201910**	EPA 300.0	620025		
60319115056	**MW -58R-201910**	EPA 300.0	620025		
60319115057	**MW -38-201910**	EPA 300.0	620025		
60319115060	**TMW -16-201910**	EPA 300.0	620025		
60319115061	**TMW -22R-201910**	EPA 300.0	620025		
60319115042	**MW-194-201910**	EPA 353.2	618075		
60319115043	**MW-61R-201910**	EPA 353.2	618075		
60319115044	**TMW-26-201910**	EPA 353.2	618075		
60319115052	**MW -50R-201910**	EPA 353.2	618075		
60319115053	**RW -69-201910**	EPA 353.2	618075		
60319115054	**ITMW -9-201910**	EPA 353.2	618075		
60319115055	**MW -87-201910**	EPA 353.2	618075		
60319115056	**MW -58R-201910**	EPA 353.2	618075		
60319115057	**MW -38-201910**	EPA 353.2	618075		
60319115060	**TMW -16-201910**	EPA 353.2	618075		
60319115061	**TMW -22R-201910**	EPA 353.2	618075		
60319115042	**MW-194-201910**	SM 5310C	618924		
60319115043	**MW-61R-201910**	SM 5310C	618924		
60319115044	**TMW-26-201910**	SM 5310C	619519		
60319115052	**MW -50R-201910**	SM 5310C	618924		
60319115053	**RW -69-201910**	SM 5310C	618924		
60319115054	**ITMW -9-201910**	SM 5310C	618924		
60319115055	**MW -87-201910**	SM 5310C	618924		
60319115056	**MW -58R-201910**	SM 5310C	618924		
60319115057	**MW -38-201910**	SM 5310C	618924		
60319115060	**TMW -16-201910**	SM 5310C	619519		
60319115061	**TMW -22R-201910**	SM 5310C	618924		
60319115042	**MW-194-201910**	SM 5310C	619152		
60319115043	**MW-61R-201910**	SM 5310C	619152		
60319115044	**TMW-26-201910**	SM 5310C	619520		
60319115060	**TMW -16-201910**	SM 5310C	619520		
60319115061	**TMW -22R-201910**	SM 5310C	619520		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- WO# : 60319115 (60319115) or MTJL Log-in 1

ALL LY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: Email:	Site/Facility ID #
Collected by (print):	Purchase Order # / Quote #
Collected by (signature):	Turnaround Date Required:
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Compliance Monitoring? [ ] Yes [ ] No

DW PWS ID #:

DW Location Code #:

Immediately Packed on Ice? [ ] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses: 8260 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	(Y)	N	NA
Custody Signatures Present	(Y)	N	NA
Collector Signature Present	(Y)	N	NA
Bottles Intact	(Y)	N	NA
Correct Bottles	(Y)	N	NA
Sufficient Volume	(Y)	N	NA
Samples received on ice	(Y)	N	NA
VOA - Headspace Acceptable	Y	(N)	NA
USDA Regulated Soils	Y	N	(NA)
Samples in holding time	(Y)	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips: _____			
Sample pH Acceptable	(Y)	N	NA
pH Strips: _____			
Sulfide Present	Y	N	(NA)
Lead Acetate Strips: _____			

(6031 9115)

	Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	LAB USE ONLY Lab Sample # / Comments
1	MW-54R - 201910	GW	G	10/23/19	1129				3	001
2	MW-57R - 201910				1332					002
3	TMW-19 - 201910				1606					003
4	DUP-06 - 201910				1606					004
5	MW-97 - 201910				0915					005
6	MW-96 - 201910				1035					006
7	MW-82 - 201910				1240					007
8	DUP-02 - 201910				1240					008
9	IW-78 - 201910				1405					009
10	ITMW-1R - 201910				1600					010

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [✓] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y (N) N/A

Packing Material Used: Bubble bag Blk

LAB Tracking #: N/A

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [✓] N/A

Samples received via: FEDEX [ ] UPS [ ] Client [✓] Courier [ ] Pace Courier [ ] VIA

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
(see page 1)		E Brackett/Pace	10/24/19 0700
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID#: I-301

Cooler Temp Upon Receipt 1.7, 2.3, 1.3 oC

Cooler Therm Corr. Factor 0.0 oC

Cooler Temp Corrected 1.7, 2.3, 1.3 oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 3 of 10

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 2

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: / Email:	Site/Facility ID #
Collected by (print):	Purchase Order #
Collected by (signature):	Quote # / Turnaround Date Required:
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Compliance Monitoring? [ ] Yes [ ] No

DW PWS ID #:

DW Location Code #:

Immediately Packed on Ice? [ ] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: 8240 VOC Full List	LAB USE ONLY: Lab Sample # / Comments
2. MW-175-201910	GW	G	10/23/19	1145				3	X	011
2. TMW-30-201910				1445						012
2. MW-182-201910				1600						013
MW-29-201910				0910						014
TMW-27-201910				1040						015
ITMW-20-201910				1135						016
DUP-05-201910				1135						017
MW-26-201910				1235						018
MW-84-201910				1455						019
MW-22-201910				1600						020

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60319115

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s)

Page _____

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
(See page 1)		E Brackett / Pace	10/24/19 0200
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 3

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected by (print):	Purchase Order #: DW PWS ID #:
Collected by (signature):	Quote #: DW Location Code #: Turnaround Date Required: Immediately Packed on Ice? [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:_____

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses: 8260 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:_____			
Sample pH Acceptable	Y	N	NA
pH Strips:_____			
Sulfide Present	Y	N	NA
Lead Acetate Strips:_____			

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8260 VOC Full List	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
MW-28-201910	GW	G	10/23/19	1715				3	X	021
DUP-03-201910				1500						022
MW-60R-201910				0940						023
MW-196-201910				1055						024
MW-55R-201910				1215						025
DUP-04-201910				1215						026
TMW-24-201910				1425						027
TMW-25 TA 23-201910				1605						028
MW-24-201910				1720						029
MW-178-201910				1645						030

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

E Brackett / Pace 10/24/19 0200

(see page 1)

MTJL LAB USE ONLY

Table #:_____

ACCT #:_____

Template:_____

Prelogin:_____

PM:_____

PB:_____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #:_____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments:_____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 5 of 10

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: Email:	Site/Facility ID #
Collected by (print):	Purchase Order #
Collected by (signature):	Quote # / Turnaround Date Required:
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Compliance Monitoring? [ ] Yes [ ] No

DW PWS ID #:

DW Location Code #:

Immediately Packed on ice? [ ] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: 8260 VOC Full List	LAB USE ONLY: Lab Sample # / Comments
EB-02-201910	GW	G	10/23/19	1705				3	X	031
EB-03-201910	GW	G	10/23/19	1705						032
TB-03-201910				0730						033
MW-98-201910				0950						034
TB-04-201910				1750						035
TB-05-201910				1755						036

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

60319115

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

(see page 1)

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #:

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments:

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 10 of 10

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurwelier	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: Email:	Site/Facility ID #
Collected by (print): Haley Ahlers	Purchase Order #
Collected by (signature): Haley Ahlers	Quote #
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	Turnaround Date Required: Std
	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)
	Compliance Monitoring? [ ] Yes [ ] No
	DW PWS ID #:
	DW Location Code #:
	Immediately Packed on Ice? [ ] Yes [ ] No
	Field Filtered (if applicable): [ ] Yes [X] No
	Analysis: _____

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: 8240 VOC Full List	LAB USE ONLY: Lab Sample # / Comments
VP-10 - 201910	GW	G	10/23/19	1000				3	X	037
VP-12 - 201910	↓	↓	↓	1015				↓	↓	038
VP-7 - 201910				1050						039
VP-8 - 201910				1110						040
VP-14 - 201910	↓	↓	↓	1235				↓	↓	041

N/A

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60319155

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page _____ of _____

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Haley Ahlers / Ramboll	10/23/19 1800		
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: Email:	Site/Facility ID #
Collected by (print):	Purchase Order #
	Quote #
Collected by (signature):	Turnaround Date Required:
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Compliance Monitoring? [ ] Yes [ ] No

DW PWS ID #:

DW Location Code #:

Immediately Packed on Ice? [ ] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3 D 7 U 2 U O

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other BAK

Analyses: 8260 VOC Full List; Methane, Ethane, Ethene (RSK-MEE); Metals, Total Iron; Sulfate, Nitrate, Chloride; Total Organic Carbon; Dissolved Organic Carbon; Volatile Fatty Acids (VFA)

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60319115

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
MW-194-201910	GW	G	10/23/19	1040				12	042
MW-61R-201910				0910					043
TMW-26-201910				1700					044
MW-46R-201910				1500				3	045
MW-184-201910				1340					046
MW-183R-201910				1102					047
MW-99-201910				1235					048
IW-77-201910				1610					049
TMW-12-201910				0930					050
TMW-14-201910				1100					051

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

Relinquished by/Company : (Signature) (see page 1)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 2 of 2

Page 19 of 194

F-ALL-C-010-rev.00, 05Jul2018

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-In Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address: 6400 Jenny Lind Rd, Fort Smith
Customer Project Name/Number:	State: AR County/City: Sebastian Time Zone Collected: PT MT (CT) ET
Phone: Email: nzurweller@ramboll.com	Site/Facility ID #: — Compliance Monitoring? [ ] Yes [ ] No
Collected by (print): JO Pavlowsky	Purchase Order #: — DW PWS ID #: —
Collected by (signature): JO Pavlowsky	Quote #: — DW Location Code #: —
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold	Turnaround Date Required: Std — Immediately Packed on Ice? [X] Yes [ ] No
	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply) — Field Filtered (if applicable): [ ] Yes [X] No — Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3 D D 1 U U 2 U O 4&5 U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other Benzyl Alkonium chloride

Lab Project Manager:

Analyses

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	8260 VOC Full List	Methane, Ethane, Ethene (MEE)	Methane, Ethane, Ethene, Acetylene (MEEA)	Metals, Total Iron	Sulfate, Nitrate	Sulfate, Nitrate, Chloride	Total Organic Carbon	Dissolved Organic Carbon	Volatile Fatty Acids (VFA)	Sulfide	Hydrogen	LAB USE ONLY: Lab Sample # / Comments
MW-50R-201910	GW	G	10/23/19	0935				11	X		X	X	X		X			X	X	052
RW-69-201910				1125																053
ITMW-9-201910				1305																054
MW-87-201910				1310																055
MW-58R-201910				1515																056
MW-38-201910				1700																057
DUP-01-201910				1515				3												058
DUP-07-201910				1305				3												059
TMW-16-201910				1515				12		X		X		X	X	X	X			060
TMW-22R-201910				1230																061

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

60319115

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier []

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
JO Pavlowsky / REH	10/23/19 @ 1800		
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #:

Cooler Temp Upon Receipt oC

Cooler Therm Corr. Factor oC

Cooler Temp Corrected oC

Comments:

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 1 of 10

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 8, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60319115 WHIRLPOOL**
Pace Workorder: 31904

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, October 25, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/08/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 29

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31904 60319115 WHIRLPOOL

Lab ID	Sample ID	Matrix	Date Collected	Date Received
319040001	MW-194-201910	Water	10/23/2019 10:40	10/25/2019 09:50
319040002	MW-61R-201910	Water	10/23/2019 09:10	10/25/2019 09:50
319040003	TMW-26-201910	Water	10/23/2019 17:00	10/25/2019 09:50
319040004	MW-50R-201910	Water	10/23/2019 09:35	10/25/2019 09:50
319040005	RW-69-201910	Water	10/23/2019 11:25	10/25/2019 09:50
319040006	ITMW-9-201910	Water	10/23/2019 13:05	10/25/2019 09:50
319040007	MW-87-201910	Water	10/23/2019 13:10	10/25/2019 09:50
319040008	MW-58R-201910	Water	10/23/2019 15:15	10/25/2019 09:50
319040009	MW-38-201910	Water	10/23/2019 17:00	10/25/2019 09:50
319040010	TMW-16-201910	Water	10/23/2019 15:15	10/25/2019 09:50
319040011	TMW-22R-201910	Water	10/23/2019 12:30	10/25/2019 09:50
319040012	MW-50R-201910	Bubble Strip	10/23/2019 09:35	10/25/2019 09:50
319040013	RW-69-201910	Bubble Strip	10/23/2019 11:25	10/25/2019 09:50
319040014	ITMW-9-201910	Bubble Strip	10/23/2019 13:05	10/25/2019 09:50
319040015	MW-87-201910	Bubble Strip	10/23/2019 13:10	10/25/2019 09:50
319040016	MW-58R-201910	Bubble Strip	10/23/2019 15:15	10/25/2019 09:50
319040017	MW-38-201910	Bubble Strip	10/23/2019 17:00	10/25/2019 09:50

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31904 60319115 WHIRLPOOL

Workorder Comments

The container pH for samples 31904 (0001-0011) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040001** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-194-201910** Date Collected: 10/23/2019 10:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**9200**	ug/l	0.50	0.046	1	11/5/2019 08:10	BW	n
Ethane	**0.24**	ug/l	0.10	0.0050	1	11/5/2019 08:10	BW	n
Ethene	**0.12**	ug/l	0.10	0.0040	1	11/5/2019 08:10	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040002** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-61R-201910** Date Collected: 10/23/2019 09:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**3400**	ug/l	0.50	0.046	1	11/5/2019 08:24	BW	n
Ethane	**<0.10**	ug/l	0.10	0.0050	1	11/5/2019 08:24	BW	n
Ethene	**<0.10**	ug/l	0.10	0.0040	1	11/5/2019 08:24	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040003** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-26-201910** Date Collected: 10/23/2019 17:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**13000**	ug/l	0.50	0.046	1	11/5/2019 08:38	BW	n
Ethane	**<0.10**	ug/l	0.10	0.0050	1	11/5/2019 08:38	BW	n
Ethene	**1.3**	ug/l	0.10	0.0040	1	11/5/2019 08:38	BW	n

nelac ACCREDITED IN ACCORDANCE WITH

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040004** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-50R-201910** Date Collected: 10/23/2019 09:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**310**	ug/l	0.50	0.046	1	11/5/2019 08:52	BW	n
Ethane	**0.18**	ug/l	0.10	0.0050	1	11/5/2019 08:52	BW	n
Ethene	**<0.10**	ug/l	0.10	0.0040	1	11/5/2019 08:52	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	11/5/2019 08:52	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040005** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **RW-69-201910** Date Collected: 10/23/2019 11:25

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**68**	ug/l	0.50	0.046	1	11/5/2019 09:07	BW	n
Ethane	**<0.10**	ug/l	0.10	0.0050	1	11/5/2019 09:07	BW	n
Ethene	**0.22**	ug/l	0.10	0.0040	1	11/5/2019 09:07	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	11/5/2019 09:07	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040006** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **ITMW-9-201910** Date Collected: 10/23/2019 13:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**29**	ug/l	0.50	0.046	1	11/5/2019 09:20	BW	n
Ethane	**<0.10**	ug/l	0.10	0.0050	1	11/5/2019 09:20	BW	n
Ethene	**<0.10**	ug/l	0.10	0.0040	1	11/5/2019 09:20	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	11/5/2019 09:20	BW	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040007** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-87-201910** Date Collected: 10/23/2019 13:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**0.59**	ug/l	0.50	0.046	1	11/5/2019 09:32	BW	n
Ethane	**<0.10**	ug/l	0.10	0.0050	1	11/5/2019 09:32	BW	n
Ethene	**<0.10**	ug/l	0.10	0.0040	1	11/5/2019 09:32	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	11/5/2019 09:32	BW	n

nelac ACCREDITED IN ACCORDANCE WITH

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040008** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-58R-201910** Date Collected: 10/23/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**49**	ug/l	0.50	0.046	1	11/5/2019 09:47	BW	n
Ethane	**<0.10**	ug/l	0.10	0.0050	1	11/5/2019 09:47	BW	n
Ethene	**0.36**	ug/l	0.10	0.0040	1	11/5/2019 09:47	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	11/5/2019 09:47	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040009** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-38-201910** Date Collected: 10/23/2019 17:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**18**	ug/l	0.50	0.046	1	11/5/2019 09:59	BW	n
Ethane	**0.58**	ug/l	0.10	0.0050	1	11/5/2019 09:59	BW	n
Ethene	**21**	ug/l	0.10	0.0040	1	11/5/2019 09:59	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	11/5/2019 09:59	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040010** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-16-201910** Date Collected: 10/23/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**24000**	ug/l	0.50	0.046	1	11/5/2019 10:12	BW	n
Ethane	**0.42**	ug/l	0.10	0.0050	1	11/5/2019 10:12	BW	n
Ethene	**5.1**	ug/l	0.10	0.0040	1	11/5/2019 10:12	BW	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040011** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-22R-201910** Date Collected: 10/23/2019 12:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**7800**	ug/l	0.50	0.046	1	11/5/2019 10:26	BW	n
Ethane	**2.1**	ug/l	0.10	0.0050	1	11/5/2019 10:26	BW	n
Ethene	**4.1**	ug/l	0.10	0.0040	1	11/5/2019 10:26	BW	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040012** Date Received: 10/25/2019 09:50 Matrix: Bubble Strip

Sample ID: **MW-50R-201910** Date Collected: 10/23/2019 09:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**1.5**	nM	1.0	0.75	1	10/30/2019 12:39	TD	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040013** Date Received: 10/25/2019 09:50 Matrix: Bubble Strip

Sample ID: **RW-69-201910** Date Collected: 10/23/2019 11:25

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**1.0**	nM	1.0	0.75	1	10/30/2019 12:52	TD	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040014** Date Received: 10/25/2019 09:50 Matrix: Bubble Strip

Sample ID: **ITMW-9-201910** Date Collected: 10/23/2019 13:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**11**	nM	1.0	0.75	1	10/30/2019 13:04	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040015** Date Received: 10/25/2019 09:50 Matrix: Bubble Strip

Sample ID: **MW-87-201910** Date Collected: 10/23/2019 13:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**1.1**	nM	1.0	0.75	1	10/30/2019 13:17	TD	n

nelac ACCREDITED IN ACCORDANCE WITH

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040016** Date Received: 10/25/2019 09:50 Matrix: Bubble Strip

Sample ID: **MW-58R-201910** Date Collected: 10/23/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**<1.0**	nM	1.0	0.75	1	10/30/2019 13:29	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040017** Date Received: 10/25/2019 09:50 Matrix: Bubble Strip

Sample ID: **MW-38-201910** Date Collected: 10/23/2019 17:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**1.2**	nM	1.0	0.75	1	10/30/2019 13:46	TD	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31904 60319115 WHIRLPOOL

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31904 60319115 WHIRLPOOL

QC Batch: DISG/7882 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319040012, 319040013, 319040014, 319040015, 319040016, 319040017

METHOD BLANK: 64051

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Hydrogen	nM	<1.0	1.0	n

LABORATORY CONTROL SAMPLE & LCSD: 64052 64053

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Hydrogen	nM	24	24	24	101	99	80-120	1.4	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31904 60319115 WHIRLPOOL

QC Batch: DISG/7896 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319040001, 319040002, 319040003, 319040004, 319040005, 319040006, 319040007, 319040008, 319040009, 319040010, 319040011

METHOD BLANK: 64168

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n
Acetylene	ug/l	<0.50	0.50	n

LABORATORY CONTROL SAMPLE & LCSD: 64169 64170

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	760	750	101	100	80-120	0.97	20	n
Ethane	ug/l	38	40	39	105	102	80-120	2.2	20	n
Ethene	ug/l	35	38	36	108	104	80-120	4	20	n
Acetylene	ug/l	33	38	34	115	105	80-120	8.9	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 31904 60319115 WHIRLPOOL

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31904 60319115 WHIRLPOOL

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
319040012	MW-50R-201910			AM20GAX	DISG/7882
319040013	RW-69-201910			AM20GAX	DISG/7882
319040014	ITMW-9-201910			AM20GAX	DISG/7882
319040015	MW-87-201910			AM20GAX	DISG/7882
319040016	MW-58R-201910			AM20GAX	DISG/7882
319040017	MW-38-201910			AM20GAX	DISG/7882
319040001	MW-194-201910			AM20GAX	DISG/7896
319040002	MW-61R-201910			AM20GAX	DISG/7896
319040003	TMW-26-201910			AM20GAX	DISG/7896
319040004	MW-50R-201910			AM20GAX	DISG/7896
319040005	RW-69-201910			AM20GAX	DISG/7896
319040006	ITMW-9-201910			AM20GAX	DISG/7896
319040007	MW-87-201910			AM20GAX	DISG/7896
319040008	MW-58R-201910			AM20GAX	DISG/7896
319040009	MW-38-201910			AM20GAX	DISG/7896
319040010	TMW-16-201910			AM20GAX	DISG/7896
319040011	TMW-22R-201910			AM20GAX	DISG/7896

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Chain of Custody

PASI Kansas Laboratory

31904

Pace Analytical®
www.pacelabs.com

Workorder: 60319115 **Workorder Name:** WHIRLPOOL FORT SMITH, AR **Results Requested By:** 11/5/2019

Report / Invoice To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy P.O. SUB-10251

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Preserved Containers: Unpreserved	Requested Analysis: M/E/E +Acetylene/Hydrogen	Requested Analysis: M/E/E	LAB USE ONLY
1	MW-194-201910	10/23/2019 10:40	60319115042	Water	3			X	
2	MW-61R-201910	10/23/2019 09:10	60319115043	Water	3			X	
3	TMW-26-201910	10/23/2019 17:00	60319115044	Water	3			X	
4	MW-50R-201910	10/23/2019 09:35	60319115052	Water	4		X		
5	RW-69-201910	10/23/2019 11:25	60319115053	Water	4		X		
6	ITMW-9-201910	10/23/2019 13:05	60319115054	Water	4		X		
7	MW-87-201910	10/23/2019 13:10	60319115055	Water	4		X		
8	MW-58R-201910	10/23/2019 15:15	60319115056	Water	4		X		
9	MW-38-201910	10/23/2019 17:00	60319115057	Water	4		X		
10	TMW-16-201910	10/23/2019 15:15	60319115060	Water	3			X	
11	TMW-22R-201910	10/23/2019 12:30	60319115061	Water	3			X	
12									
13									
14									
15									

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Holly Faulk PASI	10/24/19 1300	Lori PASI	10.25	Sent 3 x 40mL TSP vials and 22cc vapor vial
2				0950	
3					

Cooler Temperature on Receipt 1 °C	Custody Seal Y or N	Received on Ice Y or N	Samples Intact Y or N

Cooler Receipt Form

Client Name: PaCe **Project:** 603 19115 **Lab Work Order:** 31904

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ **Air bill Present:** (Yes) No

Tracking Number: 121924813213

Custody Seal on Cooler/Box Present: Yes (No) **Seals Intact:** Yes No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None **Ice Intact:** (Yes) Melted

Cooler Temperature: 1°C **Radiation Screened:** Yes (No) **Chain of Custody Present:** (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?		✓		

Comments:_____

_____

Cooler contents examined/received by : LJ **Date:** 10.25.19

Project Manager Review : EBJ **Date:** 10/25/19

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 6, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60319115 WHIRLPOOL**
Pace Workorder: 31905

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, October 25, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/06/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 16

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31905 60319115 WHIRLPOOL

Lab ID	Sample ID	Matrix	Date Collected	Date Received
319050001	MW-194-201910	Water	10/23/2019 10:40	10/25/2019 09:50
319050002	MW-61R-201910	Water	10/23/2019 09:10	10/25/2019 09:50
319050003	TMW-26-201910	Water	10/23/2019 17:00	10/25/2019 09:50
319050004	TMW-16-201910	Water	10/23/2019 15:15	10/25/2019 09:50
319050005	TMW-22R-201910	Water	10/23/2019 12:30	10/25/2019 09:50

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31905 60319115 WHIRLPOOL

Sample Comments

Lab ID: 319050004 **Sample ID:** TMW-16-201910 **Sample Type:** N

The analysis for volatile fatty acids, method AM23G, was reported at dilution for sample due to the measured chloride concentration within the sample; matrix interfering compound.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31905 60319115 WHIRLPOOL

Lab ID: **319050001** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-194-201910** Date Collected: 10/23/2019 10:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	10/31/2019 11:29	KB	
Acetic Acid	**1.8**	mg/l	0.10	0.028	1	10/31/2019 11:29	KB	
Propionic Acid	**0.26**	mg/l	0.10	0.0040	1	10/31/2019 11:29	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	10/31/2019 11:29	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	10/31/2019 11:29	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	10/31/2019 11:29	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 11:29	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	10/31/2019 11:29	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 11:29	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	10/31/2019 11:29	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31905 60319115 WHIRLPOOL

Lab ID: **319050002** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-61R-201910** Date Collected: 10/23/2019 09:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	10/31/2019 12:23	KB	
Acetic Acid	**0.34**	mg/l	0.10	0.028	1	10/31/2019 12:23	KB	
Propionic Acid	**0.22**	mg/l	0.10	0.0040	1	10/31/2019 12:23	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	10/31/2019 12:23	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	10/31/2019 12:23	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	10/31/2019 12:23	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 12:23	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	10/31/2019 12:23	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 12:23	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	10/31/2019 12:23	KB	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31905 60319115 WHIRLPOOL

Lab ID: **319050003** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-26-201910** Date Collected: 10/23/2019 17:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<2.0**	mg/l	2.0	0.43	10	11/2/2019 05:27	KB	d
Acetic Acid	**16**	mg/l	1.0	0.28	10	11/2/2019 05:27	KB	d
Propionic Acid	**110**	mg/l	10	0.40	100	11/2/2019 06:20	KB	d
Formic Acid	**<5.0**	mg/l	5.0	0.86	10	11/2/2019 05:27	KB	d,B
Butyric Acid	**2.7**	mg/l	1.0	0.11	10	11/2/2019 05:27	KB	d
Pyruvic Acid	**0.81**	mg/l	0.10	0.0050	1	10/31/2019 13:16	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 13:16	KB	
Pentanoic Acid	**6.4**	mg/l	0.10	0.0070	1	10/31/2019 13:16	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 13:16	KB	
Hexanoic Acid	**0.36**	mg/l	0.20	0.010	1	10/31/2019 13:16	KB	

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31905 60319115 WHIRLPOOL

Lab ID: **319050004** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-16-201910** Date Collected: 10/23/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<2.0**	mg/l	2.0	0.43	10	10/31/2019 14:09	KB	d
Acetic Acid	**60**	mg/l	10	2.8	100	11/2/2019 07:14	KB	d
Propionic Acid	**560**	mg/l	10	0.40	100	11/2/2019 07:14	KB	d
Formic Acid	**6.7**	mg/l	5.0	0.86	10	10/31/2019 14:09	KB	d
Butyric Acid	**28**	mg/l	1.0	0.11	10	10/31/2019 14:09	KB	d
Pyruvic Acid	**3.1**	mg/l	1.0	0.050	10	10/31/2019 14:09	KB	d
i-Pentanoic Acid	**1.7**	mg/l	1.0	0.060	10	10/31/2019 14:09	KB	d
Pentanoic Acid	**29**	mg/l	1.0	0.070	10	10/31/2019 14:09	KB	d
i-Hexanoic Acid	**<2.0**	mg/l	2.0	0.29	10	10/31/2019 14:09	KB	d
Hexanoic Acid	**<2.0**	mg/l	2.0	0.10	10	10/31/2019 14:09	KB	d

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31905 60319115 WHIRLPOOL

Lab ID: **319050005** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-22R-201910** Date Collected: 10/23/2019 12:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	10/31/2019 15:03	KB	
Acetic Acid	**0.18**	mg/l	0.10	0.028	1	10/31/2019 15:03	KB	
Propionic Acid	**0.10**	mg/l	0.10	0.0040	1	10/31/2019 15:03	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	10/31/2019 15:03	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	10/31/2019 15:03	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	10/31/2019 15:03	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 15:03	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	10/31/2019 15:03	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 15:03	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	10/31/2019 15:03	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31905 60319115 WHIRLPOOL

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
B	The analyte was detected in the associated blank.
d	The analyte concentration was determined from a dilution.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31905 60319115 WHIRLPOOL

QC Batch: EDON/4247 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 319050001, 319050002, 319050003, 319050004, 319050005

METHOD BLANK: 64054

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	
Formic Acid	mg/l	<0.50	0.50	
Butyric Acid	mg/l	<0.10	0.10	
Pyruvic Acid	mg/l	<0.10	0.10	
i-Pentanoic Acid	mg/l	<0.10	0.10	
Pentanoic Acid	mg/l	<0.10	0.10	
i-Hexanoic Acid	mg/l	<0.20	0.20	
Hexanoic Acid	mg/l	<0.20	0.20	

LABORATORY CONTROL SAMPLE: 64055

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	1.9	97	70-130	
Acetic Acid	mg/l	2	1.9	93	70-130	
Propionic Acid	mg/l	2	1.9	97	70-130	
Formic Acid	mg/l	2	2.2	112	70-130	
Butyric Acid	mg/l	2	2.0	100	70-130	
Pyruvic Acid	mg/l	2	1.8	90	70-130	
i-Pentanoic Acid	mg/l	2	2.0	98	70-130	
Pentanoic Acid	mg/l	2	1.9	97	70-130	
i-Hexanoic Acid	mg/l	2	2.0	99	70-130	
Hexanoic Acid	mg/l	2	1.8	92	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64056 64057 Original: 319080001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
EDonors											
Lactic Acid	mg/l	0.032	2	1.8	1.9	90	92	70-130	1.9	30	
Acetic Acid	mg/l	0.032	2	2.0	1.9	96	95	70-130	1.1	30	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31905 60319115 WHIRLPOOL

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64056 64057 Original: 319080001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Propionic Acid	mg/l	0.0053	2	2.0	1.9	98	97	70-130	1.3	30	
Formic Acid	mg/l	0.085	2	2.3	2.0	110	97	70-130	12	30	
Butyric Acid	mg/l	0.0049	2	2.0	2.0	100	98	70-130	1.7	30	
Pyruvic Acid	mg/l	0	2	1.7	1.7	87	87	70-130	0.46	30	
i-Pentanoic Acid	mg/l	0	2	2.0	2.0	100	98	70-130	2.5	30	
Pentanoic Acid	mg/l	0.036	2	2.0	1.9	98	95	70-130	3.6	30	
i-Hexanoic Acid	mg/l	0	2	2.1	2.0	105	98	70-130	6.9	30	
Hexanoic Acid	mg/l	0.0024	2	1.9	1.8	96	90	70-130	6.5	30	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31905 60319115 WHIRLPOOL

QC Batch: EDON/4257 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 319050003, 319050004

METHOD BLANK: 64154

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	
Formic Acid	mg/l	<0.50	0.50	B
Butyric Acid	mg/l	<0.10	0.10	

LABORATORY CONTROL SAMPLE: 64155

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	2.0	98	70-130	
Acetic Acid	mg/l	2	1.9	97	70-130	
Propionic Acid	mg/l	2	2.0	99	70-130	
Formic Acid	mg/l	2	2.3	117	70-130	B
Butyric Acid	mg/l	2	2.0	100	70-130	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31905 60319115 WHIRLPOOL

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
319050001	MW-194-201910			AM23G	EDON/4247
319050002	MW-61R-201910			AM23G	EDON/4247
319050003	TMW-26-201910			AM23G	EDON/4247
319050004	TMW-16-201910			AM23G	EDON/4247
319050005	TMW-22R-201910			AM23G	EDON/4247
319050003	TMW-26-201910			AM23G	EDON/4257
319050004	TMW-16-201910			AM23G	EDON/4257

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Chain of Custody

PASI Kansas Laboratory

31905

Pace Analytical®
www.pacelabs.com

Workorder: 60319115 **Workorder Name:** WHIRLPOOL FORT SMITH, AR **Results Requested By:** 11/5/2019

Report / Invoice To	Subcontract To	
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy	P.O. SUB-10250

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Requested Analysis: Volatile Fatty Acids	LAB USE ONLY
1	MW-194-201910	10/23/2019 10:40	60319115042	Water	2	X	
2	MW-61R-201910	10/23/2019 09:10	60319115043	Water	2	X	
3	TMW-26-201910	10/23/2019 17:00	60319115044	Water	2	X	
4	TMW -16-201910	10/23/2019 15:15	60319115060	Water	2	X	
5	TMW -22R-201910	10/23/2019 12:30	60319115061	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	Holly Fowler pasi	~~10/24~~ 10/24 HF 10/24/19 1800	Lor PAS	10.25
2				0950
3				

Comments

Send 2 x 40mL BAK vials

Cooler Temperature on Receipt 1 °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

Cooler Receipt Form

Client Name: Pace **Project:** 60319115 **Lab Work Order:** 31905

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ **Air bill Present:** (Yes) No

Tracking Number: 1219 2981 3213

Custody Seal on Cooler/Box Present: Yes (No) **Seals Intact:** Yes No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None **Ice Intact:** (Yes) Melted

Cooler Temperature: 1°C **Radiation Screened:** Yes (No) **Chain of Custody Present:** (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?			✓	

Comments:_____

_____

Cooler contents examined/received by : LG **Date:** 10.25.19

Project Manager Review : ERJ **Date:** 10/25/19

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 8, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60319115 WHIRLPOOL**
Pace Workorder: 31904

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, October 25, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/08/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 29

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31904 60319115 WHIRLPOOL

Lab ID	Sample ID	Matrix	Date Collected	Date Received
319040001	MW-194-201910	Water	10/23/2019 10:40	10/25/2019 09:50
319040002	MW-61R-201910	Water	10/23/2019 09:10	10/25/2019 09:50
319040003	TMW-26-201910	Water	10/23/2019 17:00	10/25/2019 09:50
319040004	MW-50R-201910	Water	10/23/2019 09:35	10/25/2019 09:50
319040005	RW-69-201910	Water	10/23/2019 11:25	10/25/2019 09:50
319040006	ITMW-9-201910	Water	10/23/2019 13:05	10/25/2019 09:50
319040007	MW-87-201910	Water	10/23/2019 13:10	10/25/2019 09:50
319040008	MW-58R-201910	Water	10/23/2019 15:15	10/25/2019 09:50
319040009	MW-38-201910	Water	10/23/2019 17:00	10/25/2019 09:50
319040010	TMW-16-201910	Water	10/23/2019 15:15	10/25/2019 09:50
319040011	TMW-22R-201910	Water	10/23/2019 12:30	10/25/2019 09:50
319040012	MW-50R-201910	Bubble Strip	10/23/2019 09:35	10/25/2019 09:50
319040013	RW-69-201910	Bubble Strip	10/23/2019 11:25	10/25/2019 09:50
319040014	ITMW-9-201910	Bubble Strip	10/23/2019 13:05	10/25/2019 09:50
319040015	MW-87-201910	Bubble Strip	10/23/2019 13:10	10/25/2019 09:50
319040016	MW-58R-201910	Bubble Strip	10/23/2019 15:15	10/25/2019 09:50
319040017	MW-38-201910	Bubble Strip	10/23/2019 17:00	10/25/2019 09:50

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31904 60319115 WHIRLPOOL

Workorder Comments

The container pH for samples 31904 (0001-0011) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040001** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-194-201910** Date Collected: 10/23/2019 10:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**9200**	ug/l	0.50	0.046	1	11/5/2019 08:10	BW	n
Ethane	**0.24**	ug/l	0.10	0.0050	1	11/5/2019 08:10	BW	n
Ethene	**0.12**	ug/l	0.10	0.0040	1	11/5/2019 08:10	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040002** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-61R-201910** Date Collected: 10/23/2019 09:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**3400**	ug/l	0.50	0.046	1	11/5/2019 08:24	BW	n
Ethane	**<0.10**	ug/l	0.10	0.0050	1	11/5/2019 08:24	BW	n
Ethene	**<0.10**	ug/l	0.10	0.0040	1	11/5/2019 08:24	BW	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040003** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-26-201910** Date Collected: 10/23/2019 17:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**13000**	ug/l	0.50	0.046	1	11/5/2019 08:38	BW	n
Ethane	**<0.10**	ug/l	0.10	0.0050	1	11/5/2019 08:38	BW	n
Ethene	**1.3**	ug/l	0.10	0.0040	1	11/5/2019 08:38	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040004** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-50R-201910** Date Collected: 10/23/2019 09:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**310**	ug/l	0.50	0.046	1	11/5/2019 08:52	BW	n
Ethane	**0.18**	ug/l	0.10	0.0050	1	11/5/2019 08:52	BW	n
Ethene	**<0.10**	ug/l	0.10	0.0040	1	11/5/2019 08:52	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	11/5/2019 08:52	BW	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040005** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **RW-69-201910** Date Collected: 10/23/2019 11:25

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**68**	ug/l	0.50	0.046	1	11/5/2019 09:07	BW	n
Ethane	**<0.10**	ug/l	0.10	0.0050	1	11/5/2019 09:07	BW	n
Ethene	**0.22**	ug/l	0.10	0.0040	1	11/5/2019 09:07	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	11/5/2019 09:07	BW	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040006** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **ITMW-9-201910** Date Collected: 10/23/2019 13:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**29**	ug/l	0.50	0.046	1	11/5/2019 09:20	BW	n
Ethane	**<0.10**	ug/l	0.10	0.0050	1	11/5/2019 09:20	BW	n
Ethene	**<0.10**	ug/l	0.10	0.0040	1	11/5/2019 09:20	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	11/5/2019 09:20	BW	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040007** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-87-201910** Date Collected: 10/23/2019 13:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**0.59**	ug/l	0.50	0.046	1	11/5/2019 09:32	BW	n
Ethane	**<0.10**	ug/l	0.10	0.0050	1	11/5/2019 09:32	BW	n
Ethene	**<0.10**	ug/l	0.10	0.0040	1	11/5/2019 09:32	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	11/5/2019 09:32	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040008** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-58R-201910** Date Collected: 10/23/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**49**	ug/l	0.50	0.046	1	11/5/2019 09:47	BW	n
Ethane	**<0.10**	ug/l	0.10	0.0050	1	11/5/2019 09:47	BW	n
Ethene	**0.36**	ug/l	0.10	0.0040	1	11/5/2019 09:47	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	11/5/2019 09:47	BW	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040009** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-38-201910** Date Collected: 10/23/2019 17:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**18**	ug/l	0.50	0.046	1	11/5/2019 09:59	BW	n
Ethane	**0.58**	ug/l	0.10	0.0050	1	11/5/2019 09:59	BW	n
Ethene	**21**	ug/l	0.10	0.0040	1	11/5/2019 09:59	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	11/5/2019 09:59	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040010** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-16-201910** Date Collected: 10/23/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**24000**	ug/l	0.50	0.046	1	11/5/2019 10:12	BW	n
Ethane	**0.42**	ug/l	0.10	0.0050	1	11/5/2019 10:12	BW	n
Ethene	**5.1**	ug/l	0.10	0.0040	1	11/5/2019 10:12	BW	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040011** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-22R-201910** Date Collected: 10/23/2019 12:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**7800**	ug/l	0.50	0.046	1	11/5/2019 10:26	BW	n
Ethane	**2.1**	ug/l	0.10	0.0050	1	11/5/2019 10:26	BW	n
Ethene	**4.1**	ug/l	0.10	0.0040	1	11/5/2019 10:26	BW	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040012** Date Received: 10/25/2019 09:50 Matrix: Bubble Strip

Sample ID: **MW-50R-201910** Date Collected: 10/23/2019 09:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**1.5**	nM	1.0	0.75	1	10/30/2019 12:39	TD	n

nelac ACCREDITED IN ACCORDANCE WITH

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040013** Date Received: 10/25/2019 09:50 Matrix: Bubble Strip

Sample ID: **RW-69-201910** Date Collected: 10/23/2019 11:25

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**1.0**	nM	1.0	0.75	1	10/30/2019 12:52	TD	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040014** Date Received: 10/25/2019 09:50 Matrix: Bubble Strip

Sample ID: **ITMW-9-201910** Date Collected: 10/23/2019 13:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**11**	nM	1.0	0.75	1	10/30/2019 13:04	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040015** Date Received: 10/25/2019 09:50 Matrix: Bubble Strip

Sample ID: **MW-87-201910** Date Collected: 10/23/2019 13:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**1.1**	nM	1.0	0.75	1	10/30/2019 13:17	TD	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040016** Date Received: 10/25/2019 09:50 Matrix: Bubble Strip

Sample ID: **MW-58R-201910** Date Collected: 10/23/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**<1.0**	nM	1.0	0.75	1	10/30/2019 13:29	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040017** Date Received: 10/25/2019 09:50 Matrix: Bubble Strip

Sample ID: **MW-38-201910** Date Collected: 10/23/2019 17:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**1.2**	nM	1.0	0.75	1	10/30/2019 13:46	TD	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31904 60319115 WHIRLPOOL

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31904 60319115 WHIRLPOOL

QC Batch: DISG/7882 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319040012, 319040013, 319040014, 319040015, 319040016, 319040017

METHOD BLANK: 64051

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Hydrogen	nM	<1.0	1.0	n

LABORATORY CONTROL SAMPLE & LCSD: 64052 64053

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Hydrogen	nM	24	24	24	101	99	80-120	1.4	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31904 60319115 WHIRLPOOL

QC Batch: DISG/7896 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319040001, 319040002, 319040003, 319040004, 319040005, 319040006, 319040007, 319040008, 319040009, 319040010, 319040011

METHOD BLANK: 64168

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n
Acetylene	ug/l	<0.50	0.50	n

LABORATORY CONTROL SAMPLE & LCSD: 64169 64170

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	760	750	101	100	80-120	0.97	20	n
Ethane	ug/l	38	40	39	105	102	80-120	2.2	20	n
Ethene	ug/l	35	38	36	108	104	80-120	4	20	n
Acetylene	ug/l	33	38	34	115	105	80-120	8.9	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 31904 60319115 WHIRLPOOL

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31904 60319115 WHIRLPOOL

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
319040012	MW-50R-201910			AM20GAX	DISG/7882
319040013	RW-69-201910			AM20GAX	DISG/7882
319040014	ITMW-9-201910			AM20GAX	DISG/7882
319040015	MW-87-201910			AM20GAX	DISG/7882
319040016	MW-58R-201910			AM20GAX	DISG/7882
319040017	MW-38-201910			AM20GAX	DISG/7882
319040001	MW-194-201910			AM20GAX	DISG/7896
319040002	MW-61R-201910			AM20GAX	DISG/7896
319040003	TMW-26-201910			AM20GAX	DISG/7896
319040004	MW-50R-201910			AM20GAX	DISG/7896
319040005	RW-69-201910			AM20GAX	DISG/7896
319040006	ITMW-9-201910			AM20GAX	DISG/7896
319040007	MW-87-201910			AM20GAX	DISG/7896
319040008	MW-58R-201910			AM20GAX	DISG/7896
319040009	MW-38-201910			AM20GAX	DISG/7896
319040010	TMW-16-201910			AM20GAX	DISG/7896
319040011	TMW-22R-201910			AM20GAX	DISG/7896

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Chain of Custody

PASI Kansas Laboratory

31904

Pace Analytical®
www.pacelabs.com

Workorder: 60319115 **Workorder Name:** WHIRLPOOL FORT SMITH, AR **Results Requested By:** 11/5/2019

Report / Invoice To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy P.O. SUB-10251

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Preserved Containers: Unpreserved	Requested Analysis: M/E/E + Acetylene/Hydrogen	Requested Analysis: M/E/E	LAB USE ONLY
1	MW-194-201910	10/23/2019 10:40	60319115042	Water	3			X	
2	MW-61R-201910	10/23/2019 09:10	60319115043	Water	3			X	
3	TMW-26-201910	10/23/2019 17:00	60319115044	Water	3			X	
4	MW-50R-201910	10/23/2019 09:35	60319115052	Water	4		X		
5	RW-69-201910	10/23/2019 11:25	60319115053	Water	4		X		
6	ITMW-9-201910	10/23/2019 13:05	60319115054	Water	4		X		
7	MW-87-201910	10/23/2019 13:10	60319115055	Water	4		X		
8	MW-58R-201910	10/23/2019 15:15	60319115056	Water	4		X		
9	MW-38-201910	10/23/2019 17:00	60319115057	Water	4		X		
10	TMW-16-201910	10/23/2019 15:15	60319115060	Water	3			X	
11	TMW-22R-201910	10/23/2019 12:30	60319115061	Water	3			X	
12									
13									
14									
15									

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Holly Fowler pasi	10/24/19 1800	[illegible] PAES	10.25	Sent 3 x 40mL TSP vials and 22cc vapor vial
2				0950	
3					

Cooler Temperature on Receipt 1 °C	Custody Seal Y or N	Received on Ice Y or N	Samples Intact Y or N

Cooler Receipt Form

Client Name: Pace **Project:** 603 19115 **Lab Work Order:** 31904

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ **Air bill Present:** (Yes) No

Tracking Number: 121924813213

Custody Seal on Cooler/Box Present: Yes (No) **Seals Intact:** Yes No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None **Ice Intact:** (Yes) Melted

Cooler Temperature: 1°C **Radiation Screened:** Yes (No) **Chain of Custody Present:** (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?		✓		

Comments:_____

_____

Cooler contents examined/received by : LG **Date:** 10.25.19

Project Manager Review : ERJ **Date:** 10/25/19

F-PAE-Q-009-rev.01, 3Oct2017

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 15, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on October 25, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

REV-1, 11/15/19: Revised to include both Pace Energy reports.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60319241001	**TMW-34-201910**	Water	10/24/19 17:30	10/25/19 02:10
60319241002	**TMW-32-201910**	Water	10/24/19 15:15	10/25/19 02:10
60319241003	**MW-186-201910**	Water	10/24/19 13:15	10/25/19 02:10
60319241004	**TMW-25-201910**	Water	10/24/19 10:55	10/25/19 02:10
60319241005	**IW-147-201910**	Water	10/24/19 10:15	10/25/19 02:10
60319241006	**MW-95-201910**	Water	10/24/19 13:05	10/25/19 02:10
60319241007	**MW-83-201910**	Water	10/24/19 10:00	10/25/19 02:10
60319241008	**ITMW-18-201910**	Water	10/24/19 13:00	10/25/19 02:10
60319241009	**ITMW-19-201910**	Water	10/24/19 11:25	10/25/19 02:10
60319241010	**MW-93-201910**	Water	10/24/19 14:35	10/25/19 02:10
60319241011	**MW-189-201910**	Water	10/24/19 09:32	10/25/19 02:10
60319241012	**TMW-36-201910**	Water	10/24/19 10:46	10/25/19 02:10
60319241013	**MW-185-201910**	Water	10/24/19 14:29	10/25/19 02:10
60319241014	**MW-27-201910**	Water	10/24/19 13:15	10/25/19 02:10
60319241015	**ITMW-2R-201910**	Water	10/24/19 10:05	10/25/19 02:10
60319241016	**ITMW-11-201910**	Water	10/24/19 11:55	10/25/19 02:10
60319241017	**ITMW-12R-201910**	Water	10/24/19 16:05	10/25/19 02:10
60319241018	**MW-91-201910**	Water	10/24/19 14:20	10/25/19 02:10
60319241019	**ITMW-21-201910**	Water	10/24/19 09:25	10/25/19 02:10
60319241020	**MW-85R-201910**	Water	10/24/19 10:45	10/25/19 02:10
60319241021	**IW-134-201910**	Water	10/24/19 12:05	10/25/19 02:10
60319241022	**MW-37-201910**	Water	10/24/19 15:30	10/25/19 02:10
60319241023	**ITMW-16-201910**	Water	10/24/19 09:50	10/25/19 02:10
60319241024	**ITMW-10-201910**	Water	10/24/19 11:35	10/25/19 02:10
60319241025	**ITMW-5-201910**	Water	10/24/19 13:05	10/25/19 02:10
60319241026	**IW-132-201910**	Water	10/24/19 15:30	10/25/19 02:10
60319241027	**DUP-08-201910**	Water	10/24/19 09:32	10/25/19 02:10
60319241028	**DUP-09-201910**	Water	10/24/19 10:45	10/25/19 02:10
60319241029	**DUP-10-201910**	Water	10/24/19 09:50	10/25/19 02:10
60319241030	**EB-04-201910**	Water	10/24/19 16:45	10/25/19 02:10
60319241031	**EB-05-201910**	Water	10/24/19 16:50	10/25/19 02:10
60319241032	**MW-179-201910**	Water	10/24/19 15:50	10/25/19 02:10
60319241033	**TB-06-201910**	Water	10/24/19 17:40	10/25/19 02:10
60319241034	**TB-07-201910**	Water	10/24/19 17:45	10/25/19 02:10
60319241035	**TB-08-201910**	Water	10/24/19 17:50	10/25/19 02:10

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60319241001	**TMW-34-201910**	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	JDS	1	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241002	**TMW-32-201910**	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	JDS	1	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241003	**MW-186-201910**	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	JDS	1	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241004	**TMW-25-201910**	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	JDS	1	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241005	**IW-147-201910**	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH, WNM	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241006	**MW-95-201910**	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH, WNM	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241007	**MW-83-201910**	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60319241008	ITMW-18-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241009	ITMW-19-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241010	MW-93-201910	EPA 5030B/8260	PGH, WNM	38	PASI-K
60319241011	MW-189-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241012	TMW-36-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241013	MW-185-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241014	MW-27-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241015	ITMW-2R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241016	ITMW-11-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241017	ITMW-12R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241018	MW-91-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241019	ITMW-21-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241020	MW-85R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241021	IW-134-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241022	MW-37-201910	EPA 5030B/8260	PGH, WNM	38	PASI-K
60319241023	ITMW-16-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241024	ITMW-10-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241025	ITMW-5-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241026	IW-132-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241027	DUP-08-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241028	DUP-09-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241029	DUP-10-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241030	EB-04-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241031	EB-05-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241032	MW-179-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241033	TB-06-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241034	TB-07-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241035	TB-08-201910	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
6 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
35 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 619619
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 619753
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 619801
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 620343
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 620685
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 15, 2019

Analyte Comments:

QC Batch: 619619

1e: Sample was analyzed at a 5x dilution which resulted in a non-dection. Sample was re-analyzed at a 1x dilution and the result matched the initial run.

- ITMW-19-201910 (Lab ID: 60319241009)
  - Trichloroethene

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- ITMW-19-201910 (Lab ID: 60319241009)
  - Trichloroethene

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
2 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
6 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 unpres
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
2 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 618401

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60319241005

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2523315)
  - Nitrogen, Nitrite

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 pres.
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
4 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 619108

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60319076002,60319190001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2525615)
  - Nitrogen, NO2 plus NO3

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Method: **SM 5310C**
Description: 5310C TOC
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
6 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Method: **SM 5310C**
Description: 5310C Diss. Organic Carbon LF
Client: Ramboll Environ_AR
Date: November 15, 2019

General Information:
4 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 619520

B: Analyte was detected in the associated method blank.

- BLANK for HBN 619520 [WETA/631 (Lab ID: 2526889)
  - Dissolved Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-34-201910 **Lab ID: 60319241001** Collected: 10/24/19 17:30 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**2110**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:17	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 17:09	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 17:09	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 17:09	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 17:09	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 17:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 17:09	78-93-3	
Carbon disulfide	**0.27J**	ug/L	5.0	0.16	1		11/01/19 17:09	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 17:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 17:09	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 17:09	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 17:09	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 17:09	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 17:09	124-48-1	
1,1-Dichloroethane	**0.14J**	ug/L	1.0	0.097	1		11/01/19 17:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 17:09	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:09	75-35-4	
cis-1,2-Dichloroethene	**6.9**	ug/L	1.0	0.17	1		11/01/19 17:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 17:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 17:09	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 17:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 17:09	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 17:09	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 17:09	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 17:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 17:09	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 17:09	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 17:09	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:09	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 17:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 17:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 17:09	79-00-5	
Trichloroethene	**17.6**	ug/L	1.0	0.17	1		11/01/19 17:09	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 17:09	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 17:09	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/01/19 17:09	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/01/19 17:09	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/01/19 17:09	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 17:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**26.0**	mg/L	2.0	0.44	2		11/07/19 03:38	16887-00-6	
Sulfate	**10.4**	mg/L	1.0	0.23	1		11/07/19 02:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-34-201910 **Lab ID: 60319241001** Collected: 10/24/19 17:30 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.0**	mg/L	0.10	0.038	1		10/30/19 10:00		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.56J**	mg/L	1.0	0.29	1		11/01/19 17:09	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**6.5**	mg/L	1.0	0.29	1		11/01/19 01:26		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-32-201910 **Lab ID: 60319241002** Collected: 10/24/19 15:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**12500**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:24	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 17:52	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 17:52	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 17:52	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 17:52	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 17:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 17:52	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 17:52	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 17:52	56-23-5	
Chlorobenzene	**2.7**	ug/L	1.0	0.13	1		11/01/19 17:52	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 17:52	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 17:52	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 17:52	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 17:52	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 17:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 17:52	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:52	75-35-4	
cis-1,2-Dichloroethene	**21.0**	ug/L	1.0	0.17	1		11/01/19 17:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 17:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 17:52	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 17:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 17:52	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 17:52	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 17:52	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 17:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 17:52	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 17:52	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 17:52	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:52	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 17:52	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 17:52	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 17:52	79-00-5	
Trichloroethene	**29.2**	ug/L	1.0	0.17	1		11/01/19 17:52	79-01-6	
Vinyl chloride	**0.13J**	ug/L	1.0	0.11	1		11/01/19 17:52	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 17:52	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/01/19 17:52	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/01/19 17:52	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 17:52	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 17:52		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**110**	mg/L	10.0	2.2	10		11/05/19 19:08	16887-00-6	
Sulfate	**27.2**	mg/L	2.0	0.46	2		11/07/19 04:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-32-201910 **Lab ID: 60319241002** Collected: 10/24/19 15:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.056J**	mg/L	0.10	0.038	1		10/30/19 10:01		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.2**	mg/L	1.0	0.29	1		11/01/19 17:35	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**1.3**	mg/L	1.0	0.29	1		11/01/19 01:40		B

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-186-201910 **Lab ID: 60319241003** Collected: 10/24/19 13:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**39400**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:26	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 18:34	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 18:34	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 18:34	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 18:34	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 18:34	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 18:34	78-93-3	
Carbon disulfide	**0.81J**	ug/L	5.0	0.16	1		11/01/19 18:34	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 18:34	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 18:34	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 18:34	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 18:34	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 18:34	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 18:34	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 18:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 18:34	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 18:34	75-35-4	
cis-1,2-Dichloroethene	**3.0**	ug/L	1.0	0.17	1		11/01/19 18:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 18:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 18:34	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 18:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 18:34	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 18:34	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 18:34	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 18:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	**0.68J**	ug/L	10.0	0.56	1		11/01/19 18:34	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 18:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 18:34	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 18:34	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 18:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 18:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 18:34	79-00-5	
Trichloroethene	**2.9**	ug/L	1.0	0.17	1		11/01/19 18:34	79-01-6	
Vinyl chloride	**2.2**	ug/L	1.0	0.11	1		11/01/19 18:34	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 18:34	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/01/19 18:34	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/01/19 18:34	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 18:34	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 18:34		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**155**	mg/L	10.0	2.2	10		11/05/19 19:41	16887-00-6	
Sulfate	**6.5**	mg/L	1.0	0.23	1		11/07/19 04:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-186-201910 **Lab ID: 60319241003** Collected: 10/24/19 13:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.16**	mg/L	0.10	0.038	1		10/30/19 10:03		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**40.1**	mg/L	10.0	2.9	10		11/01/19 17:49	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**34.1**	mg/L	10.0	2.9	10		11/01/19 23:22		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-25-201910 **Lab ID: 60319241004** Collected: 10/24/19 10:55 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**23600**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:29	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 17:23	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 17:23	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 17:23	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 17:23	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 17:23	74-83-9	
2-Butanone (MEK)	**15.8**	ug/L	10.0	0.70	1		11/01/19 17:23	78-93-3	
Carbon disulfide	**0.31J**	ug/L	5.0	0.16	1		11/01/19 17:23	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 17:23	56-23-5	
Chlorobenzene	**5.3**	ug/L	1.0	0.13	1		11/01/19 17:23	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 17:23	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 17:23	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 17:23	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 17:23	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 17:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 17:23	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:23	75-35-4	
cis-1,2-Dichloroethene	**39.9**	ug/L	1.0	0.17	1		11/01/19 17:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 17:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 17:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 17:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 17:23	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 17:23	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 17:23	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 17:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 17:23	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 17:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 17:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:23	127-18-4	
Toluene	**0.15J**	ug/L	1.0	0.14	1		11/01/19 17:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 17:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 17:23	79-00-5	
Trichloroethene	**23.6**	ug/L	1.0	0.17	1		11/01/19 17:23	79-01-6	
Vinyl chloride	**0.41J**	ug/L	1.0	0.11	1		11/01/19 17:23	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 17:23	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/01/19 17:23	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/01/19 17:23	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/01/19 17:23	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 17:23		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**149**	mg/L	10.0	2.2	10		11/05/19 20:14	16887-00-6	
Sulfate	**19.2**	mg/L	2.0	0.46	2		11/07/19 05:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-25-201910 **Lab ID: 60319241004** Collected: 10/24/19 10:55 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.3**	mg/L	0.10	0.038	1		10/30/19 10:04		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**43.4**	mg/L	10.0	2.9	10		11/01/19 18:02	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**39.3**	mg/L	10.0	2.9	10		11/02/19 00:02		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: IW-147-201910 **Lab ID: 60319241005** Collected: 10/24/19 10:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**50.0J**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:31	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	7.4	1		11/06/19 16:29	67-64-1	
Benzene	**0.49J**	ug/L	1.0	0.13	1		11/06/19 16:29	71-43-2	
Bromodichloromethane	**1.5**	ug/L	1.0	0.14	1		11/06/19 16:29	75-27-4	
Bromoform	**4.5**	ug/L	1.0	0.28	1		11/06/19 16:29	75-25-2	
Bromomethane	ND	ug/L	5.0	2.8	1		11/06/19 16:29	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1.8	1		11/06/19 16:29	78-93-3	
Carbon disulfide	**0.69J**	ug/L	5.0	0.086	1		11/06/19 16:29	75-15-0	
Carbon tetrachloride	**1.4**	ug/L	1.0	0.070	1		11/06/19 16:29	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.17	1		11/06/19 16:29	108-90-7	
Chloroethane	ND	ug/L	1.0	0.83	1		11/06/19 16:29	75-00-3	
Chloroform	**20.2**	ug/L	1.0	0.25	1		11/06/19 16:29	67-66-3	
Chloromethane	**2.4**	ug/L	1.0	0.51	1		11/06/19 16:29	74-87-3	
Dibromochloromethane	**0.59J**	ug/L	1.0	0.15	1		11/06/19 16:29	124-48-1	
1,1-Dichloroethane	**2.5**	ug/L	1.0	0.12	1		11/06/19 16:29	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.33	1		11/06/19 16:29	107-06-2	
1,1-Dichloroethene	**90.4**	ug/L	1.0	0.14	1		11/06/19 16:29	75-35-4	
cis-1,2-Dichloroethene	**5420**	ug/L	2000	340	2000		11/01/19 19:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2000	340	2000		11/01/19 19:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		11/06/19 16:29	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 16:29	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 16:29	10061-02-6	
Ethylbenzene	**0.20J**	ug/L	1.0	0.20	1		11/06/19 16:29	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.6	1		11/06/19 16:29	591-78-6	
Methylene Chloride	**4.8**	ug/L	1.0	0.35	1		11/06/19 16:29	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1.3	1		11/06/19 16:29	108-10-1	
Styrene	ND	ug/L	1.0	0.19	1		11/06/19 16:29	100-42-5	
1,1,2,2-Tetrachloroethane	**44.4**	ug/L	1.0	0.23	1		11/06/19 16:29	79-34-5	
Tetrachloroethene	**42.5**	ug/L	1.0	0.14	1		11/06/19 16:29	127-18-4	
Toluene	**5.3**	ug/L	1.0	0.17	1		11/06/19 16:29	108-88-3	
1,1,1-Trichloroethane	**76.8**	ug/L	1.0	0.12	1		11/06/19 16:29	71-55-6	
1,1,2-Trichloroethane	**3.5**	ug/L	1.0	0.10	1		11/06/19 16:29	79-00-5	
Trichloroethene	**95800**	ug/L	2000	340	2000		11/01/19 19:03	79-01-6	
Vinyl chloride	**376J**	ug/L	2000	220	2000		11/01/19 19:03	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		11/06/19 16:29	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	95	%	80-120		1		11/06/19 16:29	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	77-122		1		11/06/19 16:29	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/06/19 16:29	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/06/19 16:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/30/19 14:44	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: IW-147-201910 **Lab ID: 60319241005** Collected: 10/24/19 10:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**669**	mg/L	50.0	11.5	50		11/08/19 17:13	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.20**	mg/L	0.10	0.038	1		10/25/19 15:28		
Nitrogen, Nitrate	**0.20**	mg/L	0.10	0.067	1		10/25/19 15:28	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/25/19 15:28	14797-65-0	M1
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.0**	mg/L	1.0	0.29	1		11/01/19 18:42	7440-44-0	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-95-201910 **Lab ID: 60319241006** Collected: 10/24/19 13:05 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**19.1J**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:33	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	7.4	1		11/06/19 16:43	67-64-1	
Benzene	ND	ug/L	1.0	0.13	1		11/06/19 16:43	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.14	1		11/06/19 16:43	75-27-4	
Bromoform	ND	ug/L	1.0	0.28	1		11/06/19 16:43	75-25-2	
Bromomethane	ND	ug/L	5.0	2.8	1		11/06/19 16:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1.8	1		11/06/19 16:43	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.086	1		11/06/19 16:43	75-15-0	
Carbon tetrachloride	**0.26J**	ug/L	1.0	0.070	1		11/06/19 16:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.17	1		11/06/19 16:43	108-90-7	
Chloroethane	ND	ug/L	1.0	0.83	1		11/06/19 16:43	75-00-3	
Chloroform	**5.4**	ug/L	1.0	0.25	1		11/06/19 16:43	67-66-3	
Chloromethane	ND	ug/L	1.0	0.51	1		11/06/19 16:43	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/06/19 16:43	124-48-1	
1,1-Dichloroethane	**0.50J**	ug/L	1.0	0.12	1		11/06/19 16:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.33	1		11/06/19 16:43	107-06-2	
1,1-Dichloroethene	**23.5**	ug/L	1.0	0.14	1		11/06/19 16:43	75-35-4	
cis-1,2-Dichloroethene	**265**	ug/L	200	34.0	200		11/01/19 18:48	156-59-2	
trans-1,2-Dichloroethene	**30.5**	ug/L	1.0	0.082	1		11/06/19 16:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		11/06/19 16:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 16:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 16:43	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.20	1		11/06/19 16:43	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.6	1		11/06/19 16:43	591-78-6	
Methylene Chloride	**2.3**	ug/L	1.0	0.35	1		11/06/19 16:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1.3	1		11/06/19 16:43	108-10-1	
Styrene	ND	ug/L	1.0	0.19	1		11/06/19 16:43	100-42-5	
1,1,2,2-Tetrachloroethane	**1.0**	ug/L	1.0	0.23	1		11/06/19 16:43	79-34-5	
Tetrachloroethene	**8.1**	ug/L	1.0	0.14	1		11/06/19 16:43	127-18-4	
Toluene	ND	ug/L	1.0	0.17	1		11/06/19 16:43	108-88-3	
1,1,1-Trichloroethane	**2.1**	ug/L	1.0	0.12	1		11/06/19 16:43	71-55-6	
1,1,2-Trichloroethane	**1.8**	ug/L	1.0	0.10	1		11/06/19 16:43	79-00-5	
Trichloroethene	**24700**	ug/L	200	34.0	200		11/01/19 18:48	79-01-6	
Vinyl chloride	**25.9**	ug/L	1.0	0.17	1		11/06/19 16:43	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		11/06/19 16:43	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	92	%	80-120		1		11/06/19 16:43	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/06/19 16:43	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/06/19 16:43	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/06/19 16:43		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/30/19 14:45	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-95-201910 **Lab ID: 60319241006** Collected: 10/24/19 13:05 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**24.4**	mg/L	2.0	0.46	2		11/07/19 05:51	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.97**	mg/L	0.10	0.038	1		10/25/19 15:29		
Nitrogen, Nitrate	**0.97**	mg/L	0.10	0.067	1		10/25/19 15:29	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/25/19 15:29	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	ND	mg/L	1.0	0.29	1		11/01/19 18:55	7440-44-0	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-83-201910 **Lab ID: 60319241007** Collected: 10/24/19 10:00 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 17:37	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 17:37	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 17:37	75-27-4	
Bromoform	**2.6**	ug/L	1.0	0.21	1		11/01/19 17:37	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 17:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 17:37	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 17:37	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 17:37	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 17:37	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 17:37	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 17:37	67-66-3	
Chloromethane	**0.18J**	ug/L	1.0	0.16	1		11/01/19 17:37	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 17:37	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 17:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 17:37	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:37	75-35-4	
cis-1,2-Dichloroethene	**0.85J**	ug/L	1.0	0.17	1		11/01/19 17:37	156-59-2	
trans-1,2-Dichloroethene	**0.19J**	ug/L	1.0	0.17	1		11/01/19 17:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 17:37	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 17:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 17:37	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 17:37	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 17:37	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 17:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 17:37	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 17:37	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 17:37	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:37	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 17:37	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 17:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 17:37	79-00-5	
Trichloroethene	**41.9**	ug/L	1.0	0.17	1		11/01/19 17:37	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 17:37	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 17:37	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		11/01/19 17:37	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/01/19 17:37	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		11/01/19 17:37	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 17:37		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-18-201910 **Lab ID: 60319241008** Collected: 10/24/19 13:00 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 18:20	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 18:20	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 18:20	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 18:20	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 18:20	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 18:20	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 18:20	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 18:20	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 18:20	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 18:20	75-00-3	
Chloroform	**0.38J**	ug/L	1.0	0.10	1		11/01/19 18:20	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 18:20	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 18:20	124-48-1	
1,1-Dichloroethane	**0.32J**	ug/L	1.0	0.097	1		11/01/19 18:20	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 18:20	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 18:20	75-35-4	
cis-1,2-Dichloroethene	**68.4**	ug/L	1.0	0.17	1		11/01/19 18:20	156-59-2	
trans-1,2-Dichloroethene	**12.4**	ug/L	1.0	0.17	1		11/01/19 18:20	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 18:20	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 18:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 18:20	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 18:20	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 18:20	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 18:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 18:20	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 18:20	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 18:20	79-34-5	
Tetrachloroethene	**0.30J**	ug/L	1.0	0.22	1		11/01/19 18:20	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 18:20	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 18:20	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 18:20	79-00-5	
Trichloroethene	**769**	ug/L	10.0	1.7	10		11/05/19 16:50	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 18:20	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 18:20	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/01/19 18:20	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	77-122		1		11/01/19 18:20	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		11/01/19 18:20	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 18:20		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-19-201910 **Lab ID: 60319241009** Collected: 10/24/19 11:25 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 18:06	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 18:06	71-43-2	
Bromodichloromethane	**0.49J**	ug/L	1.0	0.17	1		11/01/19 18:06	75-27-4	
Bromoform	**6.3**	ug/L	1.0	0.21	1		11/01/19 18:06	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 18:06	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 18:06	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 18:06	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 18:06	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 18:06	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 18:06	75-00-3	
Chloroform	**1.3**	ug/L	1.0	0.10	1		11/01/19 18:06	67-66-3	
Chloromethane	**1.3**	ug/L	1.0	0.16	1		11/01/19 18:06	74-87-3	
Dibromochloromethane	**0.70J**	ug/L	1.0	0.15	1		11/01/19 18:06	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 18:06	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 18:06	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 18:06	75-35-4	
cis-1,2-Dichloroethene	**1.8**	ug/L	1.0	0.17	1		11/01/19 18:06	156-59-2	
trans-1,2-Dichloroethene	**0.41J**	ug/L	1.0	0.17	1		11/01/19 18:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 18:06	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 18:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 18:06	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 18:06	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 18:06	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 18:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 18:06	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 18:06	100-42-5	
1,1,2,2-Tetrachloroethane	**0.69J**	ug/L	1.0	0.31	1		11/01/19 18:06	79-34-5	
Tetrachloroethene	**0.49J**	ug/L	1.0	0.22	1		11/01/19 18:06	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 18:06	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 18:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 18:06	79-00-5	
Trichloroethene	**240**	ug/L	1.0	0.17	1		11/01/19 18:06	79-01-6	1e,E
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 18:06	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 18:06	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/01/19 18:06	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/01/19 18:06	17060-07-0	
Toluene-d8 (S)	86	%	80-120		1		11/01/19 18:06	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 18:06		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-93-201910 **Lab ID: 60319241010** Collected: 10/24/19 14:35 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	7.4	1		11/06/19 16:57	67-64-1	
Benzene	ND	ug/L	1.0	0.13	1		11/06/19 16:57	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.14	1		11/06/19 16:57	75-27-4	
Bromoform	**0.65J**	ug/L	1.0	0.28	1		11/06/19 16:57	75-25-2	
Bromomethane	ND	ug/L	5.0	2.8	1		11/06/19 16:57	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1.8	1		11/06/19 16:57	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.086	1		11/06/19 16:57	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.070	1		11/06/19 16:57	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.17	1		11/06/19 16:57	108-90-7	
Chloroethane	ND	ug/L	1.0	0.83	1		11/06/19 16:57	75-00-3	
Chloroform	**2.9**	ug/L	1.0	0.25	1		11/06/19 16:57	67-66-3	
Chloromethane	ND	ug/L	1.0	0.51	1		11/06/19 16:57	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/06/19 16:57	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.12	1		11/06/19 16:57	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.33	1		11/06/19 16:57	107-06-2	
1,1-Dichloroethene	**11.9**	ug/L	1.0	0.14	1		11/06/19 16:57	75-35-4	
cis-1,2-Dichloroethene	**93.2**	ug/L	1.0	0.18	1		11/06/19 16:57	156-59-2	
trans-1,2-Dichloroethene	**8.7**	ug/L	1.0	0.082	1		11/06/19 16:57	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		11/06/19 16:57	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 16:57	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 16:57	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.20	1		11/06/19 16:57	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.6	1		11/06/19 16:57	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.35	1		11/06/19 16:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1.3	1		11/06/19 16:57	108-10-1	
Styrene	ND	ug/L	1.0	0.19	1		11/06/19 16:57	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.23	1		11/06/19 16:57	79-34-5	
Tetrachloroethene	**4.2**	ug/L	1.0	0.14	1		11/06/19 16:57	127-18-4	
Toluene	**0.18J**	ug/L	1.0	0.17	1		11/06/19 16:57	108-88-3	
1,1,1-Trichloroethane	**0.39J**	ug/L	1.0	0.12	1		11/06/19 16:57	71-55-6	
1,1,2-Trichloroethane	**0.79J**	ug/L	1.0	0.10	1		11/06/19 16:57	79-00-5	
Trichloroethene	**14700**	ug/L	200	34.0	200		11/04/19 13:50	79-01-6	
Vinyl chloride	**2.1**	ug/L	1.0	0.17	1		11/06/19 16:57	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		11/06/19 16:57	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	90	%	80-120		1		11/06/19 16:57	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	77-122		1		11/06/19 16:57	17060-07-0	
Toluene-d8 (S)	104	%	80-120		1		11/06/19 16:57	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/06/19 16:57		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-189-201910 **Lab ID: 60319241011** Collected: 10/24/19 09:32 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 10:59	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 10:59	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 10:59	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 10:59	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 10:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 10:59	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 10:59	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 10:59	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 10:59	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 10:59	75-00-3	
Chloroform	**0.23J**	ug/L	1.0	0.10	1		11/04/19 10:59	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 10:59	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 10:59	124-48-1	
1,1-Dichloroethane	**0.84J**	ug/L	1.0	0.097	1		11/04/19 10:59	75-34-3	
1,2-Dichloroethane	**0.15J**	ug/L	1.0	0.14	1		11/04/19 10:59	107-06-2	
1,1-Dichloroethene	**1.2**	ug/L	1.0	0.22	1		11/04/19 10:59	75-35-4	
cis-1,2-Dichloroethene	**8.9**	ug/L	1.0	0.17	1		11/04/19 10:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 10:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 10:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 10:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 10:59	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 10:59	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 10:59	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 10:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 10:59	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 10:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 10:59	79-34-5	
Tetrachloroethene	**0.23J**	ug/L	1.0	0.22	1		11/04/19 10:59	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 10:59	108-88-3	
1,1,1-Trichloroethane	**0.18J**	ug/L	1.0	0.12	1		11/04/19 10:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 10:59	79-00-5	
Trichloroethene	**510**	ug/L	10.0	1.7	10		11/05/19 17:05	79-01-6	
Vinyl chloride	**0.47J**	ug/L	1.0	0.11	1		11/04/19 10:59	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 10:59	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/04/19 10:59	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/04/19 10:59	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 10:59	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 10:59		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-36-201910 **Lab ID: 60319241012** Collected: 10/24/19 10:46 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 12:39	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 12:39	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 12:39	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 12:39	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 12:39	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 12:39	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 12:39	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 12:39	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 12:39	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 12:39	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 12:39	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 12:39	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 12:39	124-48-1	
1,1-Dichloroethane	**0.99J**	ug/L	1.0	0.097	1		11/04/19 12:39	75-34-3	
1,2-Dichloroethane	**0.14J**	ug/L	1.0	0.14	1		11/04/19 12:39	107-06-2	
1,1-Dichloroethene	**1.1**	ug/L	1.0	0.22	1		11/04/19 12:39	75-35-4	
cis-1,2-Dichloroethene	**8.4**	ug/L	1.0	0.17	1		11/04/19 12:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 12:39	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 12:39	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 12:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 12:39	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 12:39	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 12:39	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 12:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 12:39	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 12:39	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 12:39	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 12:39	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 12:39	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 12:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 12:39	79-00-5	
Trichloroethene	**389**	ug/L	5.0	0.85	5		11/04/19 12:53	79-01-6	
Vinyl chloride	**0.31J**	ug/L	1.0	0.11	1		11/04/19 12:39	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 12:39	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/04/19 12:39	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/04/19 12:39	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 12:39	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 12:39		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-185-201910 **Lab ID: 60319241013** Collected: 10/24/19 14:29 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 08:08	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 08:08	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 08:08	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 08:08	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 08:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 08:08	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 08:08	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 08:08	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 08:08	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 08:08	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 08:08	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 08:08	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 08:08	124-48-1	
1,1-Dichloroethane	**0.27J**	ug/L	1.0	0.097	1		11/04/19 08:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 08:08	107-06-2	
1,1-Dichloroethene	**0.67J**	ug/L	1.0	0.22	1		11/04/19 08:08	75-35-4	
cis-1,2-Dichloroethene	**6.3**	ug/L	1.0	0.17	1		11/04/19 08:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 08:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 08:08	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 08:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 08:08	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 08:08	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 08:08	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 08:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 08:08	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 08:08	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 08:08	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 08:08	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 08:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 08:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 08:08	79-00-5	
Trichloroethene	**52.7**	ug/L	1.0	0.17	1		11/04/19 08:08	79-01-6	
Vinyl chloride	**0.12J**	ug/L	1.0	0.11	1		11/04/19 08:08	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 08:08	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/04/19 08:08	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/04/19 08:08	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		11/04/19 08:08	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 08:08		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-27-201910 **Lab ID: 60319241014** Collected: 10/24/19 13:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 08:22	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 08:22	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 08:22	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 08:22	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 08:22	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 08:22	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 08:22	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 08:22	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 08:22	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 08:22	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 08:22	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 08:22	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 08:22	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 08:22	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 08:22	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/04/19 08:22	75-35-4	
cis-1,2-Dichloroethene	**0.40J**	ug/L	1.0	0.17	1		11/04/19 08:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 08:22	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 08:22	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 08:22	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 08:22	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 08:22	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 08:22	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 08:22	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 08:22	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 08:22	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 08:22	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 08:22	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 08:22	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 08:22	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 08:22	79-00-5	
Trichloroethene	**1.9**	ug/L	1.0	0.17	1		11/04/19 08:22	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 08:22	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 08:22	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/04/19 08:22	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	77-122		1		11/04/19 08:22	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 08:22	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 08:22		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-2R-201910 **Lab ID: 60319241015** Collected: 10/24/19 10:05 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 09:19	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 09:19	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 09:19	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 09:19	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 09:19	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 09:19	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 09:19	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 09:19	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 09:19	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 09:19	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 09:19	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 09:19	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 09:19	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 09:19	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 09:19	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/04/19 09:19	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 09:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 09:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 09:19	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 09:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 09:19	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 09:19	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 09:19	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 09:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 09:19	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 09:19	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 09:19	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 09:19	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 09:19	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 09:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 09:19	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 09:19	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 09:19	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 09:19	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/04/19 09:19	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	77-122		1		11/04/19 09:19	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/04/19 09:19	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 09:19		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-11-201910 **Lab ID: 60319241016** Collected: 10/24/19 11:55 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**27.4**	ug/L	10.0	3.3	1		11/04/19 11:13	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 11:13	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 11:13	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 11:13	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 11:13	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 11:13	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 11:13	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 11:13	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 11:13	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 11:13	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 11:13	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 11:13	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 11:13	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 11:13	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 11:13	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/04/19 11:13	75-35-4	
cis-1,2-Dichloroethene	**0.39J**	ug/L	1.0	0.17	1		11/04/19 11:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 11:13	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 11:13	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 11:13	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 11:13	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 11:13	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 11:13	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 11:13	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 11:13	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 11:13	100-42-5	
1,1,2,2-Tetrachloroethane	**1.4**	ug/L	1.0	0.31	1		11/04/19 11:13	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 11:13	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 11:13	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 11:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 11:13	79-00-5	
Trichloroethene	**9.9**	ug/L	1.0	0.17	1		11/05/19 15:11	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 11:13	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 11:13	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/04/19 11:13	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/04/19 11:13	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/04/19 11:13	2037-26-5	
Preservation pH	**3.0**		0.10	0.10	1		11/04/19 11:13		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-12R-201910 **Lab ID: 60319241017** Collected: 10/24/19 16:05 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 09:33	67-64-1	
Benzene	**0.27J**	ug/L	1.0	0.079	1		11/04/19 09:33	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 09:33	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 09:33	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 09:33	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 09:33	78-93-3	
Carbon disulfide	**0.44J**	ug/L	5.0	0.16	1		11/04/19 09:33	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 09:33	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 09:33	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 09:33	75-00-3	
Chloroform	**1.9**	ug/L	1.0	0.10	1		11/04/19 09:33	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 09:33	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 09:33	124-48-1	
1,1-Dichloroethane	**1.0**	ug/L	1.0	0.097	1		11/04/19 09:33	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 09:33	107-06-2	
1,1-Dichloroethene	**12.9**	ug/L	1.0	0.22	1		11/04/19 09:33	75-35-4	
cis-1,2-Dichloroethene	**275**	ug/L	100	17.0	100		11/05/19 17:48	156-59-2	
trans-1,2-Dichloroethene	**1.2**	ug/L	1.0	0.17	1		11/04/19 09:33	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 09:33	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 09:33	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 09:33	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 09:33	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 09:33	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 09:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 09:33	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 09:33	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 09:33	79-34-5	
Tetrachloroethene	**2.9**	ug/L	1.0	0.22	1		11/04/19 09:33	127-18-4	
Toluene	**0.15J**	ug/L	1.0	0.14	1		11/04/19 09:33	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 09:33	71-55-6	
1,1,2-Trichloroethane	**0.95J**	ug/L	1.0	0.10	1		11/04/19 09:33	79-00-5	
Trichloroethene	**11800**	ug/L	100	17.0	100		11/05/19 17:48	79-01-6	
Vinyl chloride	**7.1**	ug/L	1.0	0.11	1		11/04/19 09:33	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 09:33	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/04/19 09:33	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/04/19 09:33	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 09:33	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 09:33		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-91-201910 **Lab ID: 60319241018** Collected: 10/24/19 14:20 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 13:07	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 13:07	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 13:07	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 13:07	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 13:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 13:07	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 13:07	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 13:07	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 13:07	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 13:07	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 13:07	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 13:07	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 13:07	124-48-1	
1,1-Dichloroethane	**1.2**	ug/L	1.0	0.097	1		11/04/19 13:07	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 13:07	107-06-2	
1,1-Dichloroethene	**3.4**	ug/L	1.0	0.22	1		11/04/19 13:07	75-35-4	
cis-1,2-Dichloroethene	**26.8**	ug/L	1.0	0.17	1		11/04/19 13:07	156-59-2	
trans-1,2-Dichloroethene	**0.47J**	ug/L	1.0	0.17	1		11/04/19 13:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 13:07	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 13:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 13:07	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 13:07	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 13:07	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 13:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 13:07	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 13:07	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 13:07	79-34-5	
Tetrachloroethene	**3.4**	ug/L	1.0	0.22	1		11/04/19 13:07	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 13:07	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 13:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 13:07	79-00-5	
Trichloroethene	**437**	ug/L	10.0	1.7	10		11/04/19 13:21	79-01-6	
Vinyl chloride	**0.18J**	ug/L	1.0	0.11	1		11/04/19 13:07	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 13:07	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/04/19 13:07	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		11/04/19 13:07	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/04/19 13:07	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 13:07		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-21-201910 **Lab ID: 60319241019** Collected: 10/24/19 09:25 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 08:36	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 08:36	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 08:36	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 08:36	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 08:36	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 08:36	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 08:36	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 08:36	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 08:36	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 08:36	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 08:36	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 08:36	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 08:36	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 08:36	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 08:36	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/04/19 08:36	75-35-4	
cis-1,2-Dichloroethene	**0.30J**	ug/L	1.0	0.17	1		11/04/19 08:36	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 08:36	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 08:36	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 08:36	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 08:36	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 08:36	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 08:36	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 08:36	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 08:36	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 08:36	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 08:36	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 08:36	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 08:36	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 08:36	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 08:36	79-00-5	
Trichloroethene	**6.0**	ug/L	1.0	0.17	1		11/04/19 08:36	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 08:36	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 08:36	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/04/19 08:36	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/04/19 08:36	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/04/19 08:36	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 08:36		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-85R-201910 **Lab ID: 60319241020** Collected: 10/24/19 10:45 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 10:44	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 10:44	71-43-2	
Bromodichloromethane	**0.43J**	ug/L	1.0	0.17	1		11/04/19 10:44	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 10:44	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 10:44	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 10:44	78-93-3	
Carbon disulfide	**10.0**	ug/L	5.0	0.16	1		11/04/19 10:44	75-15-0	
Carbon tetrachloride	**2.1**	ug/L	1.0	0.084	1		11/04/19 10:44	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 10:44	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 10:44	75-00-3	
Chloroform	**12.4**	ug/L	1.0	0.10	1		11/04/19 10:44	67-66-3	
Chloromethane	**0.79J**	ug/L	1.0	0.16	1		11/04/19 10:44	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 10:44	124-48-1	
1,1-Dichloroethane	**7.6**	ug/L	1.0	0.097	1		11/04/19 10:44	75-34-3	
1,2-Dichloroethane	**0.17J**	ug/L	1.0	0.14	1		11/04/19 10:44	107-06-2	
1,1-Dichloroethene	**80.6**	ug/L	1.0	0.22	1		11/04/19 10:44	75-35-4	
cis-1,2-Dichloroethene	**103**	ug/L	1.0	0.17	1		11/04/19 10:44	156-59-2	
trans-1,2-Dichloroethene	**10.9**	ug/L	1.0	0.17	1		11/04/19 10:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 10:44	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 10:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 10:44	10061-02-6	
Ethylbenzene	**0.23J**	ug/L	1.0	0.12	1		11/04/19 10:44	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 10:44	591-78-6	
Methylene Chloride	**1.8**	ug/L	1.0	0.27	1		11/04/19 10:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 10:44	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 10:44	100-42-5	
1,1,2,2-Tetrachloroethane	**4.2**	ug/L	1.0	0.31	1		11/04/19 10:44	79-34-5	
Tetrachloroethene	**8.7**	ug/L	1.0	0.22	1		11/04/19 10:44	127-18-4	
Toluene	**5.3**	ug/L	1.0	0.14	1		11/04/19 10:44	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	2000	240	2000		11/05/19 18:02	71-55-6	
1,1,2-Trichloroethane	**2.9**	ug/L	1.0	0.10	1		11/04/19 10:44	79-00-5	
Trichloroethene	**68300**	ug/L	2000	340	2000		11/05/19 18:02	79-01-6	
Vinyl chloride	**4.5**	ug/L	1.0	0.11	1		11/04/19 10:44	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 10:44	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/04/19 10:44	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		11/04/19 10:44	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/04/19 10:44	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 10:44		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: IW-134-201910 **Lab ID: 60319241021** Collected: 10/24/19 12:05 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 09:47	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 09:47	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 09:47	75-27-4	
Bromoform	**6.0**	ug/L	1.0	0.21	1		11/04/19 09:47	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 09:47	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 09:47	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 09:47	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 09:47	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 09:47	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 09:47	75-00-3	
Chloroform	**0.15J**	ug/L	1.0	0.10	1		11/04/19 09:47	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 09:47	74-87-3	
Dibromochloromethane	**0.26J**	ug/L	1.0	0.15	1		11/04/19 09:47	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 09:47	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 09:47	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/04/19 09:47	75-35-4	
cis-1,2-Dichloroethene	**9.9**	ug/L	1.0	0.17	1		11/04/19 09:47	156-59-2	
trans-1,2-Dichloroethene	**1.5**	ug/L	1.0	0.17	1		11/04/19 09:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 09:47	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 09:47	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 09:47	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 09:47	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 09:47	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 09:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 09:47	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 09:47	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 09:47	79-34-5	
Tetrachloroethene	**0.28J**	ug/L	1.0	0.22	1		11/04/19 09:47	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 09:47	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 09:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 09:47	79-00-5	
Trichloroethene	**1090**	ug/L	20.0	3.4	20		11/05/19 17:33	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 09:47	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 09:47	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/04/19 09:47	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		11/04/19 09:47	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 09:47	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 09:47		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-37-201910 **Lab ID: 60319241022** Collected: 10/24/19 15:30 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	7.4	1		11/06/19 17:11	67-64-1	
Benzene	**0.15J**	ug/L	1.0	0.13	1		11/06/19 17:11	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.14	1		11/06/19 17:11	75-27-4	
Bromoform	**0.64J**	ug/L	1.0	0.28	1		11/06/19 17:11	75-25-2	
Bromomethane	ND	ug/L	5.0	2.8	1		11/06/19 17:11	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1.8	1		11/06/19 17:11	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.086	1		11/06/19 17:11	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.070	1		11/06/19 17:11	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.17	1		11/06/19 17:11	108-90-7	
Chloroethane	ND	ug/L	1.0	0.83	1		11/06/19 17:11	75-00-3	
Chloroform	**2.1**	ug/L	1.0	0.25	1		11/06/19 17:11	67-66-3	
Chloromethane	**0.89J**	ug/L	1.0	0.51	1		11/06/19 17:11	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/06/19 17:11	124-48-1	
1,1-Dichloroethane	**2.2**	ug/L	1.0	0.12	1		11/06/19 17:11	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.33	1		11/06/19 17:11	107-06-2	
1,1-Dichloroethene	**6.2**	ug/L	1.0	0.14	1		11/06/19 17:11	75-35-4	
cis-1,2-Dichloroethene	**1950**	ug/L	100	17.0	100		11/04/19 13:36	156-59-2	
trans-1,2-Dichloroethene	**32.7**	ug/L	1.0	0.082	1		11/06/19 17:11	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		11/06/19 17:11	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 17:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 17:11	10061-02-6	
Ethylbenzene	**0.74J**	ug/L	1.0	0.20	1		11/06/19 17:11	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.6	1		11/06/19 17:11	591-78-6	
Methylene Chloride	**5.8**	ug/L	1.0	0.35	1		11/06/19 17:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1.3	1		11/06/19 17:11	108-10-1	
Styrene	ND	ug/L	1.0	0.19	1		11/06/19 17:11	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.23	1		11/06/19 17:11	79-34-5	
Tetrachloroethene	**6.4**	ug/L	1.0	0.14	1		11/06/19 17:11	127-18-4	
Toluene	**7.0**	ug/L	1.0	0.17	1		11/06/19 17:11	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/06/19 17:11	71-55-6	
1,1,2-Trichloroethane	**0.48J**	ug/L	1.0	0.10	1		11/06/19 17:11	79-00-5	
Trichloroethene	**12100**	ug/L	100	17.0	100		11/04/19 13:36	79-01-6	
Vinyl chloride	**662**	ug/L	100	11.0	100		11/04/19 13:36	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		11/06/19 17:11	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	93	%	80-120		1		11/06/19 17:11	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/06/19 17:11	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/06/19 17:11	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/06/19 17:11		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-16-201910 **Lab ID: 60319241023** Collected: 10/24/19 09:50 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 08:50	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 08:50	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 08:50	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 08:50	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 08:50	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 08:50	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 08:50	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 08:50	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 08:50	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 08:50	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 08:50	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 08:50	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 08:50	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 08:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 08:50	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/04/19 08:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 08:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 08:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 08:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 08:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 08:50	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 08:50	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 08:50	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 08:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 08:50	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 08:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 08:50	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 08:50	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 08:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 08:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 08:50	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 08:50	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 08:50	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 08:50	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/04/19 08:50	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/04/19 08:50	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/04/19 08:50	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 08:50		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-10-201910 **Lab ID: 60319241024** Collected: 10/24/19 11:35 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 09:04	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 09:04	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 09:04	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 09:04	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 09:04	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 09:04	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 09:04	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 09:04	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 09:04	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 09:04	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 09:04	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 09:04	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 09:04	124-48-1	
1,1-Dichloroethane	**0.42J**	ug/L	1.0	0.097	1		11/04/19 09:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 09:04	107-06-2	
1,1-Dichloroethene	**0.44J**	ug/L	1.0	0.22	1		11/04/19 09:04	75-35-4	
cis-1,2-Dichloroethene	**6.3**	ug/L	1.0	0.17	1		11/04/19 09:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 09:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 09:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 09:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 09:04	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 09:04	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 09:04	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 09:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 09:04	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 09:04	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 09:04	79-34-5	
Tetrachloroethene	**0.22J**	ug/L	1.0	0.22	1		11/04/19 09:04	127-18-4	
Toluene	**0.32J**	ug/L	1.0	0.14	1		11/04/19 09:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 09:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 09:04	79-00-5	
Trichloroethene	**127**	ug/L	1.0	0.17	1		11/04/19 09:04	79-01-6	
Vinyl chloride	**0.40J**	ug/L	1.0	0.11	1		11/04/19 09:04	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 09:04	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	97	%	80-120		1		11/04/19 09:04	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/04/19 09:04	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 09:04	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 09:04		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-5-201910 **Lab ID: 60319241025** Collected: 10/24/19 13:05 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 11:41	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 11:41	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 11:41	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 11:41	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 11:41	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 11:41	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 11:41	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 11:41	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 11:41	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 11:41	75-00-3	
Chloroform	**0.80J**	ug/L	1.0	0.10	1		11/04/19 11:41	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 11:41	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 11:41	124-48-1	
1,1-Dichloroethane	**1.4**	ug/L	1.0	0.097	1		11/04/19 11:41	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 11:41	107-06-2	
1,1-Dichloroethene	**8.5**	ug/L	1.0	0.22	1		11/04/19 11:41	75-35-4	
cis-1,2-Dichloroethene	**42.1**	ug/L	1.0	0.17	1		11/04/19 11:41	156-59-2	
trans-1,2-Dichloroethene	**0.42J**	ug/L	1.0	0.17	1		11/04/19 11:41	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 11:41	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 11:41	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 11:41	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 11:41	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 11:41	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 11:41	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 11:41	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 11:41	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 11:41	79-34-5	
Tetrachloroethene	**1.8**	ug/L	1.0	0.22	1		11/04/19 11:41	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 11:41	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 11:41	71-55-6	
1,1,2-Trichloroethane	**0.11J**	ug/L	1.0	0.10	1		11/04/19 11:41	79-00-5	
Trichloroethene	**3700**	ug/L	20.0	3.4	20		11/04/19 11:56	79-01-6	
Vinyl chloride	**2.0**	ug/L	1.0	0.11	1		11/04/19 11:41	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 11:41	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/04/19 11:41	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		11/04/19 11:41	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 11:41	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 11:41		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: IW-132-201910 **Lab ID: 60319241026** Collected: 10/24/19 15:30 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 12:10	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 12:10	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 12:10	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 12:10	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 12:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 12:10	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 12:10	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 12:10	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 12:10	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 12:10	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 12:10	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 12:10	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 12:10	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 12:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 12:10	107-06-2	
1,1-Dichloroethene	**0.32J**	ug/L	1.0	0.22	1		11/04/19 12:10	75-35-4	
cis-1,2-Dichloroethene	**0.57J**	ug/L	1.0	0.17	1		11/04/19 12:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 12:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 12:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 12:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 12:10	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 12:10	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 12:10	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 12:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 12:10	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 12:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 12:10	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 12:10	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 12:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 12:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 12:10	79-00-5	
Trichloroethene	**292**	ug/L	20.0	3.4	20		11/04/19 12:24	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 12:10	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 12:10	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/04/19 12:10	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/04/19 12:10	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 12:10	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 12:10		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: DUP-08-201910 **Lab ID: 60319241027** Collected: 10/24/19 09:32 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 10:01	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 10:01	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 10:01	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 10:01	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 10:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 10:01	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 10:01	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 10:01	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 10:01	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 10:01	75-00-3	
Chloroform	**0.23J**	ug/L	1.0	0.10	1		11/04/19 10:01	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 10:01	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 10:01	124-48-1	
1,1-Dichloroethane	**0.79J**	ug/L	1.0	0.097	1		11/04/19 10:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 10:01	107-06-2	
1,1-Dichloroethene	**0.99J**	ug/L	1.0	0.22	1		11/04/19 10:01	75-35-4	
cis-1,2-Dichloroethene	**8.7**	ug/L	1.0	0.17	1		11/04/19 10:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 10:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 10:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 10:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 10:01	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 10:01	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 10:01	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 10:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 10:01	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 10:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 10:01	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 10:01	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 10:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 10:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 10:01	79-00-5	
Trichloroethene	**506**	ug/L	10.0	1.7	10		11/05/19 17:19	79-01-6	
Vinyl chloride	**0.50J**	ug/L	1.0	0.11	1		11/04/19 10:01	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 10:01	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		11/04/19 10:01	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		11/04/19 10:01	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/04/19 10:01	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 10:01		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: DUP-09-201910 **Lab ID: 60319241028** Collected: 10/24/19 10:45 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 10:16	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 10:16	71-43-2	
Bromodichloromethane	**0.46J**	ug/L	1.0	0.17	1		11/04/19 10:16	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 10:16	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 10:16	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 10:16	78-93-3	
Carbon disulfide	**10.1**	ug/L	5.0	0.16	1		11/04/19 10:16	75-15-0	
Carbon tetrachloride	**2.2**	ug/L	1.0	0.084	1		11/04/19 10:16	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 10:16	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 10:16	75-00-3	
Chloroform	**11.9**	ug/L	1.0	0.10	1		11/04/19 10:16	67-66-3	
Chloromethane	**0.83J**	ug/L	1.0	0.16	1		11/04/19 10:16	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 10:16	124-48-1	
1,1-Dichloroethane	**7.7**	ug/L	1.0	0.097	1		11/04/19 10:16	75-34-3	
1,2-Dichloroethane	**0.29J**	ug/L	1.0	0.14	1		11/04/19 10:16	107-06-2	
1,1-Dichloroethene	**77.6**	ug/L	1.0	0.22	1		11/04/19 10:16	75-35-4	
cis-1,2-Dichloroethene	**101**	ug/L	1.0	0.17	1		11/04/19 10:16	156-59-2	
trans-1,2-Dichloroethene	**11.0**	ug/L	1.0	0.17	1		11/04/19 10:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 10:16	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 10:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 10:16	10061-02-6	
Ethylbenzene	**0.19J**	ug/L	1.0	0.12	1		11/04/19 10:16	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 10:16	591-78-6	
Methylene Chloride	**1.8**	ug/L	1.0	0.27	1		11/04/19 10:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 10:16	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 10:16	100-42-5	
1,1,2,2-Tetrachloroethane	**4.3**	ug/L	1.0	0.31	1		11/04/19 10:16	79-34-5	
Tetrachloroethene	**8.5**	ug/L	1.0	0.22	1		11/04/19 10:16	127-18-4	
Toluene	**5.3**	ug/L	1.0	0.14	1		11/04/19 10:16	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	2000	240	2000		11/05/19 18:16	71-55-6	
1,1,2-Trichloroethane	**2.8**	ug/L	1.0	0.10	1		11/04/19 10:16	79-00-5	
Trichloroethene	**74500**	ug/L	2000	340	2000		11/05/19 18:16	79-01-6	
Vinyl chloride	**4.8**	ug/L	1.0	0.11	1		11/04/19 10:16	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 10:16	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		11/04/19 10:16	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/04/19 10:16	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		11/04/19 10:16	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 10:16		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: DUP-10-201910 **Lab ID: 60319241029** Collected: 10/24/19 09:50 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 10:30	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 10:30	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 10:30	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 10:30	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 10:30	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 10:30	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 10:30	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 10:30	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 10:30	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 10:30	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 10:30	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 10:30	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 10:30	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 10:30	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 10:30	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/04/19 10:30	75-35-4	
cis-1,2-Dichloroethene	**0.31J**	ug/L	1.0	0.17	1		11/04/19 10:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 10:30	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 10:30	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 10:30	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 10:30	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 10:30	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 10:30	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 10:30	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 10:30	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 10:30	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 10:30	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 10:30	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 10:30	108-88-3	
1,1,1-Trichloroethane	**0.20J**	ug/L	1.0	0.12	1		11/04/19 10:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 10:30	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/05/19 15:25	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 10:30	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 10:30	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/04/19 10:30	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/04/19 10:30	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/04/19 10:30	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 10:30		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: EB-04-201910 **Lab ID: 60319241030** Collected: 10/24/19 16:45 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/02/19 04:49	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/02/19 04:49	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/02/19 04:49	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/02/19 04:49	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/02/19 04:49	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/02/19 04:49	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/02/19 04:49	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/02/19 04:49	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/02/19 04:49	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/02/19 04:49	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/02/19 04:49	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/02/19 04:49	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/02/19 04:49	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/02/19 04:49	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/02/19 04:49	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/02/19 04:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 04:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 04:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/02/19 04:49	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/02/19 04:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/02/19 04:49	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/02/19 04:49	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/02/19 04:49	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/02/19 04:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/02/19 04:49	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/02/19 04:49	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/02/19 04:49	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/02/19 04:49	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/02/19 04:49	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/02/19 04:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/02/19 04:49	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 04:49	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/02/19 04:49	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/02/19 04:49	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/02/19 04:49	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	77-122		1		11/02/19 04:49	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/02/19 04:49	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/02/19 04:49		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: EB-05-201910 **Lab ID: 60319241031** Collected: 10/24/19 16:50 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/02/19 05:03	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/02/19 05:03	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/02/19 05:03	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/02/19 05:03	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/02/19 05:03	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/02/19 05:03	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/02/19 05:03	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/02/19 05:03	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/02/19 05:03	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/02/19 05:03	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/02/19 05:03	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/02/19 05:03	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/02/19 05:03	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/02/19 05:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/02/19 05:03	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/02/19 05:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 05:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 05:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/02/19 05:03	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/02/19 05:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/02/19 05:03	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/02/19 05:03	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/02/19 05:03	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/02/19 05:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/02/19 05:03	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/02/19 05:03	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/02/19 05:03	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/02/19 05:03	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/02/19 05:03	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/02/19 05:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/02/19 05:03	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 05:03	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/02/19 05:03	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/02/19 05:03	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/02/19 05:03	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/02/19 05:03	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		11/02/19 05:03	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/02/19 05:03		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-179-201910 **Lab ID: 60319241032** Collected: 10/24/19 15:50 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/02/19 05:18	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/02/19 05:18	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/02/19 05:18	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/02/19 05:18	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/02/19 05:18	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/02/19 05:18	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/02/19 05:18	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/02/19 05:18	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/02/19 05:18	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/02/19 05:18	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/02/19 05:18	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/02/19 05:18	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/02/19 05:18	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/02/19 05:18	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/02/19 05:18	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/02/19 05:18	75-35-4	
cis-1,2-Dichloroethene	**0.74J**	ug/L	1.0	0.17	1		11/02/19 05:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 05:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/02/19 05:18	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/02/19 05:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/02/19 05:18	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/02/19 05:18	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/02/19 05:18	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/02/19 05:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/02/19 05:18	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/02/19 05:18	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/02/19 05:18	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/02/19 05:18	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/02/19 05:18	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/02/19 05:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/02/19 05:18	79-00-5	
Trichloroethene	**23.7**	ug/L	1.0	0.17	1		11/02/19 05:18	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/02/19 05:18	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/02/19 05:18	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		11/02/19 05:18	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	77-122		1		11/02/19 05:18	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/02/19 05:18	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/02/19 05:18		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: TB-06-201910 **Lab ID: 60319241033** Collected: 10/24/19 17:40 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/02/19 02:55	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/02/19 02:55	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/02/19 02:55	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/02/19 02:55	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/02/19 02:55	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/02/19 02:55	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/02/19 02:55	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/02/19 02:55	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/02/19 02:55	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/02/19 02:55	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/02/19 02:55	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/02/19 02:55	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/02/19 02:55	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/02/19 02:55	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/02/19 02:55	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/02/19 02:55	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 02:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 02:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/02/19 02:55	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/02/19 02:55	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/02/19 02:55	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/02/19 02:55	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/02/19 02:55	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/02/19 02:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/02/19 02:55	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/02/19 02:55	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/02/19 02:55	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/02/19 02:55	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/02/19 02:55	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/02/19 02:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/02/19 02:55	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 02:55	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/02/19 02:55	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/02/19 02:55	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/02/19 02:55	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		11/02/19 02:55	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/02/19 02:55	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/02/19 02:55		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: TB-07-201910 **Lab ID: 60319241034** Collected: 10/24/19 17:45 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/02/19 03:09	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/02/19 03:09	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/02/19 03:09	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/02/19 03:09	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/02/19 03:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/02/19 03:09	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/02/19 03:09	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/02/19 03:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/02/19 03:09	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/02/19 03:09	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/02/19 03:09	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/02/19 03:09	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/02/19 03:09	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/02/19 03:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/02/19 03:09	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/02/19 03:09	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 03:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 03:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/02/19 03:09	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/02/19 03:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/02/19 03:09	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/02/19 03:09	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/02/19 03:09	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/02/19 03:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/02/19 03:09	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/02/19 03:09	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/02/19 03:09	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/02/19 03:09	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/02/19 03:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/02/19 03:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/02/19 03:09	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 03:09	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/02/19 03:09	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/02/19 03:09	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	97	%	80-120		1		11/02/19 03:09	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/02/19 03:09	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/02/19 03:09	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/02/19 03:09		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Sample: TB-08-201910 **Lab ID: 60319241035** Collected: 10/24/19 17:50 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/02/19 03:23	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/02/19 03:23	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/02/19 03:23	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/02/19 03:23	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/02/19 03:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/02/19 03:23	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/02/19 03:23	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/02/19 03:23	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/02/19 03:23	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/02/19 03:23	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/02/19 03:23	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/02/19 03:23	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/02/19 03:23	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/02/19 03:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/02/19 03:23	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/02/19 03:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 03:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 03:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/02/19 03:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/02/19 03:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/02/19 03:23	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/02/19 03:23	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/02/19 03:23	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/02/19 03:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/02/19 03:23	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/02/19 03:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/02/19 03:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/02/19 03:23	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/02/19 03:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/02/19 03:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/02/19 03:23	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 03:23	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/02/19 03:23	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/02/19 03:23	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/02/19 03:23	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	77-122		1		11/02/19 03:23	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/02/19 03:23	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/02/19 03:23		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 618695 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006

METHOD BLANK: 2524474 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	14.0	10/29/19 14:15	

LABORATORY CONTROL SAMPLE: 2524475

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	10100	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2524476 2524477

Parameter	Units	60319292002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	0.11 mg/L	10000	10000	9790	9650	97	95	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619619 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006, 60319241007, 60319241008, 60319241009

METHOD BLANK: 2527137 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006, 60319241007, 60319241008, 60319241009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/01/19 14:17	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/01/19 14:17	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/01/19 14:17	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/01/19 14:17	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/01/19 14:17	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/01/19 14:17	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/01/19 14:17	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/01/19 14:17	
2-Hexanone	ug/L	ND	10.0	1.0	11/01/19 14:17	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/01/19 14:17	
Acetone	ug/L	ND	10.0	3.3	11/01/19 14:17	
Benzene	ug/L	ND	1.0	0.079	11/01/19 14:17	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/01/19 14:17	
Bromoform	ug/L	ND	1.0	0.21	11/01/19 14:17	
Bromomethane	ug/L	ND	5.0	0.32	11/01/19 14:17	
Carbon disulfide	ug/L	ND	5.0	0.16	11/01/19 14:17	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/01/19 14:17	
Chlorobenzene	ug/L	ND	1.0	0.13	11/01/19 14:17	
Chloroethane	ug/L	ND	1.0	0.42	11/01/19 14:17	
Chloroform	ug/L	ND	1.0	0.10	11/01/19 14:17	
Chloromethane	ug/L	ND	1.0	0.16	11/01/19 14:17	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/01/19 14:17	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/01/19 14:17	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/01/19 14:17	
Ethylbenzene	ug/L	ND	1.0	0.12	11/01/19 14:17	
Methylene Chloride	ug/L	ND	1.0	0.27	11/01/19 14:17	
Styrene	ug/L	ND	1.0	0.15	11/01/19 14:17	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/01/19 14:17	
Toluene	ug/L	ND	1.0	0.14	11/01/19 14:17	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/01/19 14:17	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/01/19 14:17	
Trichloroethene	ug/L	ND	1.0	0.17	11/01/19 14:17	
Vinyl chloride	ug/L	ND	1.0	0.11	11/01/19 14:17	
Xylene (Total)	ug/L	ND	3.0	0.34	11/01/19 14:17	
1,2-Dichloroethane-d4 (S)	%	98	77-122		11/01/19 14:17	
4-Bromofluorobenzene (S)	%	101	80-120		11/01/19 14:17	
Toluene-d8 (S)	%	102	80-120		11/01/19 14:17	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

LABORATORY CONTROL SAMPLE: 2527138

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.2	101	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	20.1	100	71-122	
1,1,2-Trichloroethane	ug/L	20	20.1	101	76-123	
1,1-Dichloroethane	ug/L	20	20.9	105	78-117	
1,1-Dichloroethene	ug/L	20	22.7	114	74-122	
1,2-Dichloroethane	ug/L	20	20.3	102	73-120	
1,2-Dichloropropane	ug/L	20	20.3	101	78-115	
2-Butanone (MEK)	ug/L	100	103	103	54-133	
2-Hexanone	ug/L	100	100	100	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	108	108	62-130	
Acetone	ug/L	100	95.6	96	54-130	
Benzene	ug/L	20	19.8	99	80-120	
Bromodichloromethane	ug/L	20	19.1	95	78-121	
Bromoform	ug/L	20	16.1	81	62-137	
Bromomethane	ug/L	20	22.3	112	41-145	
Carbon disulfide	ug/L	20	20.1	101	64-119	
Carbon tetrachloride	ug/L	20	19.9	99	77-122	
Chlorobenzene	ug/L	20	20.2	101	80-123	
Chloroethane	ug/L	20	21.0	105	60-146	
Chloroform	ug/L	20	21.5	107	81-116	
Chloromethane	ug/L	20	22.3	112	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.1	100	80-120	
cis-1,3-Dichloropropene	ug/L	20	19.2	96	78-118	
Dibromochloromethane	ug/L	20	17.5	87	73-128	
Ethylbenzene	ug/L	20	19.9	100	80-120	
Methylene Chloride	ug/L	20	21.6	108	80-126	
Styrene	ug/L	20	19.5	98	85-120	
Tetrachloroethene	ug/L	20	18.7	93	77-121	
Toluene	ug/L	20	19.3	96	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.5	98	80-120	
trans-1,3-Dichloropropene	ug/L	20	16.9	85	76-123	
Trichloroethene	ug/L	20	22.2	111	80-121	
Vinyl chloride	ug/L	20	20.9	105	46-162	
Xylene (Total)	ug/L	60	59.7	100	80-120	
1,2-Dichloroethane-d4 (S)	%			106	77-122	
4-Bromofluorobenzene (S)	%			96	80-120	
Toluene-d8 (S)	%			98	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619753 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319241010, 60319241011, 60319241012, 60319241013, 60319241014, 60319241015, 60319241016, 60319241017, 60319241018, 60319241019, 60319241020, 60319241021, 60319241022, 60319241023, 60319241024, 60319241025, 60319241026, 60319241027, 60319241028, 60319241029

METHOD BLANK: 2527618 Matrix: Water
Associated Lab Samples: 60319241010, 60319241011, 60319241012, 60319241013, 60319241014, 60319241015, 60319241016, 60319241017, 60319241018, 60319241019, 60319241020, 60319241021, 60319241022, 60319241023, 60319241024, 60319241025, 60319241026, 60319241027, 60319241028, 60319241029

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/04/19 07:53	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/04/19 07:53	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/04/19 07:53	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/04/19 07:53	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/04/19 07:53	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/04/19 07:53	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/04/19 07:53	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/04/19 07:53	
2-Hexanone	ug/L	ND	10.0	1.0	11/04/19 07:53	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/04/19 07:53	
Acetone	ug/L	ND	10.0	3.3	11/04/19 07:53	
Benzene	ug/L	ND	1.0	0.079	11/04/19 07:53	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/04/19 07:53	
Bromoform	ug/L	ND	1.0	0.21	11/04/19 07:53	
Bromomethane	ug/L	ND	5.0	0.32	11/04/19 07:53	
Carbon disulfide	ug/L	ND	5.0	0.16	11/04/19 07:53	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/04/19 07:53	
Chlorobenzene	ug/L	ND	1.0	0.13	11/04/19 07:53	
Chloroethane	ug/L	ND	1.0	0.42	11/04/19 07:53	
Chloroform	ug/L	ND	1.0	0.10	11/04/19 07:53	
Chloromethane	ug/L	ND	1.0	0.16	11/04/19 07:53	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/04/19 07:53	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/04/19 07:53	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/04/19 07:53	
Ethylbenzene	ug/L	ND	1.0	0.12	11/04/19 07:53	
Methylene Chloride	ug/L	ND	1.0	0.27	11/04/19 07:53	
Styrene	ug/L	ND	1.0	0.15	11/04/19 07:53	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/04/19 07:53	
Toluene	ug/L	ND	1.0	0.14	11/04/19 07:53	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/04/19 07:53	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/04/19 07:53	
Trichloroethene	ug/L	ND	1.0	0.17	11/04/19 07:53	
Vinyl chloride	ug/L	ND	1.0	0.11	11/04/19 07:53	
Xylene (Total)	ug/L	ND	3.0	0.34	11/04/19 07:53	
1,2-Dichloroethane-d4 (S)	%	101	77-122		11/04/19 07:53	
4-Bromofluorobenzene (S)	%	100	80-120		11/04/19 07:53	
Toluene-d8 (S)	%	100	80-120		11/04/19 07:53	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

LABORATORY CONTROL SAMPLE: 2527619

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.6	103	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	20.4	102	71-122	
1,1,2-Trichloroethane	ug/L	20	20.6	103	76-123	
1,1-Dichloroethane	ug/L	20	21.0	105	78-117	
1,1-Dichloroethene	ug/L	20	22.2	111	74-122	
1,2-Dichloroethane	ug/L	20	19.8	99	73-120	
1,2-Dichloropropane	ug/L	20	21.3	106	78-115	
2-Butanone (MEK)	ug/L	100	99.4	99	54-133	
2-Hexanone	ug/L	100	97.0	97	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	102	102	62-130	
Acetone	ug/L	100	89.3	89	54-130	
Benzene	ug/L	20	20.6	103	80-120	
Bromodichloromethane	ug/L	20	19.2	96	78-121	
Bromoform	ug/L	20	18.0	90	62-137	
Bromomethane	ug/L	20	22.5	112	41-145	
Carbon disulfide	ug/L	20	20.5	103	64-119	
Carbon tetrachloride	ug/L	20	20.9	104	77-122	
Chlorobenzene	ug/L	20	20.2	101	80-123	
Chloroethane	ug/L	20	20.8	104	60-146	
Chloroform	ug/L	20	21.1	106	81-116	
Chloromethane	ug/L	20	21.6	108	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.1	100	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.1	100	78-118	
Dibromochloromethane	ug/L	20	18.0	90	73-128	
Ethylbenzene	ug/L	20	19.8	99	80-120	
Methylene Chloride	ug/L	20	21.2	106	80-126	
Styrene	ug/L	20	19.9	99	85-120	
Tetrachloroethene	ug/L	20	20.0	100	77-121	
Toluene	ug/L	20	19.9	99	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.9	99	80-120	
trans-1,3-Dichloropropene	ug/L	20	17.8	89	76-123	
Trichloroethene	ug/L	20	22.3	112	80-121	
Vinyl chloride	ug/L	20	21.1	106	46-162	
Xylene (Total)	ug/L	60	60.8	101	80-120	
1,2-Dichloroethane-d4 (S)	%			98	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619801 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319241030, 60319241031, 60319241032, 60319241033, 60319241034, 60319241035

METHOD BLANK: 2527747 Matrix: Water
Associated Lab Samples: 60319241030, 60319241031, 60319241032, 60319241033, 60319241034, 60319241035

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/02/19 02:12	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/02/19 02:12	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/02/19 02:12	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/02/19 02:12	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/02/19 02:12	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/02/19 02:12	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/02/19 02:12	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/02/19 02:12	
2-Hexanone	ug/L	ND	10.0	1.0	11/02/19 02:12	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/02/19 02:12	
Acetone	ug/L	ND	10.0	3.3	11/02/19 02:12	
Benzene	ug/L	ND	1.0	0.079	11/02/19 02:12	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/02/19 02:12	
Bromoform	ug/L	ND	1.0	0.21	11/02/19 02:12	
Bromomethane	ug/L	ND	5.0	0.32	11/02/19 02:12	
Carbon disulfide	ug/L	ND	5.0	0.16	11/02/19 02:12	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/02/19 02:12	
Chlorobenzene	ug/L	ND	1.0	0.13	11/02/19 02:12	
Chloroethane	ug/L	ND	1.0	0.42	11/02/19 02:12	
Chloroform	ug/L	ND	1.0	0.10	11/02/19 02:12	
Chloromethane	ug/L	ND	1.0	0.16	11/02/19 02:12	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/02/19 02:12	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/02/19 02:12	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/02/19 02:12	
Ethylbenzene	ug/L	ND	1.0	0.12	11/02/19 02:12	
Methylene Chloride	ug/L	ND	1.0	0.27	11/02/19 02:12	
Styrene	ug/L	ND	1.0	0.15	11/02/19 02:12	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/02/19 02:12	
Toluene	ug/L	ND	1.0	0.14	11/02/19 02:12	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/02/19 02:12	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/02/19 02:12	
Trichloroethene	ug/L	ND	1.0	0.17	11/02/19 02:12	
Vinyl chloride	ug/L	ND	1.0	0.11	11/02/19 02:12	
Xylene (Total)	ug/L	ND	3.0	0.34	11/02/19 02:12	
1,2-Dichloroethane-d4 (S)	%	101	77-122		11/02/19 02:12	
4-Bromofluorobenzene (S)	%	100	80-120		11/02/19 02:12	
Toluene-d8 (S)	%	100	80-120		11/02/19 02:12	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

LABORATORY CONTROL SAMPLE: 2527748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.6	98	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	18.7	94	71-122	
1,1,2-Trichloroethane	ug/L	20	20.3	102	76-123	
1,1-Dichloroethane	ug/L	20	20.3	102	78-117	
1,1-Dichloroethene	ug/L	20	22.8	114	74-122	
1,2-Dichloroethane	ug/L	20	19.6	98	73-120	
1,2-Dichloropropane	ug/L	20	20.7	104	78-115	
2-Butanone (MEK)	ug/L	100	100	100	54-133	
2-Hexanone	ug/L	100	94.8	95	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	103	103	62-130	
Acetone	ug/L	100	84.1	84	54-130	
Benzene	ug/L	20	20.2	101	80-120	
Bromodichloromethane	ug/L	20	18.3	92	78-121	
Bromoform	ug/L	20	15.6	78	62-137	
Bromomethane	ug/L	20	21.2	106	41-145	
Carbon disulfide	ug/L	20	19.7	99	64-119	
Carbon tetrachloride	ug/L	20	19.5	98	77-122	
Chlorobenzene	ug/L	20	20.1	101	80-123	
Chloroethane	ug/L	20	20.5	103	60-146	
Chloroform	ug/L	20	21.0	105	81-116	
Chloromethane	ug/L	20	21.2	106	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.3	96	80-120	
cis-1,3-Dichloropropene	ug/L	20	18.4	92	78-118	
Dibromochloromethane	ug/L	20	17.4	87	73-128	
Ethylbenzene	ug/L	20	19.4	97	80-120	
Methylene Chloride	ug/L	20	21.7	108	80-126	
Styrene	ug/L	20	19.4	97	85-120	
Tetrachloroethene	ug/L	20	19.1	95	77-121	
Toluene	ug/L	20	19.5	98	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.1	96	80-120	
trans-1,3-Dichloropropene	ug/L	20	16.6	83	76-123	
Trichloroethene	ug/L	20	24.0	120	80-121	
Vinyl chloride	ug/L	20	20.8	104	46-162	
Xylene (Total)	ug/L	60	58.1	97	80-120	
1,2-Dichloroethane-d4 (S)	%			101	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			98	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 620343 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319241008, 60319241011, 60319241016, 60319241017, 60319241020, 60319241021, 60319241027, 60319241028, 60319241029

METHOD BLANK: 2529674 Matrix: Water
Associated Lab Samples: 60319241008, 60319241011, 60319241016, 60319241017, 60319241020, 60319241021, 60319241027, 60319241028, 60319241029

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/05/19 14:42	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/05/19 14:42	
Trichloroethene	ug/L	ND	1.0	0.17	11/05/19 14:42	
1,2-Dichloroethane-d4 (S)	%	99	77-122		11/05/19 14:42	
4-Bromofluorobenzene (S)	%	99	80-120		11/05/19 14:42	
Toluene-d8 (S)	%	101	80-120		11/05/19 14:42	

LABORATORY CONTROL SAMPLE: 2529675

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.5	97	79-120	
cis-1,2-Dichloroethene	ug/L	20	18.8	94	80-120	
Trichloroethene	ug/L	20	21.8	109	80-121	
1,2-Dichloroethane-d4 (S)	%			100	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 620685 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319241005, 60319241006, 60319241010, 60319241022

METHOD BLANK: 2530997 Matrix: Water
Associated Lab Samples: 60319241005, 60319241006, 60319241010, 60319241022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/06/19 12:12	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.23	11/06/19 12:12	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/06/19 12:12	
1,1-Dichloroethane	ug/L	ND	1.0	0.12	11/06/19 12:12	
1,1-Dichloroethene	ug/L	ND	1.0	0.14	11/06/19 12:12	
1,2-Dichloroethane	ug/L	ND	1.0	0.33	11/06/19 12:12	
1,2-Dichloropropane	ug/L	ND	1.0	0.14	11/06/19 12:12	
2-Butanone (MEK)	ug/L	ND	10.0	1.8	11/06/19 12:12	
2-Hexanone	ug/L	ND	10.0	1.6	11/06/19 12:12	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	1.3	11/06/19 12:12	
Acetone	ug/L	ND	10.0	7.4	11/06/19 12:12	
Benzene	ug/L	ND	1.0	0.13	11/06/19 12:12	
Bromodichloromethane	ug/L	ND	1.0	0.14	11/06/19 12:12	
Bromoform	ug/L	ND	1.0	0.28	11/06/19 12:12	
Bromomethane	ug/L	ND	5.0	2.8	11/06/19 12:12	
Carbon disulfide	ug/L	ND	5.0	0.086	11/06/19 12:12	
Carbon tetrachloride	ug/L	ND	1.0	0.070	11/06/19 12:12	
Chlorobenzene	ug/L	ND	1.0	0.17	11/06/19 12:12	
Chloroethane	ug/L	ND	1.0	0.83	11/06/19 12:12	
Chloroform	ug/L	ND	1.0	0.25	11/06/19 12:12	
Chloromethane	ug/L	ND	1.0	0.51	11/06/19 12:12	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.18	11/06/19 12:12	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.18	11/06/19 12:12	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/06/19 12:12	
Ethylbenzene	ug/L	ND	1.0	0.20	11/06/19 12:12	
Methylene Chloride	ug/L	ND	1.0	0.35	11/06/19 12:12	
Styrene	ug/L	ND	1.0	0.19	11/06/19 12:12	
Tetrachloroethene	ug/L	ND	1.0	0.14	11/06/19 12:12	
Toluene	ug/L	ND	1.0	0.17	11/06/19 12:12	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.082	11/06/19 12:12	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.18	11/06/19 12:12	
Vinyl chloride	ug/L	ND	1.0	0.17	11/06/19 12:12	
Xylene (Total)	ug/L	ND	3.0	0.42	11/06/19 12:12	
1,2-Dichloroethane-d4 (S)	%	100	77-122		11/06/19 12:12	
4-Bromofluorobenzene (S)	%	89	80-120		11/06/19 12:12	
Toluene-d8 (S)	%	100	80-120		11/06/19 12:12	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

LABORATORY CONTROL SAMPLE: 2530998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.4	102	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.2	96	71-122	
1,1,2-Trichloroethane	ug/L	20	22.3	112	76-123	
1,1-Dichloroethane	ug/L	20	20.7	104	78-117	
1,1-Dichloroethene	ug/L	20	21.2	106	74-122	
1,2-Dichloroethane	ug/L	20	20.5	102	73-120	
1,2-Dichloropropane	ug/L	20	20.8	104	78-115	
2-Butanone (MEK)	ug/L	100	104	104	54-133	
2-Hexanone	ug/L	100	108	108	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	110	110	62-130	
Acetone	ug/L	100	105	105	54-130	
Benzene	ug/L	20	20.4	102	80-120	
Bromodichloromethane	ug/L	20	20.7	104	78-121	
Bromoform	ug/L	20	22.9	114	62-137	
Bromomethane	ug/L	20	15.4	77	41-145	
Carbon disulfide	ug/L	20	21.5	108	64-119	
Carbon tetrachloride	ug/L	20	21.2	106	77-122	
Chlorobenzene	ug/L	20	21.3	106	80-123	
Chloroethane	ug/L	20	21.6	108	60-146	
Chloroform	ug/L	20	20.0	100	81-116	
Chloromethane	ug/L	20	24.7	123	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.7	103	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.7	104	78-118	
Dibromochloromethane	ug/L	20	21.9	110	73-128	
Ethylbenzene	ug/L	20	22.3	112	80-120	
Methylene Chloride	ug/L	20	23.1	115	80-126	
Styrene	ug/L	20	21.0	105	85-120	
Tetrachloroethene	ug/L	20	22.0	110	77-121	
Toluene	ug/L	20	20.4	102	80-120	
trans-1,2-Dichloroethene	ug/L	20	20.2	101	80-120	
trans-1,3-Dichloropropene	ug/L	20	19.6	98	76-123	
Vinyl chloride	ug/L	20	21.6	108	46-162	
Xylene (Total)	ug/L	60	66.4	111	80-120	
1,2-Dichloroethane-d4 (S)	%			103	77-122	
4-Bromofluorobenzene (S)	%			91	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619293
QC Batch Method: SM 4500-S-2 D
Analysis Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60319241005, 60319241006

METHOD BLANK: 2526229 Matrix: Water
Associated Lab Samples: 60319241005, 60319241006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	0.039	10/30/19 14:44	

LABORATORY CONTROL SAMPLE: 2526230

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.50	100	80-120	

MATRIX SPIKE SAMPLE: 2526231

Parameter	Units	60319241005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.5	0.50	99	75-125	

SAMPLE DUPLICATE: 2526232

Parameter	Units	60319468001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 620357 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241006

METHOD BLANK: 2529754 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	11/07/19 02:15	
Sulfate	mg/L	ND	1.0	0.23	11/07/19 02:15	

LABORATORY CONTROL SAMPLE: 2529755

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	
Sulfate	mg/L	5	5.2	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2529756 2529757

Parameter	Units	60319241001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	26.0	10	10	37.3	37.3	113	113	80-120	0	15	
Sulfate	mg/L	10.4	5	5	16.0	15.9	110	109	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 620925
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60319241005

METHOD BLANK: 2531883 Matrix: Water
Associated Lab Samples: 60319241005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	0.23	11/08/19 09:31	

LABORATORY CONTROL SAMPLE: 2531884

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.3	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2531885 2531886

Parameter	Units	60319214001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	310	250	250	566	564	102	102	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 618401
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 60319241005, 60319241006

METHOD BLANK: 2523313 Matrix: Water
Associated Lab Samples: 60319241005, 60319241006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	0.067	10/25/19 15:26	
Nitrogen, Nitrite	mg/L	ND	0.10	0.067	10/25/19 15:26	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	10/25/19 15:26	

LABORATORY CONTROL SAMPLE: 2523314

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	1.0	100	70-130	
Nitrogen, Nitrite	mg/L	1	1.1	106	90-110	
Nitrogen, NO2 plus NO3	mg/L	2	2.1	103	90-110	

MATRIX SPIKE SAMPLE: 2523315

Parameter	Units	60319241005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	0.20	1	1.1	93	70-130	
Nitrogen, Nitrite	mg/L	ND	1	1.2	113	90-110	M1
Nitrogen, NO2 plus NO3	mg/L	0.20	2	2.3	106	90-110	

SAMPLE DUPLICATE: 2523316

Parameter	Units	60319261001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	4.2	4.2	0	20	
Nitrogen, Nitrite	mg/L	ND	ND		20	
Nitrogen, NO2 plus NO3	mg/L	4.2	4.2	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619108 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004

METHOD BLANK: 2525611 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	10/30/19 09:51	

LABORATORY CONTROL SAMPLE: 2525612

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2	2.0	99	90-110	

MATRIX SPIKE SAMPLE: 2525613

Parameter	Units	60319076002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	0.32	2	2.2	95	90-110	

MATRIX SPIKE SAMPLE: 2525615

Parameter	Units	60319190001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	3.9	2	4.2	14	90-110	M1

SAMPLE DUPLICATE: 2525614

Parameter	Units	60319076004 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619790 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006

METHOD BLANK: 2527704 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	11/01/19 16:02	

LABORATORY CONTROL SAMPLE: 2527705

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.5	110	80-120	

MATRIX SPIKE SAMPLE: 2527706

Parameter	Units	60319130005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	7.8	5	12.7	99	80-120	

SAMPLE DUPLICATE: 2527707

Parameter	Units	60319241001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	0.56J	0.55J		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619520 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60319241001, 60319241002

METHOD BLANK: 2526889 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	0.30J	1.0	0.29	10/31/19 22:45	

LABORATORY CONTROL SAMPLE: 2526890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.5	111	80-120	

MATRIX SPIKE SAMPLE: 2526891

Parameter	Units	60319115044 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	203	125	329	101	80-120	

SAMPLE DUPLICATE: 2526892

Parameter	Units	60319115061 Result	Dup Result	RPD	Max RPD	Qualifiers
Dissolved Organic Carbon	mg/L	0.81J	0.78J		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619793 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60319241003, 60319241004

METHOD BLANK: 2527711 Matrix: Water
Associated Lab Samples: 60319241003, 60319241004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.29	11/01/19 22:28	

LABORATORY CONTROL SAMPLE: 2527712

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.7	113	80-120	

MATRIX SPIKE SAMPLE: 2527713

Parameter	Units	10497396001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	2.9	5	8.5	112	80-120	

SAMPLE DUPLICATE: 2527714

Parameter	Units	60319241004 Result	Dup Result	RPD	Max RPD	Qualifiers
Dissolved Organic Carbon	mg/L	39.3	39.2	0	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 619619	
[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 619753	
[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 619801	
[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 620343	
[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 620685	
[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1e	Sample was analyzed at a 5x dilution which resulted in a non-dection. Sample was re-analyzed at a 1x dilution and the result matched the initial run.
B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319241001	TMW-34-201910	EPA 3010	618695	EPA 6010	618728
60319241002	TMW-32-201910	EPA 3010	618695	EPA 6010	618728
60319241003	MW-186-201910	EPA 3010	618695	EPA 6010	618728
60319241004	TMW-25-201910	EPA 3010	618695	EPA 6010	618728
60319241005	IW-147-201910	EPA 3010	618695	EPA 6010	618728
60319241006	MW-95-201910	EPA 3010	618695	EPA 6010	618728
60319241001	TMW-34-201910	EPA 5030B/8260	619619		
60319241002	TMW-32-201910	EPA 5030B/8260	619619		
60319241003	MW-186-201910	EPA 5030B/8260	619619		
60319241004	TMW-25-201910	EPA 5030B/8260	619619		
60319241005	IW-147-201910	EPA 5030B/8260	619619		
60319241005	IW-147-201910	EPA 5030B/8260	620685		
60319241006	MW-95-201910	EPA 5030B/8260	619619		
60319241006	MW-95-201910	EPA 5030B/8260	620685		
60319241007	MW-83-201910	EPA 5030B/8260	619619		
60319241008	ITMW-18-201910	EPA 5030B/8260	619619		
60319241008	ITMW-18-201910	EPA 5030B/8260	620343		
60319241009	ITMW-19-201910	EPA 5030B/8260	619619		
60319241010	MW-93-201910	EPA 5030B/8260	619753		
60319241010	MW-93-201910	EPA 5030B/8260	620685		
60319241011	MW-189-201910	EPA 5030B/8260	619753		
60319241011	MW-189-201910	EPA 5030B/8260	620343		
60319241012	TMW-36-201910	EPA 5030B/8260	619753		
60319241013	MW-185-201910	EPA 5030B/8260	619753		
60319241014	MW-27-201910	EPA 5030B/8260	619753		
60319241015	ITMW-2R-201910	EPA 5030B/8260	619753		
60319241016	ITMW-11-201910	EPA 5030B/8260	619753		
60319241016	ITMW-11-201910	EPA 5030B/8260	620343		
60319241017	ITMW-12R-201910	EPA 5030B/8260	619753		
60319241017	ITMW-12R-201910	EPA 5030B/8260	620343		
60319241018	MW-91-201910	EPA 5030B/8260	619753		
60319241019	ITMW-21-201910	EPA 5030B/8260	619753		
60319241020	MW-85R-201910	EPA 5030B/8260	619753		
60319241020	MW-85R-201910	EPA 5030B/8260	620343		
60319241021	IW-134-201910	EPA 5030B/8260	619753		
60319241021	IW-134-201910	EPA 5030B/8260	620343		
60319241022	MW-37-201910	EPA 5030B/8260	619753		
60319241022	MW-37-201910	EPA 5030B/8260	620685		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319241

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319241023	ITMW-16-201910	EPA 5030B/8260	619753		
60319241024	ITMW-10-201910	EPA 5030B/8260	619753		
60319241025	ITMW-5-201910	EPA 5030B/8260	619753		
60319241026	IW-132-201910	EPA 5030B/8260	619753		
60319241027	DUP-08-201910	EPA 5030B/8260	619753		
60319241027	DUP-08-201910	EPA 5030B/8260	620343		
60319241028	DUP-09-201910	EPA 5030B/8260	619753		
60319241028	DUP-09-201910	EPA 5030B/8260	620343		
60319241029	DUP-10-201910	EPA 5030B/8260	619753		
60319241029	DUP-10-201910	EPA 5030B/8260	620343		
60319241030	EB-04-201910	EPA 5030B/8260	619801		
60319241031	EB-05-201910	EPA 5030B/8260	619801		
60319241032	MW-179-201910	EPA 5030B/8260	619801		
60319241033	TB-06-201910	EPA 5030B/8260	619801		
60319241034	TB-07-201910	EPA 5030B/8260	619801		
60319241035	TB-08-201910	EPA 5030B/8260	619801		
60319241005	IW-147-201910	SM 4500-S-2 D	619293		
60319241006	MW-95-201910	SM 4500-S-2 D	619293		
60319241001	TMW-34-201910	EPA 300.0	620357		
60319241002	TMW-32-201910	EPA 300.0	620357		
60319241003	MW-186-201910	EPA 300.0	620357		
60319241004	TMW-25-201910	EPA 300.0	620357		
60319241005	IW-147-201910	EPA 300.0	620925		
60319241006	MW-95-201910	EPA 300.0	620357		
60319241005	IW-147-201910	EPA 353.2	618401		
60319241006	MW-95-201910	EPA 353.2	618401		
60319241001	TMW-34-201910	EPA 353.2	619108		
60319241002	TMW-32-201910	EPA 353.2	619108		
60319241003	MW-186-201910	EPA 353.2	619108		
60319241004	TMW-25-201910	EPA 353.2	619108		
60319241001	TMW-34-201910	SM 5310C	619790		
60319241002	TMW-32-201910	SM 5310C	619790		
60319241003	MW-186-201910	SM 5310C	619790		
60319241004	TMW-25-201910	SM 5310C	619790		
60319241005	IW-147-201910	SM 5310C	619790		
60319241006	MW-95-201910	SM 5310C	619790		
60319241001	TMW-34-201910	SM 5310C	619520		
60319241002	TMW-32-201910	SM 5310C	619520		
60319241003	MW-186-201910	SM 5310C	619793		
60319241004	TMW-25-201910	SM 5310C	619793		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical®

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix ... List Pace Workorder Number or MTJL Log-in

WO# : 60319241

60319241

ALL S...

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller

Site Collection Info/Address: 6400 Jenny Lind Rd. Ft Smith

Customer Project Name/Number:

State: AR County/City: / Time Zone Collected: PT MT CT ET

Phone:
Email: hahlers@ramboll.com

Site/Facility ID #:

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print): Haley Ahlers

Purchase Order #:

DW PWS ID #:

Quote #:

DW Location Code #:

Collected by (signature): Haley Ahlers

Turnaround Date Required: Std

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive ____ [ ] Hold ____

RUSH: Day Next Day Same 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: ____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3 D D 1 U U 2 U O 4 5 U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other BAK

LAB Profile/Line: 7444 Line 1

Analyses

Customer Sample ID	Matrix*	Comp/Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8260 VOC Full List	Methane, Ethane, Ethene (MEE)	Methane, Ethane, Ethene, Acetylene (MEEA)	Metals, Total Iron	Sulfate, Nitrate	Sulfate, Nitrate, Chloride	Total Organic Carbon	Dissolved Organic Carbon	Volatile Fatty Acids (VFA)	Sulfide	Hydrogen	Lab Sample # / Comments
TMW-34-201910	GW	G	10/24/19	1730				12	X	X		X		X	X	X	X			001
TMW-32-201910	↓	↓	↓	1515				↓	↓	↓				↓		↓	↓			002
MW-186-201910	↓	↓	↓	1315				↓	↓	↓				↓		↓	↓			003
TMW-25-201910	↓	↓	↓	1055				↓	↓	↓				↓		↓	↓			004
IW-147-201910	↓	↓	↓	1015				11	↓		X		X					X	X	005
MW-95-201910	↓	↓	↓	1305				↓	↓		↓		↓					↓	↓	006
MW-83-201910	↓	↓	↓	1000				3	↓											007
ITMW-18-201910	↓	↓	↓	1300				↓	↓											008
ITMW-19-201910	↓	↓	↓	1125				↓	↓											009
MW-93-201910	↓	↓	↓	1435				↓	↓											010

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: ____			
Sample pH Acceptable	Y	N	NA
pH Strips: ____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: ____			

60319241

↓ LAB USE ONLY: ↓

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used: Zip Double Bags

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: ____

ACCT #: ____

Template: ____

Prelogin: ____

PM: ____

PB: ____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: ____

Cooler Temp Upon Receipt: T298 oC

Cooler Therm Corr. Factor: 34.14 oC 1.1

Cooler Temp Corrected: +0.0 oC

Comments: 3.4, 1.4 1.1

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 1 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Haley Ahlers/Ramboll	10/24/19 1800	[signature]	10-25-19 0210
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

F-ALL-C-010-rev.00, 05Jul2018

Pace Analytical®

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller

Site Collection Info/Address:

Customer Project Name/Number:

State County/City Time Zone Collected / PT MT CT ET

Phone:
Email:

SEE PAGE 1

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print):

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature):

Turnaround Date Required:

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive _____
[ ] Hold _____

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses: 8260 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60319241

↓ LAB USE ONLY: ↓

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8260 VOC Full List	Lab Sample # / Comments
3 MW-189-201910	GW	G	10/24/19	0932				3	X	011
3 TMW-36-201910	↓	↓	↓	1046				↓	↓	012
1 MW-185-201910	↓	↓	↓	1429				↓	↓	013
3 MW-27-201910	↓	↓	↓	1315				↓	↓	014
3 ITMW-2R-201910	↓	↓	↓	1005				↓	↓	015
3 ITMW-11-201910	↓	↓	↓	1155				↓	↓	7 day hold 016
3 ITMW-12R-201910	↓	↓	↓	1605				↓	↓	017
3 MW-91-201910	↓	↓	↓	1420				↓	↓	018
3 ITMW-21-201910	↓	↓	↓	0925				↓	↓	019
3 MW-85R-201910	↓	↓	↓	1045				↓	↓	020

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 2 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Haley Chenn / Ramboll	10/24/19 1800	[signature] / Pace	10-25-19 0210
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

F-ALL-C-010-rev.00, 05Jul2018

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Container Preservative Type **: 3

Lab Project Manager:

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Copy To: Nick Zurweller

Site Collection Info/Address:

SEE PAGE 1

Customer Project Name/Number:

State / County/City / Time Zone Collected: PT MT CT ET

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print):

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature):

Turnaround Date Required:

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive _____
[ ] Hold _____

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses: 8260 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

6031924l

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
IW-134-201910	GW	G	10/24/19	1205				3	021
MW-37-201910				1530					022
ITMW-16-201910				0950					023
ITMW-10-201910				1135					024
ITMW-5-201910				1305					025
IW-132-201910				1530					026
~~MW-147-201910~~									
~~MW-95-201910~~									
DUP-08-201910				0932					027
DUP-09-201910				1045					028

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Harley Shaw/Ramboll	10/24/19 1800	[illegible]	10/25/19 0210
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 3 of 4

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll | Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight | Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller | Site Collection Info/Address:

Customer Project Name/Number: | State / County/City / Time Zone Collected PT MT CT ET

Phone: | Site/Facility ID # | Compliance Monitoring? [ ] Yes [ ] No

Email:

Collected by (print): SEE PAGE 1 | Purchase Order # | DW PWS ID #:

Quote # | DW Location Code #:

Collected by (signature): | Turnaround Date Required: | Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type ** : 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

Analyses: 8260 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60319241

	Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
3	DUP-10-201910	GW	G	10/24/19	0950				3	029
3	EB-04-201910				1645					030
3	EB-05-201910				1650					031
1	MW-179-201910				1550					032
1	TB-06-201910				1740				2	033
1	TB-07-201910				1745					034
2	TB-05-201910				1750					035

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used: | LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Harley Arlen / Ramboll	10/24/19 1800	[illegible] / Pace	10.25.1920

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 4 of 4

Pace Analytical
www.pacelabs.com

Sample Receiving Non-Conformance Form (NCF)

Date: 9.25.19	Evaluated by: Wcspt / Pac
Client: Ramboll	

Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. If COC is incomplete, check applicable issues below and add details where appropriate:

	Collection date/time missing or incorrect	X	Analyses or analytes: missing or clarification needed		Samples listed on COC do not match samples received (missing, additional, etc.)
	Sample IDs on COC do not match sample labels		Required trip blanks were not received		Required signatures are missing

Comments/Details/Other Issues not listed above:

received BRJN for samples 2 through 6 no test marked for that container

3. Sample integrity issues: check applicable issues below and add details where appropriate:

	Samples: Past holding time		Samples: Condition needs to be brought to lab personnel's attention (details below)		Preservation: Improper
	Samples: Not field filtered		Containers: Broken or compromised		Temperature: not within acceptance criteria (typically 0-6C)
	Samples: Insufficient volume received		Containers: Incorrect		Temperature: Samples arrived frozen
	Samples: Cooler damaged or compromised		Custody Seals: Missing or compromised on samples, trip blanks or coolers		Vials received with improper headspace
	Samples: contain chlorine or sulfides		Packing Material: Insufficient/Improper		Other:

Comments/Details:

Samples 002, 003, & 004 logged for metals (HOLD), as well as TOC (not on hold)

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:	
PM Initials:	Date/Time:	

Client Comments/Instructions:

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 11, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60319241 / WHIRLPOOL**
Pace Workorder: 31953

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, October 29, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/11/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 20

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID	Sample ID	Matrix	Date Collected	Date Received
319530001	TMW-34-201910	Water	10/24/2019 17:30	10/29/2019 11:00
319530002	TMW-32-201910	Water	10/24/2019 15:15	10/29/2019 11:00
319530003	MW-186-201910	Water	10/24/2019 13:15	10/29/2019 11:00
319530004	TMW-25-201910	Water	10/24/2019 10:55	10/29/2019 11:00
319530005	IW-147-201910	Water	10/24/2019 10:15	10/29/2019 11:00
319530006	MW-95-201910	Water	10/24/2019 13:05	10/29/2019 11:00
319530007	IW-147-201910	Bubble Strip	10/24/2019 10:15	10/29/2019 11:00
319530008	MW-95-201910	Bubble Strip	10/24/2019 13:05	10/29/2019 11:00

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31953 60319241 / WHIRLPOOL

Workorder Comments

The container pH for samples 31953 (0001-0006) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530001** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-34-201910** Date Collected: 10/24/2019 17:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**8400**	ug/l	0.50	0.094	1	11/5/2019 11:34	TD	n
Ethane	**0.24**	ug/l	0.10	0.011	1	11/5/2019 11:34	TD	n
Ethene	**<0.10**	ug/l	0.10	0.0080	1	11/5/2019 11:34	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530002** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-32-201910** Date Collected: 10/24/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**8800**	ug/l	0.50	0.094	1	11/5/2019 11:49	TD	n
Ethane	**0.21**	ug/l	0.10	0.011	1	11/5/2019 11:49	TD	n
Ethene	**0.30**	ug/l	0.10	0.0080	1	11/5/2019 11:49	TD	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530003** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **MW-186-201910** Date Collected: 10/24/2019 13:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**12000**	ug/l	0.50	0.094	1	11/5/2019 12:04	TD	n
Ethane	**0.10**	ug/l	0.10	0.011	1	11/5/2019 12:04	TD	n
Ethene	**0.55**	ug/l	0.10	0.0080	1	11/5/2019 12:04	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530004** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-25-201910** Date Collected: 10/24/2019 10:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**12000**	ug/l	0.50	0.094	1	11/5/2019 09:15	TD	n
Ethane	**0.16**	ug/l	0.10	0.011	1	11/5/2019 09:15	TD	n
Ethene	**0.25**	ug/l	0.10	0.0080	1	11/5/2019 09:15	TD	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530005** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **IW-147-201910** Date Collected: 10/24/2019 10:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**37**	ug/l	0.50	0.094	1	11/5/2019 09:30	TD	n
Ethane	**6.5**	ug/l	0.10	0.011	1	11/5/2019 09:30	TD	n
Ethene	**0.28**	ug/l	0.10	0.0080	1	11/5/2019 09:30	TD	n
Acetylene	**3.0**	ug/l	0.50	0.037	1	11/5/2019 09:30	TD	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530006** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **MW-95-201910** Date Collected: 10/24/2019 13:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**4.6**	ug/l	0.50	0.094	1	11/5/2019 09:45	TD	n
Ethane	**0.48**	ug/l	0.10	0.011	1	11/5/2019 09:45	TD	n
Ethene	**<0.10**	ug/l	0.10	0.0080	1	11/5/2019 09:45	TD	n
Acetylene	**<0.50**	ug/l	0.50	0.037	1	11/5/2019 09:45	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530007** Date Received: 10/29/2019 11:00 Matrix: Bubble Strip

Sample ID: **IW-147-201910** Date Collected: 10/24/2019 10:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**7.5**	nM	1.0	0.75	1	10/30/2019 17:25	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530008** Date Received: 10/29/2019 11:00 Matrix: Bubble Strip

Sample ID: **MW-95-201910** Date Collected: 10/24/2019 13:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**2.6**	nM	1.0	0.75	1	10/30/2019 17:37	TD	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31953 60319241 / WHIRLPOOL

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31953 60319241 / WHIRLPOOL

QC Batch: DISG/7883 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319530007, 319530008

METHOD BLANK: 64064

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Hydrogen	nM	<1.0	1.0	n

LABORATORY CONTROL SAMPLE & LCSD: 64065 64066

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Hydrogen	nM	24	25	26	102	108	80-120	5	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31953 60319241 / WHIRLPOOL

QC Batch: DISG/7894 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319530004, 319530005, 319530006

METHOD BLANK: 64156

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n
Acetylene	ug/l	<0.50	0.50	n

LABORATORY CONTROL SAMPLE & LCSD: 64158 64160

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	820	790	110	106	80-120	3.7	20	n
Ethane	ug/l	38	38	38	101	99	80-120	1.1	20	n
Ethene	ug/l	35	36	36	102	101	80-120	1.5	20	n
Acetylene	ug/l	33	32	31	96	94	80-120	2.7	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31953 60319241 / WHIRLPOOL

QC Batch: DISG/7895 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319530001, 319530002, 319530003

METHOD BLANK: 64162

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n

LABORATORY CONTROL SAMPLE & LCSD: 64164 64166

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	840	830	112	111	80-120	1.4	20	n
Ethane	ug/l	38	40	41	106	108	80-120	1.3	20	n
Ethene	ug/l	35	38	39	107	109	80-120	2	20	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 31953 60319241 / WHIRLPOOL

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
319530007	IW-147-201910			AM20GAX	DISG/7883
319530008	MW-95-201910			AM20GAX	DISG/7883
319530004	TMW-25-201910			AM20GAX	DISG/7894
319530005	IW-147-201910			AM20GAX	DISG/7894
319530006	MW-95-201910			AM20GAX	DISG/7894
319530001	TMW-34-201910			AM20GAX	DISG/7895
319530002	TMW-32-201910			AM20GAX	DISG/7895
319530003	MW-186-201910			AM20GAX	DISG/7895

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

2

Chain of Custody

PASI Kansas Laboratory

31953

Pace Analytical®
www.pacelabs.com

Workorder: 60319241 **Workorder Name:** WHIRLPOOL, FORT SMITH AR **Results Requested By:** 11/6/2019

Report / Invoice To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy P.O. Sub 0256

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Unpreserved					Requested Analysis: M/E/E + Acetylene + Hydrogen	M/E/E											LAB USE ONLY
1	TMW-34-201910	10/24/2019 17:30	60319241001	Water	3							X											
2	TMW-32-201910	10/24/2019 15:15	60319241002	Water	3							X											
3	MW-186-201910	10/24/2019 13:15	60319241003	Water	3							X											
4	TMW-25-201910	10/24/2019 10:55	60319241004	Water	3							X											
5	IW-147-201910	10/24/2019 10:15	60319241005	Water	4						X												
6	MW-95-201910	10/24/2019 13:05	60319241006	Water	4						X												

Transfers	Released By	Date/Time	Received By	Date/Time
1	Victor B — Pace	10/28/19 1800	[illegible]	10.29
2				1100
3				

Comments

Cooler Temperature on Receipt 1 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact Y or N

Cooler Receipt Form

Client Name: Pace Project: 60319241 Lab Work Order: 31953

A. **Shipping/Container Information** (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 121929814757

Custody Seal on Cooler/Box Present: (Yes) No Seals Intact: (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 1°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. **Laboratory Assignment/Log-in** (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?		✓		

Comments:_____

Cooler contents examined/received by: CJ Date: 10.29.19

Project Manager Review: ERF Date: 10/29/19

F-PAE-Q-009-rev.01, 3Oct2017

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 11, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60319241 / WHIRLPOOL**
Pace Workorder: 31954

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, October 29, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/11/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 16

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID	Sample ID	Matrix	Date Collected	Date Received
319540001	TMW-34-201910	Water	10/24/2019 17:30	10/29/2019 11:00
319540002	TMW-32-201910	Water	10/24/2019 15:15	10/29/2019 11:00
319540003	MW-186-201910	Water	10/24/2019 13:15	10/29/2019 11:00
319540004	TMW-25-201910	Water	10/24/2019 10:55	10/29/2019 11:00

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31954 60319241 / WHIRLPOOL

Batch Comments

Batch: EDON/4258 - Low Level Volatile Fatty Acids

The matrix spike and/or spike duplicate, recovery or relative percent difference; accuracy influenced by the reference sample 319240001. Analyte iso-Hexanoic acid. Batch acceptance based on laboratory control sample recovery.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID: **319540001** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-34-201910** Date Collected: 10/24/2019 17:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	11/6/2019 09:49	KB	
Acetic Acid	**<0.10**	mg/l	0.10	0.025	1	11/6/2019 09:49	KB	
Propionic Acid	**<0.10**	mg/l	0.10	0.0020	1	11/6/2019 09:49	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.098	1	11/6/2019 09:49	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.0070	1	11/6/2019 09:49	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 09:49	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 09:49	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.011	1	11/6/2019 09:49	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.011	1	11/6/2019 09:49	KB	M5
Hexanoic Acid	**<0.20**	mg/l	0.20	0.032	1	11/6/2019 09:49	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID: **319540002** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-32-201910** Date Collected: 10/24/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	11/6/2019 10:43	KB	
Acetic Acid	**<0.10**	mg/l	0.10	0.025	1	11/6/2019 10:43	KB	
Propionic Acid	**<0.10**	mg/l	0.10	0.0020	1	11/6/2019 10:43	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.098	1	11/6/2019 10:43	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.0070	1	11/6/2019 10:43	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 10:43	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 10:43	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.011	1	11/6/2019 10:43	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.011	1	11/6/2019 10:43	KB	M5
Hexanoic Acid	**<0.20**	mg/l	0.20	0.032	1	11/6/2019 10:43	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID: **319540003** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **MW-186-201910** Date Collected: 10/24/2019 13:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	11/6/2019 11:36	KB	
Acetic Acid	**1.4**	mg/l	0.10	0.025	1	11/6/2019 11:36	KB	
Propionic Acid	**0.46**	mg/l	0.10	0.0020	1	11/6/2019 11:36	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.098	1	11/6/2019 11:36	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.0070	1	11/6/2019 11:36	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 11:36	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 11:36	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.011	1	11/6/2019 11:36	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.011	1	11/6/2019 11:36	KB	M5
Hexanoic Acid	**<0.20**	mg/l	0.20	0.032	1	11/6/2019 11:36	KB	

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID: **319540004** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-25-201910** Date Collected: 10/24/2019 10:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	11/6/2019 12:29	KB	
Acetic Acid	**17**	mg/l	1.0	0.25	10	11/6/2019 23:41	KB	d
Propionic Acid	**27**	mg/l	1.0	0.020	10	11/6/2019 23:41	KB	d
Formic Acid	**0.51**	mg/l	0.50	0.098	1	11/6/2019 12:29	KB	
Butyric Acid	**1.9**	mg/l	0.10	0.0070	1	11/6/2019 12:29	KB	
Pyruvic Acid	**0.64**	mg/l	0.10	0.0050	1	11/6/2019 12:29	KB	
i-Pentanoic Acid	**0.21**	mg/l	0.10	0.0050	1	11/6/2019 12:29	KB	
Pentanoic Acid	**2.1**	mg/l	0.10	0.011	1	11/6/2019 12:29	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.011	1	11/6/2019 12:29	KB	M5
Hexanoic Acid	**0.34**	mg/l	0.20	0.032	1	11/6/2019 12:29	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31954 60319241 / WHIRLPOOL

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
d	The analyte concentration was determined from a dilution.
M5	The matrix spike duplicate sample recovery was outside laboratory control limits.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31954 60319241 / WHIRLPOOL

QC Batch: EDON/4258 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 319540001, 319540002, 319540003, 319540004

METHOD BLANK: 64193

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	
Formic Acid	mg/l	<0.50	0.50	
Butyric Acid	mg/l	<0.10	0.10	
Pyruvic Acid	mg/l	<0.10	0.10	
i-Pentanoic Acid	mg/l	<0.10	0.10	
Pentanoic Acid	mg/l	<0.10	0.10	
i-Hexanoic Acid	mg/l	<0.20	0.20	M5
Hexanoic Acid	mg/l	<0.20	0.20	

LABORATORY CONTROL SAMPLE: 64194

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	2.1	104	70-130	
Acetic Acid	mg/l	2	2.0	99	70-130	
Propionic Acid	mg/l	2	2.0	103	70-130	
Formic Acid	mg/l	2	1.9	94	70-130	
Butyric Acid	mg/l	2	2.0	100	70-130	
Pyruvic Acid	mg/l	2	1.8	92	70-130	
i-Pentanoic Acid	mg/l	2	2.0	99	70-130	
Pentanoic Acid	mg/l	2	2.0	98	70-130	
i-Hexanoic Acid	mg/l	2	2.0	98	70-130	M5
Hexanoic Acid	mg/l	2	1.9	94	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64195 64196 Original: 319240001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
EDonors											
Lactic Acid	mg/l	0.26	2	1.9	2.1	84	90	70-130	6.3	30	
Acetic Acid	mg/l	0.1	2	2.1	2.1	100	100	70-130	0.23	30	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31954 60319241 / WHIRLPOOL

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64195 64196 Original: 319240001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Propionic Acid	mg/l	0.0094	2	2.0	2.0	100	100	70-130	0.21	30	
Formic Acid	mg/l	0.27	2	2.0	2.0	85	86	70-130	1.7	30	
Butyric Acid	mg/l	0.025	2	1.9	2.0	96	98	70-130	2.4	30	
Pyruvic Acid	mg/l	0.061	2	1.7	1.7	81	84	70-130	3.4	30	
i-Pentanoic Acid	mg/l	0.19	2	2.0	2.1	92	94	70-130	1.6	30	
Pentanoic Acid	mg/l	0.018	2	1.8	1.9	91	96	70-130	5.3	30	
i-Hexanoic Acid	mg/l	0	2	1.5	1.4	74	69	70-130	7.6	30	M5
Hexanoic Acid	mg/l	0.023	2	1.6	1.8	77	88	70-130	13	30	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31954 60319241 / WHIRLPOOL

QC Batch: EDON/4265 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 319540004

METHOD BLANK: 64253

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	

LABORATORY CONTROL SAMPLE: 64254

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetic Acid	mg/l	2	2.0	100	70-130	
Propionic Acid	mg/l	2	2.1	105	70-130	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 31954 60319241 / WHIRLPOOL

QUALITY CONTROL PARAMETER QUALIFIERS

M5 The matrix spike duplicate sample recovery was outside laboratory control limits.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
319540001	TMW-34-201910			AM23G	EDON/4258
319540002	TMW-32-201910			AM23G	EDON/4258
319540003	MW-186-201910			AM23G	EDON/4258
319540004	TMW-25-201910			AM23G	EDON/4258
319540004	TMW-25-201910			AM23G	EDON/4265

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

3

Chain of Custody

PASI Kansas Laboratory

31954

Pace Analytical®
www.pacelabs.com

Workorder: 60319241 **Workorder Name:** WHIRLPOOL, FORT SMITH AR **Results Requested By:** 11/6/2019

Report / Invoice To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy Sub P.O. 10257

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Requested Analysis: Volatile Fatty Acids	LAB USE ONLY
1	TMW-34-201910	10/24/2019 17:30	60319241001	Water	2	X	
2	TMW-32-201910	10/24/2019 15:15	60319241002	Water	2	X	
3	MW-186-201910	10/24/2019 13:15	60319241003	Water	2	X	
4	TMW-25-201910	10/24/2019 10:55	60319241004	Water	2	X	
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	10/28/19 1800	[signature] PHES	10.29 1100
2				
3				

Comments: send 2 x 40ml vial BAK

Cooler Temperature on Receipt 2 °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

Cooler Receipt Form

Client Name: Pace Project: 6031924 Lab Work Order: 31954

A. **Shipping/Container Information** (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ **Air bill Present:** (Yes) No

Tracking Number: 121929814757

Custody Seal on Cooler/Box Present: (Yes) No **Seals Intact:** (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None **Ice Intact:** (Yes) Melted

Cooler Temperature: 1°C **Radiation Screened:** Yes (No) **Chain of Custody Present:** (Yes) No

Comments:_____

B. **Laboratory Assignment/Log-in** (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?			✓	

Comments:_____

Cooler contents examined/received by: CJ Date: 10.29.19

Project Manager Review: ERP Date: 10/30/19

F-PAE-Q-009-rev.01, 3Oct2017

Appendix B
Field Notes and Weather Data for October 2019

Search Locations Log in (/log…

Recent Cities
Fort Smith, AR (weather/us/ar/fort-smith/35.35,-94.35)

35.35 °N, **94.35** °W

Fort Smith, AR Weather History

49° FORT SMITH REGIONAL AIRPORT STATION (/WEATHER/US/AR/FORT-SMITH/KFSM?CM_VEN=LOCALWX_PWSDASH) | CHANGE

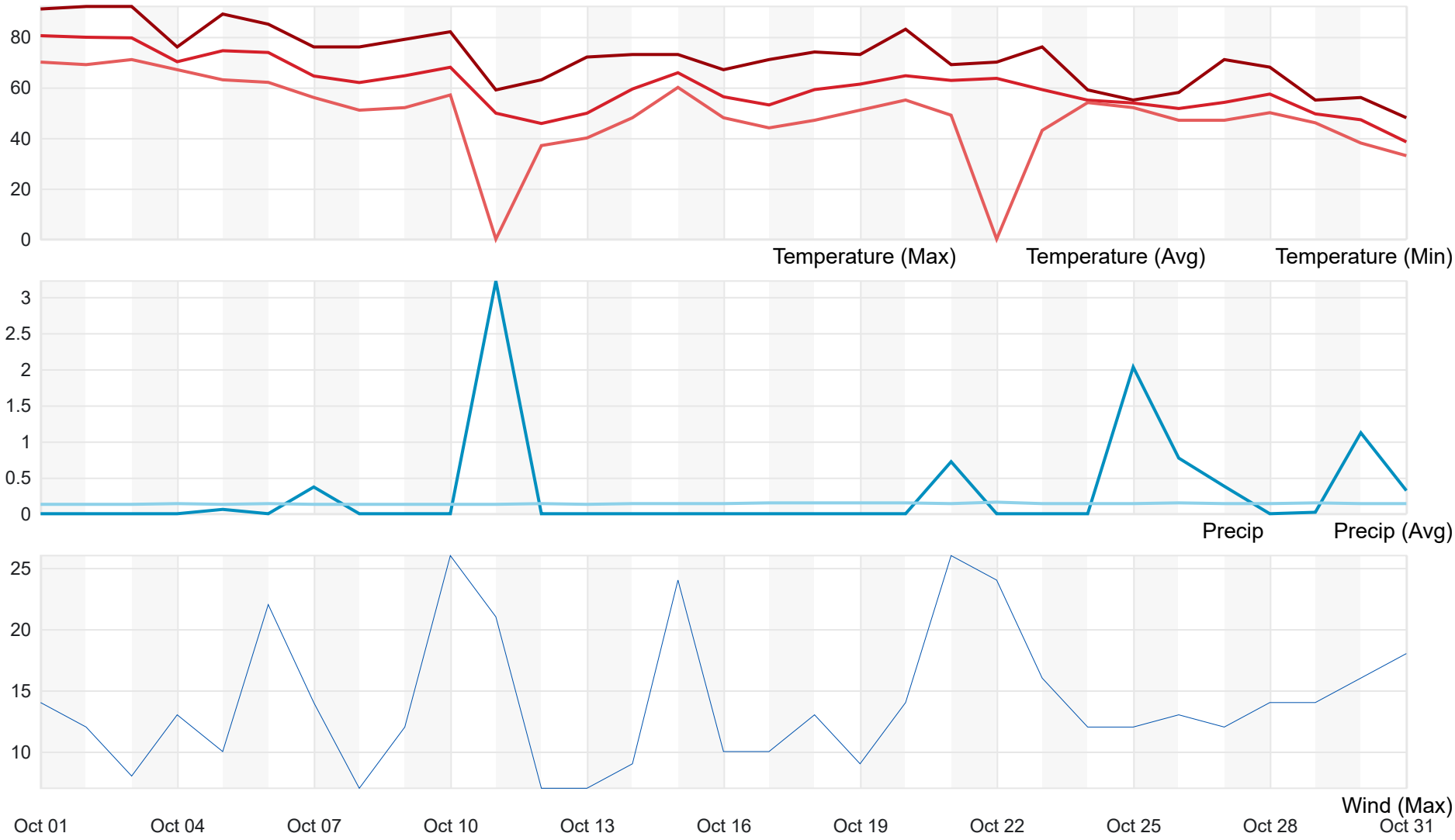
HISTORY (/HISTORY/DAILY/US/AR/FORT-SMITH/KFSM)

- TODAY (/WEATHER/US/AR/FORT-SMITH/KFSM)
- HOURLY (/HOURLY/US/AR/FORT-SMITH/KFSM)
- 10-DAY (/FORECAST/US/AR/FORT-SMITH/KFSM)
- CALENDAR (/CALENDAR/US/AR/FORT-SMITH/KFSM)
- HISTORY (/HISTORY/DAILY/US/AR/FORT-SMITH/KFSM)
- WUNDERMAP (/WUNDERMAP?LAT=35.35&LON=-94.35)

Daily (/history/daily/us/ar/fort-smith/KFSM/date/2019-10-22) Weekly (/history/weekly/us/ar/fort-smith/KFSM/date/2019-10-22) **Monthly (/history/monthly/us/ar/fort-smith/KFSM/date/2019-10-22)**

October 2019 View

Oct 01 Oct 04 Oct 07 Oct 10 Oct 13 Oct 16 Oct 19 Oct 22 Oct 25 Oct 28 Oct 31



Summary

Temperature (° F)	Max	Average	Min
Max Temperature	92	71.97	48
Avg Temperature	80.45	60.47	38.45

Temperature (° F)	Max	Average	Min
Min Temperature	71	48.61	0
Dew Point (° F)	Max	Average	Min
Dew Point	75	53.38	0
Precipitation (Inches)	Max	Average	Min	Sum
Precipitation	3.22	0.29	0.00	9.01
Snowdepth	0.00	0.00	0.00	0.00
Wind	Max	Average	Min
Wind	26	7	0
Gust Wind	46	1.78	0
Sea Level Pressure	Max	Average	Min
Sea Level Pressure	29.89	29.52	28.99

Daily Observations

Time	Temperature (° F)			Dew Point (° F)			Humidity (%)			Wind Speed (mph)			Pressure (Hg)			Precipitation (in)
Oct	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Total
1	91	80.5	70	74	70.7	66	100	74.5	47	14	6.8	0	29.6	29.5	29.4	0.00
2	92	79.8	69	72	70.0	67	100	75.1	44	12	4.6	0	29.5	29.5	29.4	0.00

Time	Temperature (° F)			Dew Point (° F)			Humidity (%)			Wind Speed (mph)			Pressure (Hg)			Precipitation (in)
3	92	79.6	71	74	71.5	69	100	78.2	55	8	3.7	0	29.6	29.6	29.5	0.00
4	76	70.2	67	69	64.8	60	100	83.6	64	13	5.8	0	29.7	29.6	29.6	0.00
5	89	74.5	63	73	66.3	59	100	77.3	55	10	4.8	0	29.6	29.5	29.4	0.06
6	85	73.8	62	75	68.2	58	100	84.1	63	22	11.6	3	29.7	29.5	29.4	0.00
7	76	64.5	56	55	53.2	50	90	69.0	41	14	5.9	0	29.8	29.7	29.7	0.37
8	76	61.9	51	55	51.7	49	100	73.0	40	7	4.0	0	29.7	29.6	29.5	0.00
9	79	64.6	52	62	56.3	49	97	76.3	54	12	6.8	3	29.5	29.5	29.4	0.00
10	82	68.0	57	73	66.4	56	100	95.2	69	26	9.4	0	29.4	29.4	29.3	0.00
11	59	49.8	0	57	41.6	0	100	74.2	0	21	13.9	5	29.8	29.6	29.4	3.22
12	63	45.7	37	46	38.4	31	100	81.3	31	7	1.1	0	29.8	29.7	29.6	0.00
13	72	49.8	40	51	44.0	40	100	85.0	35	7	3.6	0	29.6	29.5	29.5	0.00
14	73	59.4	48	60	53.8	47	100	83.3	59	9	5.8	0	29.6	29.5	29.4	0.00
15	73	65.8	60	68	59.7	45	97	81.6	53	24	11.4	0	29.6	29.4	29.4	0.00
16	67	56.3	48	46	42.3	39	93	61.1	40	10	6.3	0	29.7	29.6	29.6	0.00
17	71	53.1	44	53	47.3	44	100	84.3	44	10	4.9	0	29.6	29.6	29.4	0.00
18	74	59.1	47	53	49.5	46	100	74.2	41	13	7.4	3	29.5	29.4	29.3	0.00
19	73	61.3	51	63	55.4	49	96	82.1	61	9	4.3	0	29.3	29.3	29.2	0.00

Time	Temperature (° F)			Dew Point (° F)			Humidity (%)			Wind Speed (mph)			Pressure (Hg)			Precipitation (in)
20	83	64.6	55	67	59.7	55	100	86.9	46	14	3.1	0	29.3	29.3	29.0	0.00
21	69	62.8	49	65	53.0	40	100	74.9	36	26	12.7	0	29.5	29.2	29.1	0.72
22	70	63.6	0	46	37.0	0	90	39.3	0	24	13.3	0	29.7	29.6	29.5	0.00
23	76	59.1	43	49	43.2	37	100	63.6	25	16	7.1	0	29.6	29.6	29.5	0.00
24	59	55.0	54	55	54.0	47	100	96.9	67	12	7.5	0	29.7	29.6	29.6	0.00
25	55	53.8	52	54	53.5	52	100	99.1	93	12	6.9	0	29.7	29.6	29.5	2.03
26	58	51.6	47	55	51.3	47	100	98.9	87	13	6.1	0	29.5	29.3	29.2	0.77
27	71	54.1	47	59	51.9	47	100	93.4	63	12	5.9	0	29.5	29.4	29.4	0.38
28	68	57.4	50	59	55.6	50	100	94.4	73	14	6.5	0	29.6	29.5	29.5	0.00
29	55	49.5	46	55	49.1	44	100	98.4	93	14	6.4	0	29.7	29.6	29.5	0.02
30	56	47.2	38	56	46.9	34	100	99.0	86	16	8.9	0	29.7	29.5	29.4	1.12
31	48	38.5	33	33	28.4	25	96	68.9	41	18	10.8	0	29.9	29.8	29.7	0.32

Our Apps (/download)

About Us (/about/our-company)

Contact (/about/contact-us)

Careers (http://ibm.biz/BdH3av)

Site Map (/sitemap/)

PWS Network (/weatherstation/)

WunderMap (/wundermap)

Feedback & Support (https://www.wunderground.com/feedback)

Data Rights (/data-rights)

Terms of Use (/company/legal)

Privacy Policy (/company/privacy-policy)

Ad Partners (/company/ad-partners)

Analytics Partners (/company/analytics-partners)

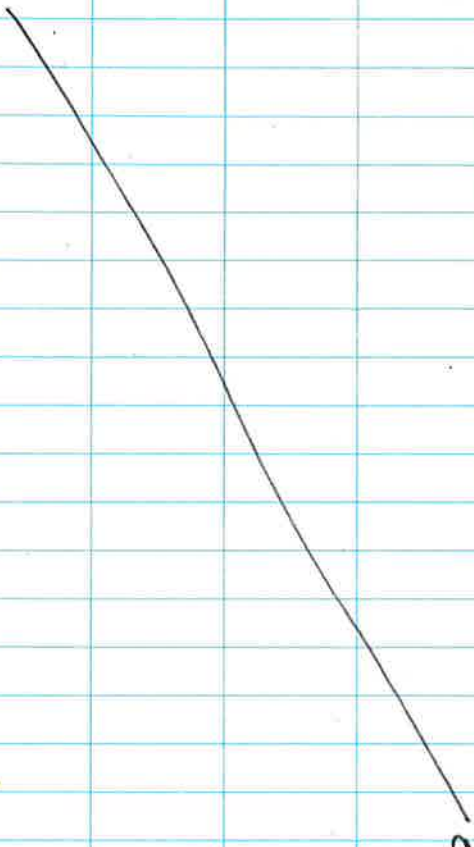
Powered by the IBM Cloud (https://www.ibm.com/cloud/)

© Copyright TWC Product and Technology LLC 2014, 2019

1500 A. Lanan and J. Krech on site. Check in with N. Martin and begin opening wells.

1830 A. Lanan and J. Krech finish opening wells and go back to staging area.

1850 Ramball off site.



10/21/19

Rite in the Rain

0800 A. Lanan and J. Krech on site after rental car pickup and store run. Other Ramboll personnel on site include J. Pavlowsky, N. Martin, A. McCabe, H. Ahlen, N. Zurweller, M. Schappert, and V. Sieglen. Weather: Sunny, 40s-50s, breezy.

0810 A. Lanan and J. Krech begin gauging wells.

1040 Well gauging complete and back to staging area to calibrate and divide equipment.

1200 A. Lanan and J. Krech off site for lunch.

1300 A. Lanan back on site and arrives at MW-187.

1320 Purge started at MW-187. See sampling log for parameters. Purged ~2.8 gallons and sampled after an hour because near stable.

Sampled MW-187-201910
@14:25
Fe^{2+}: 0.18 mg/L

1410 A. Lanan arrives at MW-188.

10/22/19

1445 Purge started at MW-188. See sampling log for parameters. Purged ~1.6 gallons and sampled once well stabilized.

Sampled MW-188-201910
MW-188-201910-MS
MW-188-201910-MSD
@15:35
Fe^{2+}: 1.54 mg/L

1600 A. Lanan to dump purge water and begin picking up samples from crew.

1630 A. Lanan to staging area to start chain of custody and pack coolers.

1805 Coolers relinquished to courier.

1810 Ramboll (except H. Ahlen and N. Zurweller) off site.

10/22/19

Rite in the Rain.

0725 A. Larson on site. Other Ramboll personnel on site include J. Krech, J. Pavlowsky, A. McCabe, N. Zumwalder, N. Martin, M. Schappert, ~~N. Martin~~ H. Ahlen, and V. Siegen. Weather Sunny, 45°F, breezy.

0730 Group calibrates equipment and has health and safety tailgate.

0825 A. Larson arrives at MW-29.

0830 Purge started at MW-29. See sampling log for parameters. Purged approx. 1.3 gallons and sampled when stabilized.

Sampled MW-29-201910
@ 0910
Fe^{2+}: 0.03 mg/L

0925 A. Larson arrives at TMW-27.

0935 Purge started at TMW-27. See sampling log for parameters. Purged approx 1.8 gallons and sampled when near stabilized.

Sampled TMW-27-201910
@ 10:40
Fe^{2+}: 0.08 mg/L

alw 10/23/19

1055 A. Larson arrives at ITMW-20.

1100 Purge started at ITMW-20. See sampling log for parameters. Purged approx 1.0 gallons and ~~purg~~ sampled after well stabilized.

Sampled ITMW-20-201910
DUP-05-201910
@ 1135
Fe^{2+}: 0.01 mg/L

1145 A. Larson arrives at MW-26

1155 Purge started at MW-26. See sampling log for parameters. Purged approx. 1.2 gallons and sampled after well stabilized.

Sampled MW-26-201910
@ 1235
Fe^{2+}: 0.00 mg/L

1245 A. Larson off site for lunch with J. Krech.

1330 A. Larson back on site and arrives at MW-84.

1350 Purge started at MW-84. Note: A. Larson put in new dedicated tubing because water wouldn't come up. Intake set at ~22 ft.

alw 10/23/19

1455 Collected sample at MW-84 after an hour and somewhat stabilized. See sampling log for parameters.

Sampled MW-84-201910 @ 1455
* Persulfate result was 70 ppm so no ascorbic acid VOAs needed

Fe^{2+}: 0.01 mg/L

1515 A. Larson arrives at MW-22.

1520 Purge started at MW-22. See sampling log for parameters. Purged approx. 1.2 gallons and sampled after stabilized.

Sampled MW-22-201910 @ 1600

Fe^{2+}: 0.00 mg/L

1610 A. Larson arrives at and begins purging MW-28. See sampling log for parameters. Purged approx. 1.8 gallons and sampled after an hour when mostly stable.

Sampled MW-28-201910 @ 1715

Fe^{2+}:

10/23/19

1725 A. Larson back to staging area to drop samples, dump purge water, and help prep coolers and COCs.

1800 Coolers relinquished to courier.

1815 Ramboll off site.

10/23/19

Rite in the Rain

Whirlpool, Fort Smith, AR 10/24/19

0715 A.Lanan on site. Rambell personnel include J.Krech, J.Pavlausky, H.Ahlen, N.Zurweller, N.Martin, A.McCabe, M.Schapperti and V.Sieglen. Weather: Raining, 55°F, slight wind

0720 Group calibrates equipment and has health and safety tailgate.

0835 A.Lanan arrives at ITMW-21.

0845 Purge started at ITMW-21. See sampling log for parameters. Purged approx. 1.2 gallons and sampled when well stabilized.

Sampled ITMW-21-201910
@09:25

Fe^{2+}: 0.00 mg/L

0935 A.Lanan arrives at MW-85R.

0940 Purge started at MW-85R. See sampling log for parameters. Purged approx. 1.8 gallons and sampled when nearly stable.

Sampled MW-85R-201910
DUP-09-201910
@1045

Fe^{2+}: 0.03 mg/L

10/24/19

Whirlpool, Fort Smith, AR 10/24/19

1055 A.Lanan arrives at IW-134.

1100 Purge started at IW-134. See sampling log for parameters. Purged approx. 1.8 gallons and sampled when near stable.

Sampled IW-134-201910
@12:05
*Per sulfate result was 20ppm so no ascorbic acid VOAs needed.

Fe^{2+}: 0.17 mg/L

1225 A.Lanan ~~arrives at MW-37~~ off site for lunch.

1255 A.Lanan back on site and eats lunch.

1330 A.Lanan at MW-37 after helping J.Krech get equipment inside of MW-37. Outer casing keeps filling with rain water, so A.Lanan gets extender from H.Ahlen.

1405 A.Lanan back at MW-37. Extender attached to top of well casing, adding ~2.2 ft to DTW measurements during purging.

1430 Purge started at MW-37. See sampling log for parameters.

10/24/19

Rite in the Rain

Whirlpool, Fort Smith, AR 10/24/19

1535 Purged approx. 1.7 gallons and sampled when well stabilized.

Sampled MW-37-201910 @15:30
* Persulfate result was <5 ppm so no ascorbic VOAs needed.

Fe^{2+}: 0.08 mg/L

1540 A. Larson to help J. Krech sample last well.

1600 A. Larson and J. Krech close some of remaining open wells. A. Larson drops off extender with J. Pavlowsky.

1630 A. Larson and J. Krech go to inside staging area to collect equipment blanks: EB-04-201910 @ 16:45 (JLK)
EB-05-201910 @ 16:50 (ASL)

1700 A. Larson and other members of crew pack equipment and begin prepping sample coolers.

1810 Coolers relinquished to courier.

1835 Ramboll off site.

10/24/19

Whirlpool, Fort Smith, AR 10/25/19

0810 A. Larson on site. Other Ramboll personnel on site include J. Krech, H. Ahlers, N. Zurweller, J. Pavlowsky, A. McCabe, and V. Sieglen. Weather: Raining, overcast, 55°F, slight breeze.

0815 Group begins organizing and loading equipment into vehicles while last well is sampled by V. Sieglen.

1040 Ramboll off site. J. Krech and A. Larson go to take pumps to UPS and sample cooler (microbial) and summa canister to FedEx for shipping. All relinquished by 11:10.

Heavy Rain

10/21/19 WHIRLPOOL

1530 Arrive on site
MOB to wells to pop well covers and plugs

1900 left site for the day

10/22/19 WHIRLPOOL 46° sunny

0715 Arrive on site
organized supplies, conducted HASP meeting and MOB to wells to measure water levels - refer to Ramboll water level Form for Guaging

1000 Finished taking team water levels
MOB to home base to calibrate

1015 YSI calibration #18G102408
specific conductivity. 1333 µS/cm
ORP: 247.9
pH7: 7.07
pH4: 3.81
pH10: 10.33
DO: ~~Temp~~ DO%
100.8

Turbidity: model 2020we
SN 1029-254
Colorimeter: S/N 1212900C93401

1115 MOB to MW190

1130 set up at MW190

1151 Began pumping

Pg 1

10/22/19 WHIRLPOOL

1152 Began taking readings at MW191

1255 Sampled MW 191 for VOCs after 1 hr of purging
Purge ∀ ≈ 4.0 gal
Ferrous iron = 0.00

1308 Packed up at MW191

1315 MOB to MW190

1317 Set up at MW190

1327 Began purging well

1337 Began taking readings & continued pumping at max speed setting on geopump

1422 Values appear stable despite some abnormally low or high values as noted; prepared to sample

1425 Sampled MW 190 for VOCs
Purge ∀ ≈ 1.25 gal
ferrous iron = 0.98 mg/L
*sample alternated b/t clear and cloudy w/ visible particles

1438 packed up at well MW190

1450 MOB to MW192

1455 set up at MW192

1508 started pumping

1555 sampled MW-192 for VOCs
Purge ∀ ≈ 3.5 gal
ferrous iron = 0.00

10/22/19 WHIRLPOOL am

1555 Sampled MW-192-~~210~~ 201910-MS
Sampled MW-192-201910-MSD

1609 Packed up at MW-192

1615 MOB to ITMW7

1623 Set up at well

1638 Started pumping @ ITMW7

1640 Began taking readings

1715 Sampled ITMW-7 for VOCs
Purge ∀ ≈
ferrous iron = 0.00

1539 Packed up at well

1545 MOB to homebase to dump purge water and pack samples in cooler

1800 leave site for the day

0715 Arrive on site 10/23/19
YSI calibration
#18G102408
specific conductivity: 1334
ORP: 243
pH_7: 7.05
pH_4: 3.79
pH_{10}: 10.27
DO: 101.8%

0800 HASP meeting

0816 MOB to TMW-14 and TMW-12

10/23/19 WHIRLPOOL

0831 set up at TMW-12
0851 Began purging well
0852 1st reading
0930 Sampled TMW-12 for VOCs
Purge ≈ 3.75 gal
ferrous iron = 0.00
0954 set up at TMW-14 & Began purging well
1004 started taking readings
1040 team paused pumping & reset equip. valves kept pumping; appears to be approaching stable after
1100 sampled TMW-14
Purge ≈ 3.75 gal
ferrous iron = 0.39
1112 packed up at well
1129 MOB to and set up at MW56-R
1143 Started purging TMW-14
1220 Sampled MW56-R
Purge ≈ 3.5
ferrous iron = 0.99
1243 MOB to & set up at MW57R
1250 Began taking readings
1332 Sampled MW57R
Purge ≈ 3.25 gal ferrous iron = 0.68

P94

10/23/19 WHIRLPOOL

1400 Break for lunch
1430 MOB to dump purge water
1452 MOB to TMW-19
1501 set up at TMW-19
1516 Started purging TMW-19
1517 Started taking readings
1606 Sampled TMW-19 for VOCs
Sampled DUP-06-201910 for VOCs
Purge ≈ 2.5 gal
ferrous iron = 0.37
1628 MOB from TMW-19 to buy ice
1645 MOB back to home base to pack sample coolers
~~leave site for the day~~ am
1705 Sampled EB-02-20190
1815 left site for the day

10/24/19 WHIRLPOOL

0715 Arrive on site
0723 prep to calibrate YSI #18G102408
Specific conductivity: 1406 µS/cm (1413 Stand.)
ORP: 228
pH7: 7.08
pH4: 3.83
pH10: 10.32
DO: 92.3%

P95

10/24/19 WHIRLPOOL

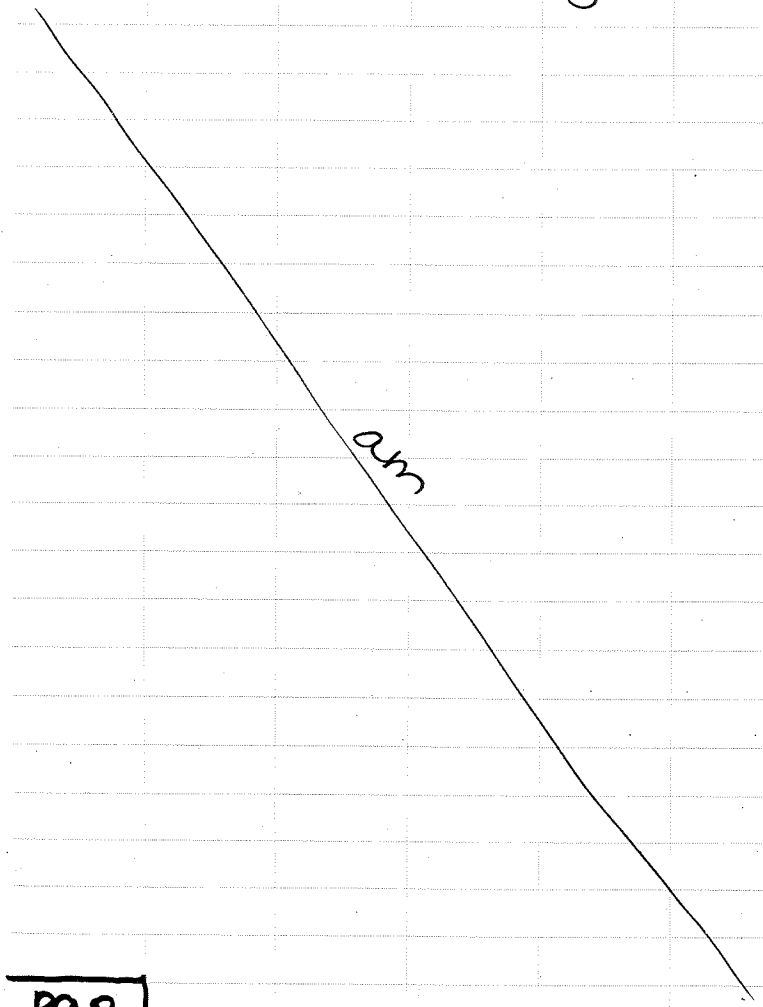
0830 MOB to dump purge water
0835 MOB to MW 189 & set up at well
0848 Started purging
0850 Started taking readings
0932 Sampled MW-189 for VOCs
Sampled DUP-08-201910
Purge ∀ ≈ 2.5 gal
ferrous iron = 0.00
0945 Packed up at well
0956 MOB to TMW-36
1004 Set up at well
1016 Started taking readings
1046 Final readings @ 1046
T = 18.1°C
Spc Cond = 838
DO = 0.21
PH = 5.44
ORP = 117
flow = 100
DTW = 25.32
Turb = 1.38
1046 Sampled TMW-~~DUP~~36 (am) for VOCs
Purge ∀ ≈ 2 gal
ferrous iron = 0.00
1120 Packed up at well and MOB for lunch
1153 MOB to dump purge water

1200 MOB to MW-27
Well was already closed upon arrival; attempted to confirm w/ team that it hadn't already been sampled
1219 ~~MOB to MW-185 until I hear back about MW-27~~ (AM) started set up at MW-27; confirmed it has not been sampled. Will reopen & sample well
1238 Began taking readings
1315 Sampled MW-27 for VOCs
Purge ∀ ≈ 3.5 gal
Ferrous iron = 0.00
1340 MOB to and set up at MW-185
1358 Began taking readings
1429 Sampled MW-185 for VOCs
Purge ∀ ≈ 2.5 gal
ferrous iron = 0.29
1444 Packed up at well and MOB to purge (dump) water & Begin closing wells that were not sampled
1630 Packed sample coolers & organized equip
1830 left site for the day

10/25/19 WHIRLPOOL

0800 Arrive on site to organize equipment & pack items to be shipped

1045 left site for the day



P98

20 Cloudy 70°F — Whirlpool — 6/14/19

1120 mob to NW parking lot to check on grouting progress.
1130 Demob sampling equipment, prepare for shipment.
1200 Dump trash in concrete/trash rolloff. Leave Sta.
1210 Purchase ziplocs / return unused items at Sutherlands
1230 Print extra Chain of Custody form at hotel.
1250 Complete chain of custody at FedEx parking lot.
1300 Prepare sample cooler for shipment.
1330 Deliver samples to lab via FedEx / relinquish samples.
1340 Leave Fort Smith / End day.

jp

Sunny 75°F — Whirlpool — 10/21/19

1530 Arrive onsite. Coordinate with Ramboll field staff.
J. Pavlowsky (RE+H)
A. McCabe (RE+H)
Sunny. 75°F.
1545 Begin popping wells at Boys & Girls Club
1615 Begin popping wells to east of building.
1640 Meet with Matt Sherple (RE+H) to the NE of the bldg (access).
1650 Continue ~~gallivanting~~ opening wells with Alicia McCabe & Matt S.
1830 Finish opening wells. Meet at home base to de-brief and distribute field paperwork + sampling equipment.
1845 Leave site. Drive to rental car pick up for Alicia.
1915 ~~Dpp~~ Pack sampling equipment to Alicia's vehicle
1920 Leave. End day.

jp

Rita in the Rain

dark/clear
28 45°F

Whirlpool 10/22/19

0700 Arrive onsite. J. Pavlowsky (REH)
M. Sheperle (REH)
V. Siegler (REH)
N. Martin (REH)
N. Zurwella (REH)
H. Ahlers (REH)
A. McCabe (REH)

0715 Prepare sampling equipment, coolers, mobilize for monitoring.

0720 Conduct Health & Safety (H&S) Tailgate

0740 Begin sampling event kickoff mtg.

0800 Begin gauging wells (Blue team) at Boys & Girls Club.
(see gauging sheet for details)

1000 Finish gauging wells.

1015 Calibrate WLM at ITMW-19 reading: 12.52' @

1025 Begin calibrating YSI for sampling. (see calibration log)

1045 Train Matt on Hach DR reader/persulfate testing

1100 Distribute sampling equipment

Sunny
52°F

Whirlpool 10/22/19 29

1110 YSI Calibration:
Serial #- 05J1366
pH4- 3.99 pH7- 7.05 pH10- 10.08
ORP- 250
DO- 102.1%
Sp Con- 1,293 µS/cm
La Motte 2020we

1130 (ID 3028-0913) calibrated

1135 Retrieve ISCR mw well log sheets for Monitoring

1150 pick up ice at gas station

1200 Break for lunch

1230 mob to ITMW-20

1240 Begin set up at well

1300 Begin purging well & monitoring YSI parameters (see logsheet)

1400 parameters stable

1405 sample ITMW-20-20191022@1405 for VOCs only.
Ferrous Iron- 0.05 mg/L
total volume purged ~4 gal
Demob at well.

1420 mob to ITMW-21
Begin set up @ well.

Rite in the Rain

65°F Sunny Whirlpool 10/22/19

1425 Begin purging TMW-21 & monitoring YSI parameters
1555 Parameters stable
1600 sample TMW-21-201910 @ 1600
for VOCs & ISCR parameters
Ferrous Iron - >3.0 mg/L
Purge volume - ~9 gal
1640 Demob at well
1650 Pump IDW/purge buckets.
1700 meet at home base (NE corner of bldg).
1705 Begin writing chain of custody for ISRR/MNA wells, sort samples, pack samples.
1800 Courier arrives & recieves samples. Ships to lab.
1805 De mob equipment.
1810 Leave Site. End day

JP

45°F Sunny Whirlpool 10/23/19

0715 Arrive onsite. J. Pavlowski (RSH) & all Ramboll field staff.
clear/sunny. 45°F.
0720 Begin calibrating YSI
Serial # - 05J1366 AG
pH7 - 7.00
pH4 - 4.01
pH10 - 10.03
DO - 99.8%
ORP - 240.0
Sp Con - 1.413
0740 mobilize sampling equipment
0800 conduct H&S tailgate
0815 Mob to MW-61R
0820 Begin setting up @ well
0825 Begin purging well & monitoring YSI parameters. (see log)
0905 Parameters stabilized.
0910 sample MW-61R-201910 @ 0910
for VOCs & ISCR
Ferrous iron - 2.13 mg/L
Total V purged - ~5 gal
0930 Demob
0935 Mob to MW-194 & set up
0940 Begin monitoring/purging

Rite in the Rain

Sunny 52°F — Whirlpool — 10/23/19

(cont purging MW-19R)

1035 Parameters Stabilized
Total purged ~ 7 gal

1040 Sample MW-19R-201910 @ 1040 for VOCs, ISCR
Ferrous Iron: 2.15 mg/L
TOTAL ∀ purged: ~8 gal
downhole pH reading: ~6.25

1100 Demob

1105 Mob to site + dump purge buckets into IDW tote

1115 Mob to TMW-22R

1120 Set up well

1125 Begin purging well & monitoring YSI parameters (see log).
Parameters stabilized
(~3 well volumes pulled)

1230 Sample TMW-22R-201910 @ 1230 for VOCs & ISCR
Ferrous Iron- > 3.0 mg/L overrange
TOTAL ∀ purged- 8 gal

1250 Demob.

1300 Eat Lunch.

1330 Leave site to Walgreens for supplies/ice

Sunny 62°F — Whirlpool — 10/23/19

1340 Back onsite/dump purge buckets.

1350 Arrive at TMW-16
Begin setting up well.

1355 Begin purging well & taking YSI parameters (see log)

1500 Parameters Stabilize

1515 Sample TMW-16-201910 @ 1515 for VOCs/ISCR
Ferrous Iron- > 3 mg/L
total ∀ purged- 8 gal

1530 Demob.

1540 Arrive at TMW-26
DTW-15.04'

1545 Begin setting up well.

1550 Begin purging & monitoring YSI parameters (see log)

1645 Parameters Stable & 3 well ∀'s purged (6.5 gal)

1700 Sample TMW-26-201910 for VOCs + ISCR
Ferrous Iron - 2.56 mg/L
Purge ∀ - 6.5 gal

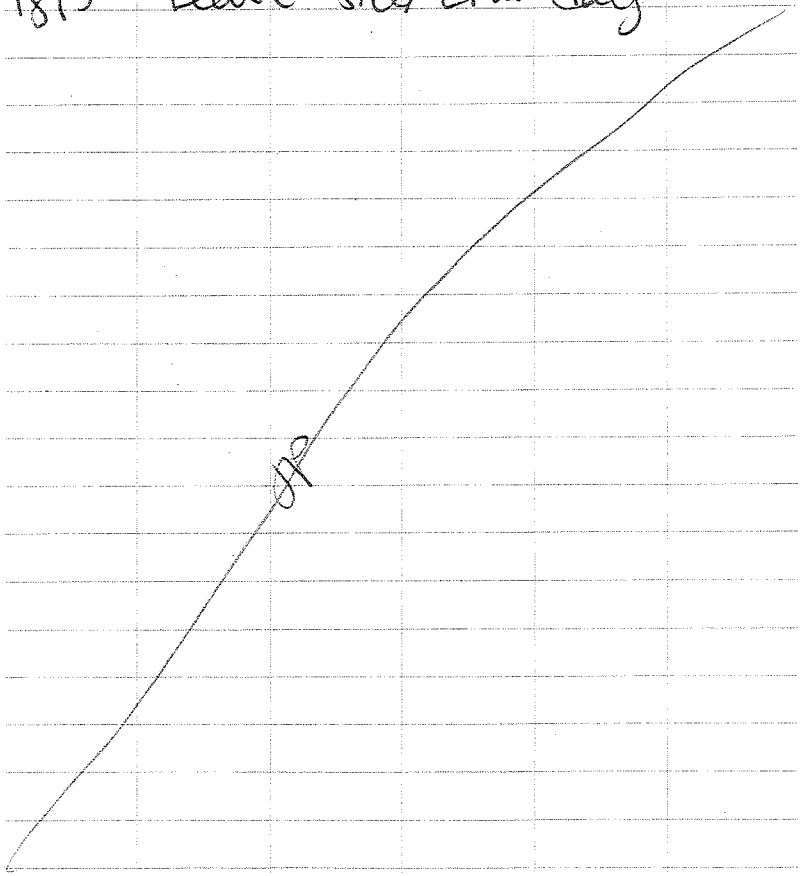
1720 Demob

1730 Drop samples off at base

Rite in the Rain

Sunny 75F Whirlpool 10/23/19

1735 Begin packing sample coolers.
1750 Review chain of custody
1800 Courier Arrives to retrieve samples.
1805 Demob for day.
1815 Leave site/ End day.



55 F Rainy Whirlpool 10/24/19

0715 Arrive onsite (J Pawlowsky).
0720 Meet to south of bldg to calibrate YSI equipment indoors.
YSI - ID: 05J1366
pH7 - 7.00
pH4 - 4.00
pH10 - 10.02
ORP - 238.5
DO - 98.4%
Sp Con - 1.358 mS/cm
Calibrate 3028-0913-ID for 2020 use LaMotte Turbidity
0800 Conduct H&S mtg. (all REH.)
A. Larson H. Ahlers
J. Krech N. Zurweller
N Martin M Sheple
A McCabe V. Spegler
0815 ~~Pump~~ prepare equipment for sampling.
0845 Pump purge buckets at IDW tank.
0855 Mob to TMW-25
0900 Begin set up at well
0920 Begin purging (see log sheet)

Rain on the Rain

36 Rainy 55°F Whirlpool 10/24/19

1045 Parameters stabilize.

1055 Sample TMW-25-201910 @ 1055 for VOCs/ISCR

Ferrous iron - 1.68 mg/L
TOTAL ~ purged - 9 gal

1100 Demob

Field/downhole YSI -
16.95°C
-160.5 ORP
1.446 ms/cm
0.20 DO
7.14 pH

1110 Break for lunch.

1130 Mob to MW-186

1140 Begin setting up at MW-186

1205 Begin purging + monitoring for YSI parameters (see log)
Parameters stable

1315 Sample MW-186-201910 @ 1315 for VOCs + ISCR

Ferrous iron - 1.66
TOTAL ~ purged - 7.5 gal
field/downhole YSI readings = could not reach

Rainy 55°F Whirlpool 10/24/2019

(cont'd MW-186)
YSI downhole to water (kept getting caught by tubing I presume)

1330 Demob

1345 Begin set up at TMW-32

1400 Begin purging well & monitoring YSI parameters (see log sheet)

1500 parameters stabilized & 3 well volumes removed.

1515 Sample TMW-32-201910 @ 1515 for VOCs/ISCR

Ferrous iron - 1.76 mg/L
TOTAL ~ purged - 8 gal
~~demob~~
YSI readings downhole:
pH - 6.55 temp - 19.55 (C)
DO - 0.12
Sp Con - 947
ORP - -76.1

1530 demob
dump purge buckets at IDW tote.

Rite in the Rain

38 Rainy 55°F Whirlpool 10/24/19

1545 Mob to TMW-34.
1550 Begin set up at well.
1605 Retrieve extender from Alyssa L.
1610 Set up well. Begin purging and monitoring for WSP parameters. (See log)
Parameters Stable
1730 Sample TMW-34-20191024 @ 1730 for ISCR/VOCs.

Ferrous Iron: 1.54 mg/L
TOTAL ≠ purged 5.5 gal
1750 Demob
1755 Drop off samples at base (inside bldg) for packing & shipping.
1810 Unload/pack up equipment
1815 Leave site/End day

JP

10/25/19 Whirlpool Clear 40°F 39

0800 Arrive onsite.
0805 Open WH gate.
0810 Begin demobilizing sample equipment.
0830 Collect monitoring well logsheets from Nick M, Matt S, Alyssa L. Joel K. & review for errors
0930 Drive to Wal mart to pick up packaging tape & other field supplies
1000 Arrive back on-site.
1015 Collect all field staff trash & dump.
1030 Arrive back onsite.
1035 Field Event de-brief
1045 Leave site. Begin travel home.

JP

Rain on the Rain

Whirlpool GW Sampling - Fort Smith, AR 10/22/19

0700 Arrive at site for safety meeting

0730 Begin taking water level readings for blue

1000 Finish water level

1015 MW reading of 12.52 DTW for Calibration

1020 YSI Calibration

YSI-18J102185

1. Spec. Conductivity = 1.31 mS/cm
2. ORP = 251.2 mV
3. pH

pt 1 = 7.11
pt 2 = 3.91
pt 3 = 9.78

4. DO = 749.117 mg/L

Turbidimeter = 027921

1106 - Finished Calibrating

1130 - lunch

1200 - Return from Lunch, go to MW 62R

1330 - Finished at MW 62R, going to MW 68

1405 - Start on well MW-68

1455 - Finished on MW-68, move to MW-40R

1510 - Start on MW-40R

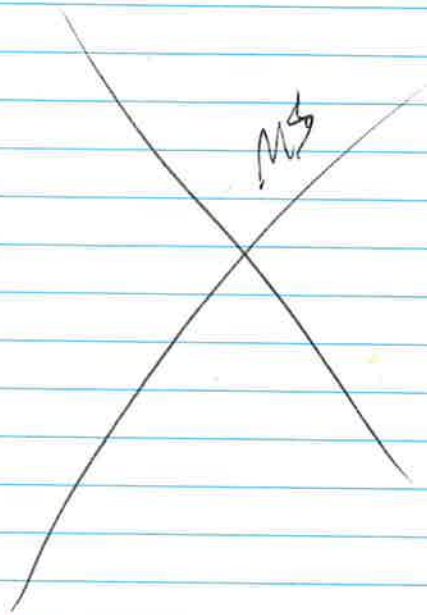
1630 - Finish at MW-40R. Go back to help with Samples

1800 - off site

1500 Arrive on site

1530 Begin popping well caps

1900 Finish well caps & Demob.



Rite in the Rain.

Fort Smith 10/23/19

0700 - On site for Safety meeting
⇒ to calibrate equipment

0720 YSI - 18J102185

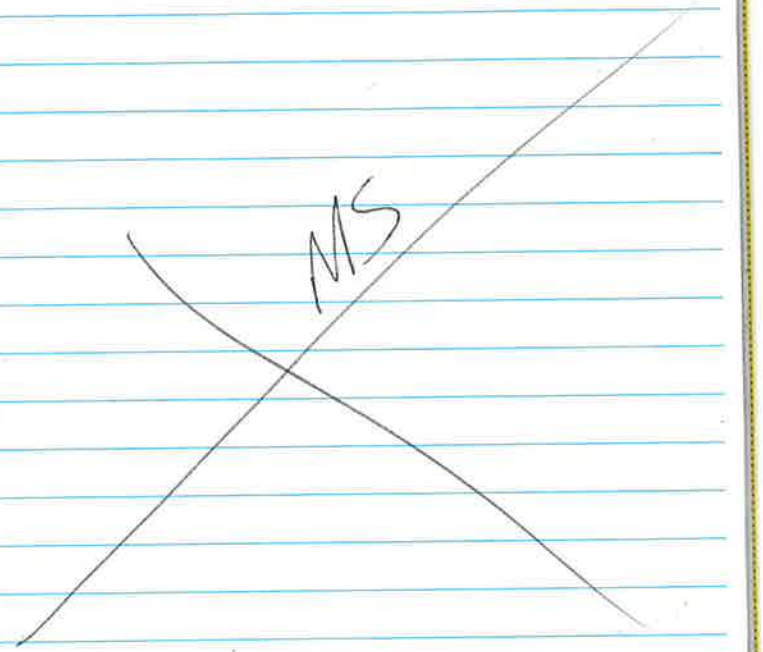
1. Spec. Cond. = 1.23 mS/cm
2. ORP = 247.7
3. pH
   pt. 1 = 7.06
   pt. 2 = 4.02
   pt. 3 = 10.16
4. DO = 766.147 mg/L

Turbidity Meter = 027921

0755 - Finish calibrations
0820 - Start on MW-97
0925 - Finished MW-97. Going to MW-96
0935 - Start on MW-96
1040 - Finish MW-96
1100 - Lunch
1120 - Return
1135 - Start on MW-82
1253 - Finish MW-82. Moving to IW-78 (Dup at MW-82)
1305 - Start on IW-78

7

1410 - Finishe IW-78
1420 - Dumping purge water and then on to ITMW-1R
1430 - Start on ITMW-1R
1600 - Sample ITMW-1R
1620 - Finished clean up at ITMW-1R
1640 - Packaging / Labeling samples for pickup
1800 - Leave site after Sample pickup



Rite in the Rain

6 Fort Smith - Whirlpool GW Sampling 10/24/19

54° / Rainy

0700 - Arrive on site

0730 - Calibration

YSI -

1. Spec. Cond. = 0.80
2. ORP = 242.3
3. pH
   - pt. 1 = 7.03
   - pt. 2 = 4.00
   - pt. 3 = 10.10
4. DO = 767.7

Turbidity = 027921

0825 - Finished Safety & calibration. Moving to ITMW-2R

0850 - Start on ITMW-2R

1015 - Finished at ITMW-2R. Moving to ITMW-11

1030 - Set up on ITMW-11

1155 - Persulfate test at ITMW-11
- reads ~ 4.2 ppm
- 4.2 x 100 = 420 ppm
- using ascorbic acid VOAs

1220 - Finished at ITMW-11

1230 - Lunch

1245 - At MW-91

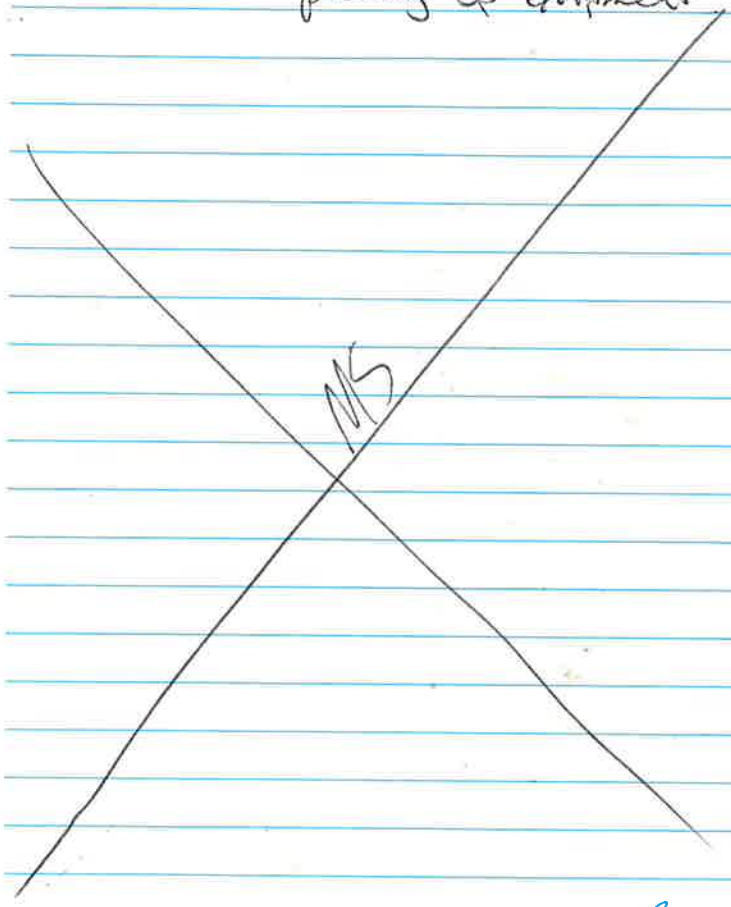
10/24/19

1430 - Finished at MW-91. Going to ITMW-12R

1450 - Start on ITMW-12R

1610 - Finished on ITMW-12R

1830 - Left site after labeling samples and packing up equipment



Rite in the Rain.

Whirlpool, Fort Smith



Rite in the Rain®

ALL-WEATHER

FIELD

№ 351FX

a dup. sample will be taken here

	1L	2L	
CH_4:	0.0	0.0	*CO = 1 @ 2L mark
CO_2:	8.8	8.0	
O_2:	8.2	9.4	
Bal:	83.0	82.6	

2L 5 air pumped from Vapor pt QIR
1908 He test begins
1910 He test passes; 0.0 ppm He
1912 Begin sampling at QIR (P_o: -27 inH$_2$O)
Summa #: 3252 Reg #: 1776
Summa #: 2479 Reg #: " *dup
1926 End Sample collected; P_f: -5 inH$_2$O
$ QIR-SS-201904 @ 1926
$ QIR-SS-201904-DUP @ 1926
1935 Ranboll packs up equipment for day. Vapor sampling completed, except for ZS-1 location. Ranboll offsite. Will ship vapor samples tomorrow.

4/25/19

1400 Ranboll arrives onsite
Personnel: Nick Martin. Rest of field crew (8 others) to arrive between 1400 - 1600.
Weather: 67°F, sunny and S-10 mph
Objectives: Open well covers / plugs for tomorrow's gauging event, distribute field equipment, project kickoff.
1405 N. Martin walks to North of building to open wells.
1430 N. Martin walks to East / Jacobs properties to open wells
1530 Victoria Siegler arrives / assists at Bose / Jacobs.
1730 Complete well opening activities, assist other groups.
Note. Well MW-55R unable to be ~~be~~ NM opened b/c no resident present and dog in backyard barking loudly
1615 Return to meeting location to north of building. Distribute / receive groundwater sampling equipment, pack up site
1650 Ranboll offsite (others arrived by ~ 1600).

10/21/19

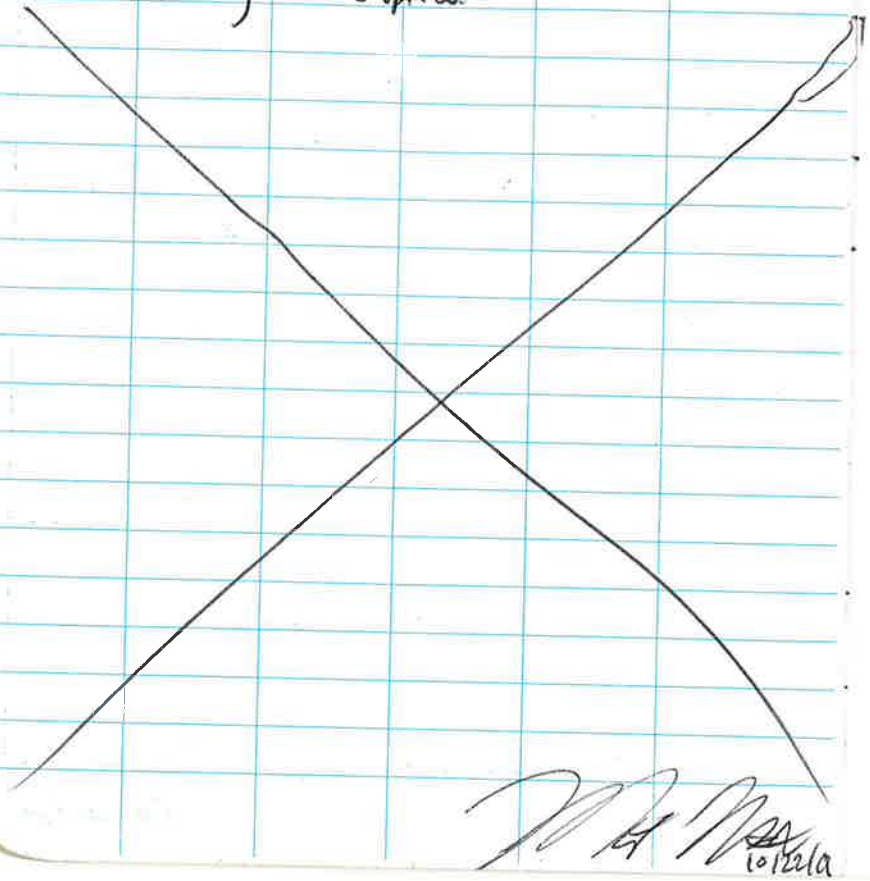
0705 Ramboll onsite (N. Martin)
Personnel: N. Martin, W. Ahlers, J. Krech, A. Lossa, A. McCabe, J. Paulowsky, V. Siglen, N. Zumwalten.
Weather: 45°F, Sunny - mostly sunny, 5-10 mph SW wind. Objectives: Gauge wells, begin GW sampling.
0715 Tailgate health & safety meeting. Topics discussed included traffic safety, site security, sun protection, PPE, etc.
0745 N. Martin & V. Siglen begin gauging wells at Jacobs / Bosch
0930 N. Martin / V. Siglen gauge "green" team wells on-site
1005 N. Martin well gauging complete. Begin calibrating YSI + turbidity meter, finishing equipment prep.
1110 Calibration / other gw sampling prep complete. YSI / Turb. meter cal details:
Final readings → calibrated to reading:
Spec. Conductance: 1.253 mS/cm → 1.413 mS/cm
ORP: 249.6 mV → 240.00 mV.
pH: 7.11 → 7.00
3.71 → 4.00
10.00 → 10.00
DO: 102.2% → 98.8%

10/22/19

YSI Serial number: 18J13 (probe), 03454 (Monitor).
Turbidity Meter: LaMotte 2020e, S/N: 1422-1410
1130 N. Martin offsite for lunch
1200 N. Martin completes lunch, celebrates in field notebook, mob to TMW-29 for sampling
1320 Begin purging at TMW-29. Turbidity rapidly increases after ~25 mins. Flow rate increased to see if high turb. is due to temporary slug or if natural.
1430 Parameters stabilized, but turb. too high to be recorded. Sample collected (VOCs).
$ TMW-29-201910 @ 1430
↳ 3 VOAs
1445 Mob. to gas station to get ice / use restroom
1515 Mob to MW-195, begin purging
1618 All parameters stable w.i. 3% from spec. cond. Sample collected (VOCs) @ 1620
$ MW-195-201910 @ 1620 3 VOAs, plus MS/MSD (3+3 VOAs), 9 total vials

10/22/19

MS name: MW-195-201910-MS @ 1620
MSD name MW-195-201910-MSD @ 1620
1645 Mob back to site to help pack coolers, dump purge water, pack-up equipment
1800 Ramboll offsite. N. Martin to deliver Microbial Insights samples to Fedex for overnight shipment.



10/22/19

0715 Ramboll onsite
Personnel: N Martin (this field books), Fee prior day for project roster
Weather: 47°F current, 5-10 mph wind from, high 5
Objectives: Continue GW sampling. 4 wells on agenda for day plus 1 well from yesterday that was not sampled (MW-60R).
0720 Begin calibration of equipment
Note same YSI + Turbidimeter as 10/22/19.
GW data:
~~Sp~~ Cond: 1.404 mS/cm → 1.413 mS/cm
ORP: 241.9 mV → 240. V
pH 7: 7.04 → 7.00
4 to: 4.03 → 4.00 NSM
10 to: 9.97 → 10.00 NSM
DO: 100.7 → 98.5%
Turbidimeter calibrated.
0800 Tailgate H&S meeting conducted. Topics discussed include site security (aggressive dogs), PPE.
0820 Mob to MW-60R to sample well.

Rain.

10/23/19

0835 Begin purging @ MW-60R
0940 Parameters stable, except for D.O. and turbidity. Sample collected b/c purging conducted for an hour. VOC sample collected (3 VOAs)
$ MW-60R-201910 @ 0940
1000 Mob to buy ice / use restroom
1010 Mob to MW-196; begin purging
1051 All parameters stabilized, sample collected at 1055. VOC sample collected
$ MW-196-201910 @ 1055
1110 Mob to MW-55R.
1132 Begin purging @ MW-55R
1212 All parmeters stabilized, sample + dup collected @ MW-55R @ 1215
$ MW-55R-201910 @ 1215
$ DUP-04-201910 @1215 (Co-located)
1230 N. Manila offsite for lunch
1300 Mob to TMW-24
1328 Begin purging @ TMW-24
1423 Parameters stabilized, sample collected 3 VOAs for VOCs
$ TMW-24-201910 @ 1425
1445 Mob to TMW-23.

10/23/19

1500 Begin pumping @ TMW-23
1603 All parameters stable after 1 hr except for ORP. Sample collected
$ TMW-23-201910 @1605
↳ 3 VOAs for VOCs.
1615 Mob to MW-24
1620 Begin purging
1715 All parameters stabilized
1720 Sample collected, 3 VOAs for VOCs
1730 Mob to meeting location north of building to pack up / help pack coolers.
1810 Coolers sent off w/ courier / Ramboll offsite for day.

10/23/19

Rite in the Rain

0710 Ramboll on site
Personnel: N Martin, see day #1 for full project roster.
Weather: Moderate rain, 57°F, 7 mph SE winds, Rain to continue all day with 50–100% chance for most of day
Objectives: Continue/finish groundwater sampling, assist others with sampling wells, close up wells.
0720 Calibrate YSI / Turbidmeter
Cal. Data
Sp Conductivity: 1.408 mS/cm^c → 1.413 mS/cm^c
ORP: 232.5 mV → 240 mV
pH: 6.93 → 7.00
4.09 → 4.00
9.87 → 10.00
DO: 99.3% → 98.7%
YSI: Serial # 18313 (probe) / 031454 (Monitor/controller)
Turb: Lamotte 2020t: Serial # 1422-14A
0820 Tailgate H&S meeting and project wrap-up planning. Topics discussed include severe weather, PPE, site security, driving safety,
0835 Mob to ITMW-16

10/24/14

0850 Begin purging @ ITMW-16
0946 Parameters stabilized
0950 Sample collected + duplicate
$ ITMW-16-201410 @ 0950
3 VOAs for VOCs + 3 VOAs for Dup
↳ $ DUP-10-201410 @ 0950
1000 Mob to ITMW-10
1026 Begin purging at ITMW-10
1133 All parameters stable after 1 hour of purging except for ORP. Sample collected 3 VOAs for VOCs
~~$ ITMW-10 @~~ NJM 10/24
$ ITMW-10-201410 @ 1135
1145 Mob to ITMW-5.
1157 Begin purging @ ITMW-5.
1303 All parameters stabilized after 1 hr. of purging except for ORP. Sample collected for VOCs (3 VOAs).
$ ITMW-5-201410 @ 1305
1320 Mob offsite for lunch.
1355 Mob to IW-B2
1426 Begin purging @ IW-B2
1526 All parameters stabilized, collect sample: 3 VOAs for VOCs

Rain
10/24/14

$ IW-132-20191O @ 1530
1545
Note: ORP sensor appears to be malfunctioning, and may be recording values that aren't in-line with historical ORP values at certain wells. This variance from historical values was noticed this AM and several steps were taken to correct the issue, including:
1) Re-calibration of ORP sensor;
2) QA step using A. Larson's YSI to evaluate difference in ORP measurements
3) Cleaning of the ORP sensor itself.
Because the ORP sensor appeared to be correctly measuring the cal. solution (240mV) and calibrating correctly, a new YSI was not sought for the remaining 4 wells sampled today, despite the deviations from historical data and the difference in ORP readings using A. Larson's YSI (the Δ between the ORP readings was ~250mV more positive using A. Larson's YSI at IW-132). Groundwater ORP measurements using YSI SN#1813 and controller SN#031454, for the above reasons,

10/24/19

should be scrutinized from this event. While deviations from historical norms may have been encountered for ORP on 10/22 & 10/23, these wells were more in vicinity of injection locations, so ORP values had potential to be more variable (i.e., no red flags were raised because of these deviations).
1615 Mob back to site building to pack up equipment / coolers for shipment
1700 N. Martin offsite to obtain ice
1715 N. Martin return to site building, continues packing coolers performing QA/QC tasks
1820 Rumbell offsite for event after courier pick-up of samples / demob. of equipment

10/24/19

Rite in the Rain

Location Whirlpool Date 7/12/19

Project / Client 6400 Jenny Lind Rd
Ft Smith, AR

1400	in neighborhood check to see all wells are closed
1610	Triple hotel to pick up summa Canisters or Nick Z.
1645	Back on site deliver summas to Joel K.
1650	Checking wells for closure.
1730	on site to help w/ Sample packing
1930	Everyone off site

Location Whirlpool Date 10/2/19

Project / Client 6400 Jenny Lind Rd
Ft Smith AR

1530	Arrive on site
	Start opening wells see Nick M field book
1800	Meet at meeting point
1830	everyone off site

Location Whirlpool Date 10/2/19

Project / Client 6400 Jenny Lind Rd FT Smith AR

Semi-Annual Sampling

0700	everyone onsite
~~0800~~	HS meeting
0800	starting gauging wells. See gauging sheet
1000	start calibrating YSI. See calibration sheet
~~HS 1100~~ 1130	Lunch
1200	Back onsite head to mw-63
1210	Pump start
1310	Sample MW-63R total purge ~2.0 gal
1330	head to mw-39R
1341	Pump Start
1430	Sample MW-39R total purge ~2.0 gal
1501	Setup on MW-35
1507	Pump start
1550	Sample MW-35 ~total purge ~1.5 gal
1618	At meeting place to pack coolers + purchased ice
1630	everyone offsite

EB 01-20190

Location Whirlpool Date 10/23/19

Project / Client 6400 Jenny Lind Rd FT. Smith, AR

Semi-Annual Sampling

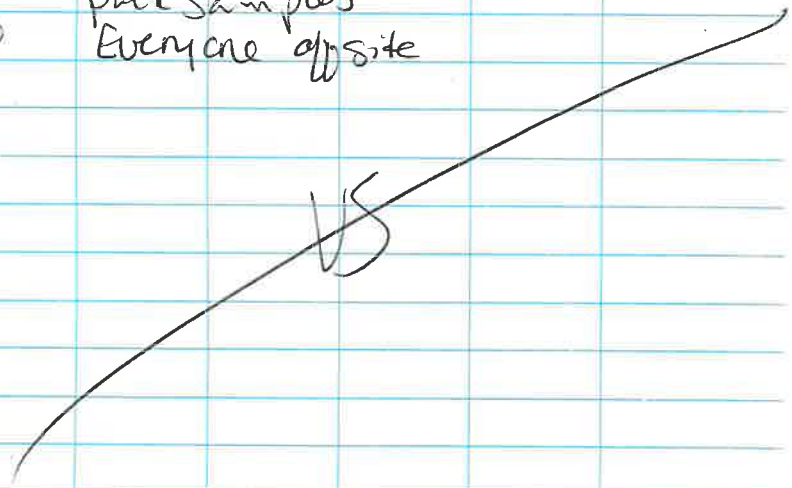
0700	everyone onsite
~~0715~~ 0715	Calibrate YSI See Calibration Sheet
0745	HS meeting
0815	Head to mw-98
0825	YSI issues
0850	pump start YSI issues resolved
0950	Sample MW-98 total purge ~2.0 gal
1000	Ice run for samples
1015	Setup on MW-183
1021	Pump Start
1102	Sample MW-183 total purge ~1.5 gal
1115	Lunch
1145	Back onsite
1155	Setup on mw-99
1159	Pump start
1235	Sample MW-99 ~total purge ~2.0 gal
1242	mob to mw-184
1300	Pump start
1340	Sample MW-184 total purge ~2.0 gal

Location Whirlpool Date 10/23/19

Project / Client 6460 Jenny Lind Ft Smith, AR

Semi-Annual Sampling

1355	dump purge H_2O
1406	mob to MW-46R
1424	Pump start
1500	Sample MW-46R total purge
	Dup-03
1510	mob to IW-77
1527	Pump start
1610	Sample IW-77 total purge ~30 gal
1620	Load vehicle + dump purge H_2O
1640	heading to meeting split to pack samples
1830	Everyone offsite

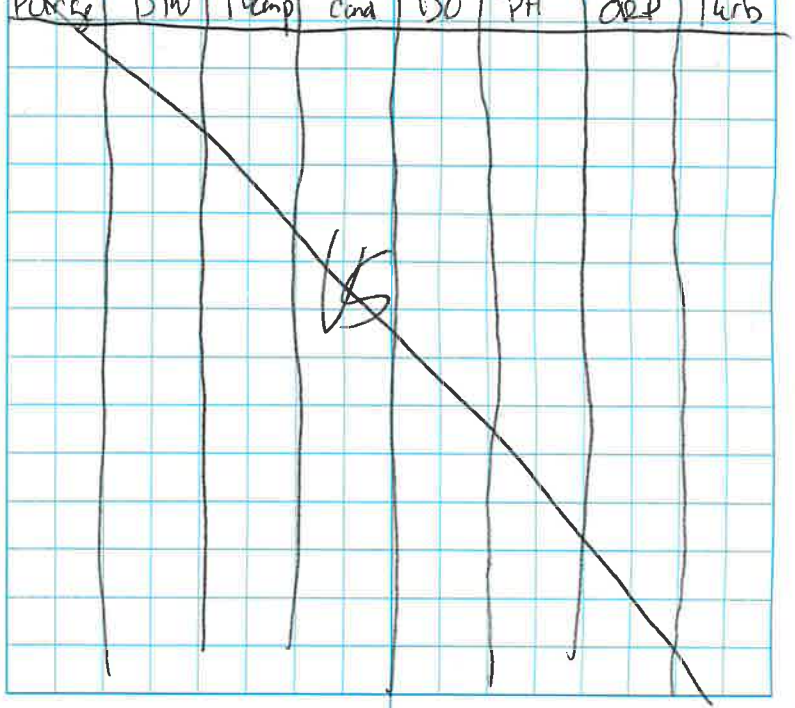


Location Whirlpool Date 10/24/19

Project / Client 6460 Jenny Lind Fort Smith AR

Semi-Annual Sampling

0715	onsite
0730	Start Calibrating YSI
0800	H&S meeting
0815	Done Calibrating organizing for IW-73 Sampling
	Run to Walmart for umbrellas
	return to site
	Setup on IW-73
	Pump Start



Location Whirlpool Date 10/24/15

Project / Client 6400 Jenny Lind Ft Smith, AR

Semi Annual Sampling

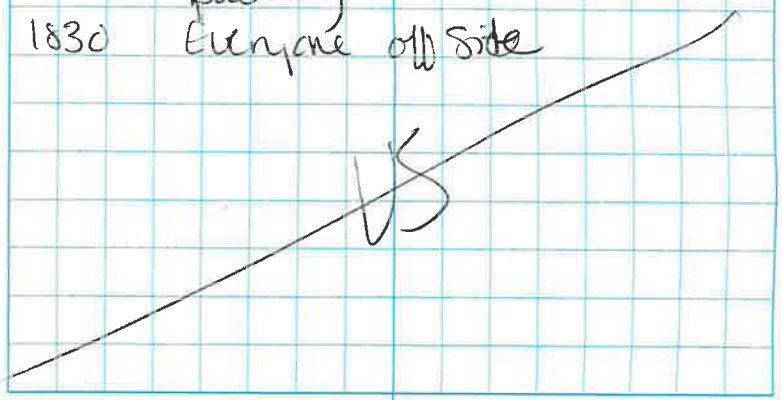
0830	At IW-73. Well is complete submerged Call Nick 2. + Haley. They came to view the well + Haley called Tamara. They will sample the well in Nov Head to MW-147
0933	Pump start
1015	Sample MW-147 total purge ~2.0 gal
1054	Inject air into ~~bottle~~ glass container for bubble stripping. 1160 mL for 20 mins
1114	collect air sample -Several semis drove by while sample was percolating.
1130	Lunch
1200 ish	back onsite mob to MW-95
~~1250~~ 1220	Pump start
1305	Sample MW-95
1333	Inject air @ 300mL/min
1343	collect air sample
1355	Dump purge H2O
1405	mob to MW-25R
1428	Pump start water very muddy pull tubing back clears but YSI water very muddy

Location Whirlpool Date 10/24/15

Project / Client 6400 Jenny Lind Ft Smith, AR

Semi Annual Sampling

	empty YSI, restart. Water brown -Well clear gets muddy again returns to clear-YSI muddy again. not clearing
1516	Cleans YSI after given chance of clearing. Restart again
1520	Replace silicon tubing. Normal operation resume. Pump rate visually matches flow through YSI
1529	Readings begin again
1600	Stop purge MW-25R to little water to sample
1610	Load up + bathroom break
1630	onsite to assist w/ COC, sampling packing
1830	Evacuate off site



110

Location Whirlpool Date 10/25/19

Project / Client 6400 Jenny Lind Ft Smith, AR

Semi-Annual Sampling

VS

~~0550~~ 0750 Victoria + 50 onsite

0800 everyone else onsite

0850 Victoria off to Sample MW-25R

all samples collected except iron and ~~ph~~ bubble stripping

~~1000~~ Back VS

Sample MW-25R

Back w/ the group to finish organizing equipment.

1040 Head back to Kansas City + return rental vehicle, and equipment and drop equipment by office

Location

Project / Client

Appendix C
Risk Calculations and Input Parameters

Contents:

C.1 Toxicity Values
C.2 Physical and Chemical Properties

C.3 Soil Moisture Profile for Residential Building (Slab-on-Grade) for Risk Calculations from Groundwater at Monitoring Wells
C.4 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Groundwater at Monitoring Wells
C.5 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Groundwater at Monitoring Wells in the Neighborhood

C.6 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Soil Vapor Monitoring Point VP-7 (Parcel 2)
C.7 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at VP-7 (Parcel 2)
C.8 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at VP-7 (Parcel 2)
C.9 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Soil Vapor Monitoring Point VP-8 (Parcel 2)
C.10 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at VP-8 (Parcel 2)
C.11 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at VP-8 (Parcel 2)
C.12 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Groundwater Monitoring Well MW-175 (Parcel 2)
C.13 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Groundwater at MW-175 (Parcel 2)
C.14 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Groundwater at MW-175 (Parcel 2)

C.15 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Soil Vapor Monitoring Point VP-10 (Parcel 3)
C.16 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at VP-10 (Parcel 3)
C.17 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at VP-10 (Parcel 3)
C.18 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Groundwater Monitoring Well MW-176 (Parcel 3)
C.19 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Groundwater at MW-176 (Parcel 3)
C.20 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Groundwater at MW-176 (Parcel 3)

C.21 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Soil Vapor Monitoring Point VP-12 (Parcel 4)
C.22 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at VP-12 (Parcel 4)
C.23 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at VP-12 (Parcel 4)

C.24 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Groundwater Monitoring Well MW-178 (Parcel 5)
C.25 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Groundwater at MW-178 (Parcel 5)
C.26 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Groundwater at MW-178 (Parcel 5)
C.27 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Soil Vapor Monitoring Point VP-14 (Parcel 5)
C.28 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at VP-14 (Parcel 5)
C.29 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at VP-14 (Parcel 5)
C.30 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Groundwater Monitoring Well MW-179 (Parcel 5)
C.31 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Groundwater at MW-179 (Parcel 5)
C.32 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Groundwater at MW-179 (Parcel 5)

Appendix C
Risk Calculations and Input Parameters

Contents:

C.1 Toxicity Values
C.2 Physical and Chemical Properties

C.3 Soil Moisture Profile for Residential Building (Slab-on-Grade) for Risk Calculations from Groundwater at Monitoring Wells
C.4 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Groundwater at Monitoring Wells
C.5 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Groundwater at Monitoring Wells in the Neighborhood

C.6 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Soil Vapor Monitoring Point VP-7 (Parcel 2)
C.7 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at VP-7 (Parcel 2)
C.8 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at VP-7 (Parcel 2)
C.9 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Soil Vapor Monitoring Point VP-8 (Parcel 2)
C.10 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at VP-8 (Parcel 2)
C.11 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at VP-8 (Parcel 2)
C.12 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Groundwater Monitoring Well MW-175 (Parcel 2)
C.13 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Groundwater at MW-175 (Parcel 2)
C.14 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Groundwater at MW-175 (Parcel 2)

C.15 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Soil Vapor Monitoring Point VP-10 (Parcel 3)
C.16 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at VP-10 (Parcel 3)
C.17 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at VP-10 (Parcel 3)
C.18 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Groundwater Monitoring Well MW-176 (Parcel 3)
C.19 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Groundwater at MW-176 (Parcel 3)
C.20 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Groundwater at MW-176 (Parcel 3)

C.21 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Soil Vapor Monitoring Point VP-12 (Parcel 4)
C.22 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at VP-12 (Parcel 4)
C.23 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at VP-12 (Parcel 4)

C.24 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Groundwater Monitoring Well MW-178 (Parcel 5)
C.25 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Groundwater at MW-178 (Parcel 5)
C.26 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Groundwater at MW-178 (Parcel 5)
C.27 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Soil Vapor Monitoring Point VP-14 (Parcel 5)
C.28 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at VP-14 (Parcel 5)
C.29 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at VP-14 (Parcel 5)
C.30 Soil Moisture Profile for Residential Building (Slab-on-Grade) at Groundwater Monitoring Well MW-179 (Parcel 5)
C.31 Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Groundwater at MW-179 (Parcel 5)
C.32 Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Groundwater at MW-179 (Parcel 5)

Attachment C.1: Toxicity Values
Whirlpool, Fort Smith, Arkansas

Chem Group	Chemical	CASRN	Cancer Classification		ADAF			URF ($mg/m^3)^{-1}$			RfC (mg/m^3)			
			Group	Ref	Y/N	f_{oral}	f_{inh}	Value	Ref	Notes	Value	UF	Ref	Notes
VOC	Acetone	67-64-1	ID	1	N						3.1E+01	100	129	111
VOC	Benzene	71-43-2	A	1	N			7.8E-03	1	60	3.0E-02	300	1	
VOC	Bromoform	75-25-2	B2	1	N			1.1E-03	1				126	90
VOC	Bromomethane	74-83-9	ID	126	N						5.0E-03	100	1	
VOC	2-Butanone	78-93-3	ID	1	N						5.0E+00	300	1	
VOC	Carbon Disulfide	75-15-0			N						7.0E-01	30	1	
VOC	Chlorobenzene	108-90-7	D	1	N						5.0E-02	1,000	126	
VOC	Chloroform	67-66-3	B2	1	N			2.3E-02	1		5.0E-02	100	117	
VOC	Chloromethane	74-87-3	D	1	N						9.0E-02	1,000	1	
VOC	1,2-Dichloroethane	107-06-2	B2	1	N			2.6E-02	1		7.0E-03	3,000	126	
VOC	1,1-Dichloroethene	75-35-4	C	1	N						2.0E-01	30	1	
VOC	cis-1,2-Dichloroethene	156-59-2	ID	1	N								1	90
VOC	trans-1,2-Dichloroethene	156-60-5	ID	1	N								1	90
VOC	Ethyl Benzene	100-41-4	D	1	N						1.0E+00	300	1	
VOC	2-Hexanone	591-78-6	ID	1	N						3.0E-02	3,000	1	
VOC	4-Methyl-2-pentanone	108-10-1	ID	1	N						3.0E+00	300	1	
VOC	Methylene Chloride	75-09-2	LC	1	Y	1	1	1.0E-05	1	159	6.0E-01	30	1	
VOC	Toluene	108-88-3	ID	1	N						5.0E+00	10	1	
VOC	Trichloroethene	79-01-6	HC	1	Y	0.202	0.244	4.1E-03	1	159	2.0E-03	100	1	
VOC	Vinyl Chloride	75-01-4	A	1	N			4.4E-03	1	79	1.0E-01	30	1	

Toxicity values were selected following the hierarchy of sources defined by USEPA (Human Health Toxicity Values in Superfund Risk Assessment, 2003), as discussed in Appendix A, Section 4 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision. Values are current as of September 4, 2015.

References

1 USEPA. Integrated Risk Information System (IRIS). On-line database.

117 USEPA. NCEA. 2003. Risk Assessment Issue Paper for: Derivation of Provisional Subchronic and Chronic RfCs for Chloroform [CASRN 67-66-3]. January 23.

126 Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV) Database.

129 ATSDR. 2013. Minimal Risk Levels. March.

Notes:

60 IRIS provides a range of 2.2E-6 to 7.8E-6 (ug/m3)-1 as the inhalation URF for Benzene.

79 For evaluating partial lifetime exposures that include early-life exposure, the unit risk factor is also used in risk calculations that do not prorate the early-life exposure, per USEPA's May 2000 Toxicological Review.

90 Inadequate data exist to derive a toxicity value, according to the indicated reference.

111 Value as published is an MRL in the indicated reference.

159 Because the chemical has a mutagenic mode of action according to USEPA, the SF and URF are adjusted by the following age-dependent adjustment factors (ADAFs) before use: 10 for ages 0 to 2; 3 for ages 2 to 16; and 1 for ages 16 and older (USEPA 2005).

Attachment C.2: Physical and Chemical Properties
Whirlpool, Fort Smith, Arkansas

Chem Group	Chemical	CASRN	H (unitless)				D_{air} (m^2/d)		D_{water} (m^2/d)		HENRY Ref Temp (°C)
			Value	Adjusted	Ref	Notes	Value	Ref	Value	Ref	Value
VOC	Acetone	67-64-1	1.6E-03	1.1E-03	44		1.1E+00	44	9.8E-05	44	2.5E+01
VOC	Benzene	71-43-2	2.3E-01	1.6E-01	44		7.6E-01	44	8.5E-05	44	2.5E+01
VOC	Bromoform	75-25-2	2.2E-02	1.3E-02	44		1.3E-01	44	8.9E-05	44	2.5E+01
VOC	Bromomethane	74-83-9	2.6E-01	2.0E-01	44		6.3E-01	44	1.0E-04	44	2.5E+01
VOC	2-Butanone	78-93-3	2.3E-03	2.0E-03	50.3	123	7.0E-01	69	8.5E-05	69	2.0E+01
VOC	Carbon Disulfide	75-15-0	1.2E+00	9.3E-01	44		9.0E-01	44	8.6E-05	44	2.5E+01
VOC	Chlorobenzene	108-90-7	1.5E-01	9.8E-02	44		6.3E-01	44	7.5E-05	44	2.5E+01
VOC	Chloroform	67-66-3	1.5E-01	1.1E-01	44		9.0E-01	44	8.6E-05	44	2.5E+01
VOC	Chloromethane	74-87-3	3.6E-01	3.3E-01	50.1	92, 123	1.1E+00	69	5.6E-05	69	2.0E+01
VOC	1,2-Dichloroethane	107-06-2	4.0E-02	2.7E-02	44		9.0E-01	44	8.6E-05	44	2.5E+01
VOC	1,1-Dichloroethene	75-35-4	1.1E+00	8.1E-01	44		7.8E-01	44	9.0E-05	44	2.5E+01
VOC	cis-1,2-Dichloroethene	156-59-2	1.7E-01	1.2E-01	44		6.4E-01	44	9.8E-05	44	2.5E+01
VOC	trans-1,2-Dichloroethene	156-60-5	3.9E-01	2.8E-01	44		6.1E-01	44	1.0E-04	44	2.5E+01
VOC	Ethyl Benzene	100-41-4	3.2E-01	2.0E-01	44		6.5E-01	44	6.7E-05	44	2.5E+01
VOC	2-Hexanone	591-78-6	3.8E-03	3.2E-03	68		7.4E-01	52	7.6E-05	52	2.5E+01
VOC	4-Methyl-2-pentanone	108-10-1	5.6E-03	4.7E-03	50.3	123	6.5E-01	40	6.7E-05	40	2.0E+01
VOC	Methylene Chloride	75-09-2	9.0E-02	6.6E-02	44		8.7E-01	44	1.0E-04	44	2.5E+01
VOC	Toluene	108-88-3	2.7E-01	1.8E-01	44		7.5E-01	44	7.4E-05	44	2.5E+01
VOC	Trichloroethene	79-01-6	4.2E-01	2.9E-01	44		6.8E-01	44	7.9E-05	44	2.5E+01
VOC	Vinyl Chloride	75-01-4	1.1E+00	9.0E-01	44		9.2E-01	44	1.1E-04	71	2.5E+01

Physical and chemical parameters were selected following the hierarchy of sources used by USEPA (Soil Screening Guidance: Technical Background Document, 1996), as discussed in Appendix A, Section 54 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.

References:

40 Research Triangle Institute, Center for Environmental Analysis. 1995. Supplemental Technical Support Document for Hazardous Waste Identification Rule: Risk Assessment for Human and Ecological Receptors--Volume 1, TABLE A-1. November 1995.

44 USEPA. 1996. Soil Screening Guidance: Technical Background Document and User Guide. Office of Emergency and Remedial Response. EPA/540/R-95/128. May.

50.1 USEPA. 1997. Superfund Chemical Data Matrix (SCDM). Office of Emergency and Remedial Response. September 12.

50.3 USEPA. 20014. Superfund Chemical Data Matrix (SCDM). Office of Superfund Remediation and Technology Innovation. June 20, 2014.

52 USEPA. 1997. CHEM9 Compound Properties Estimation and Data. Version 1.00. Office of Air Quality Planning and Standards. July.

68 PHYSPROP data base. Syracuse Research Corporation.

69 USEPA. 2004. WATER9. Version 2.0.0. Office of Air Quality Planning and Standards. July.

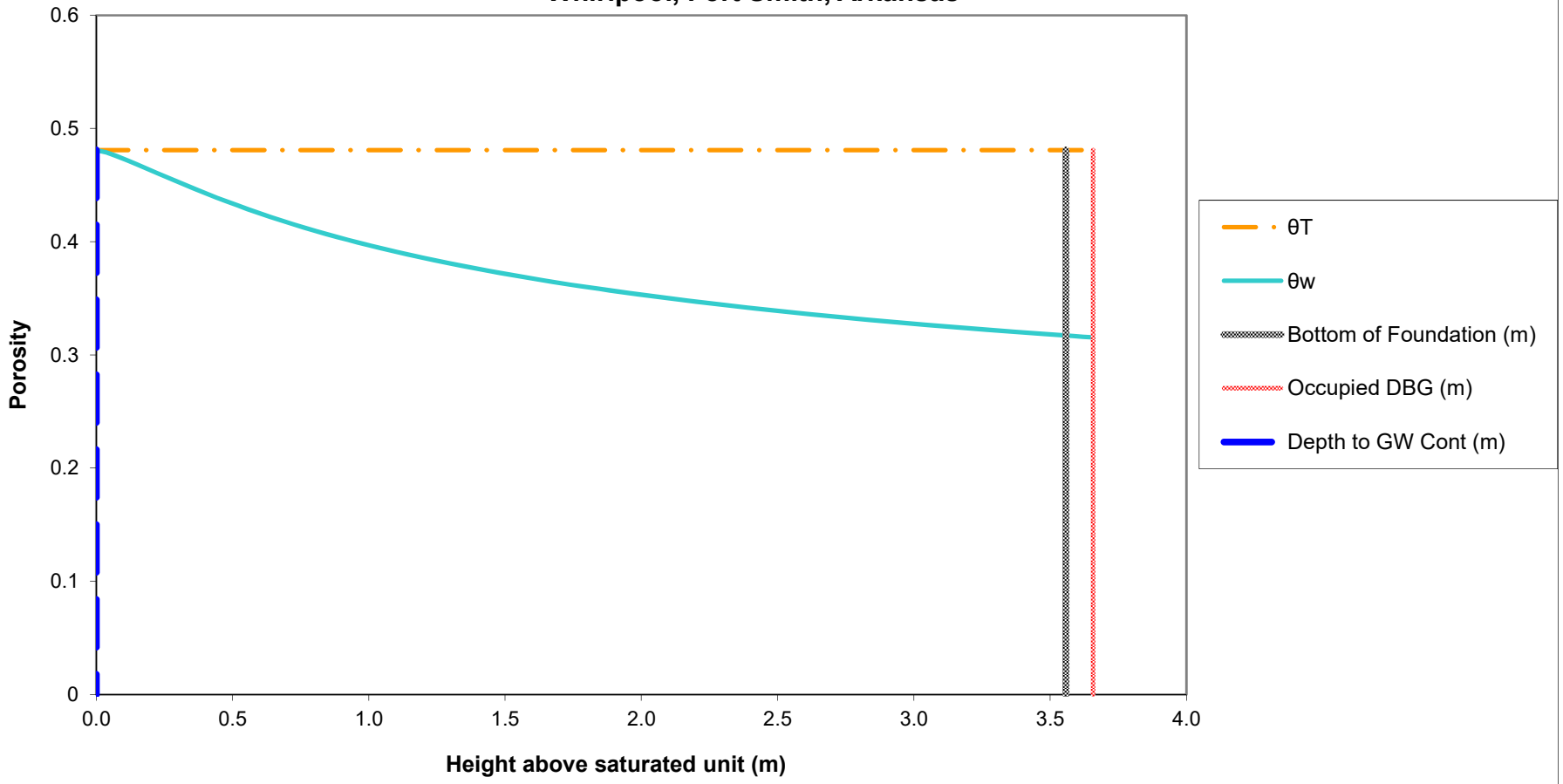
71 USEPA. 2002. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. Office of Solid Waste and Emergency Response. OSWER 9355.4-24. December.

Notes:

92 Indicated source cites CHEMFATE.

123 Value has been assigned a default reference temperature.

Attachment C.3: Soil Moisture Profile for Residential Building (Slab-on-Grade) for Risk Calculations from Groundwater at Monitoring Wells Whirlpool, Fort Smith, Arkansas



Notes:
The soil-water profile in the vadose zone is estimated using the van Genuchten soil-water retention equation with default water retention parameters appropriate for silt clay, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.

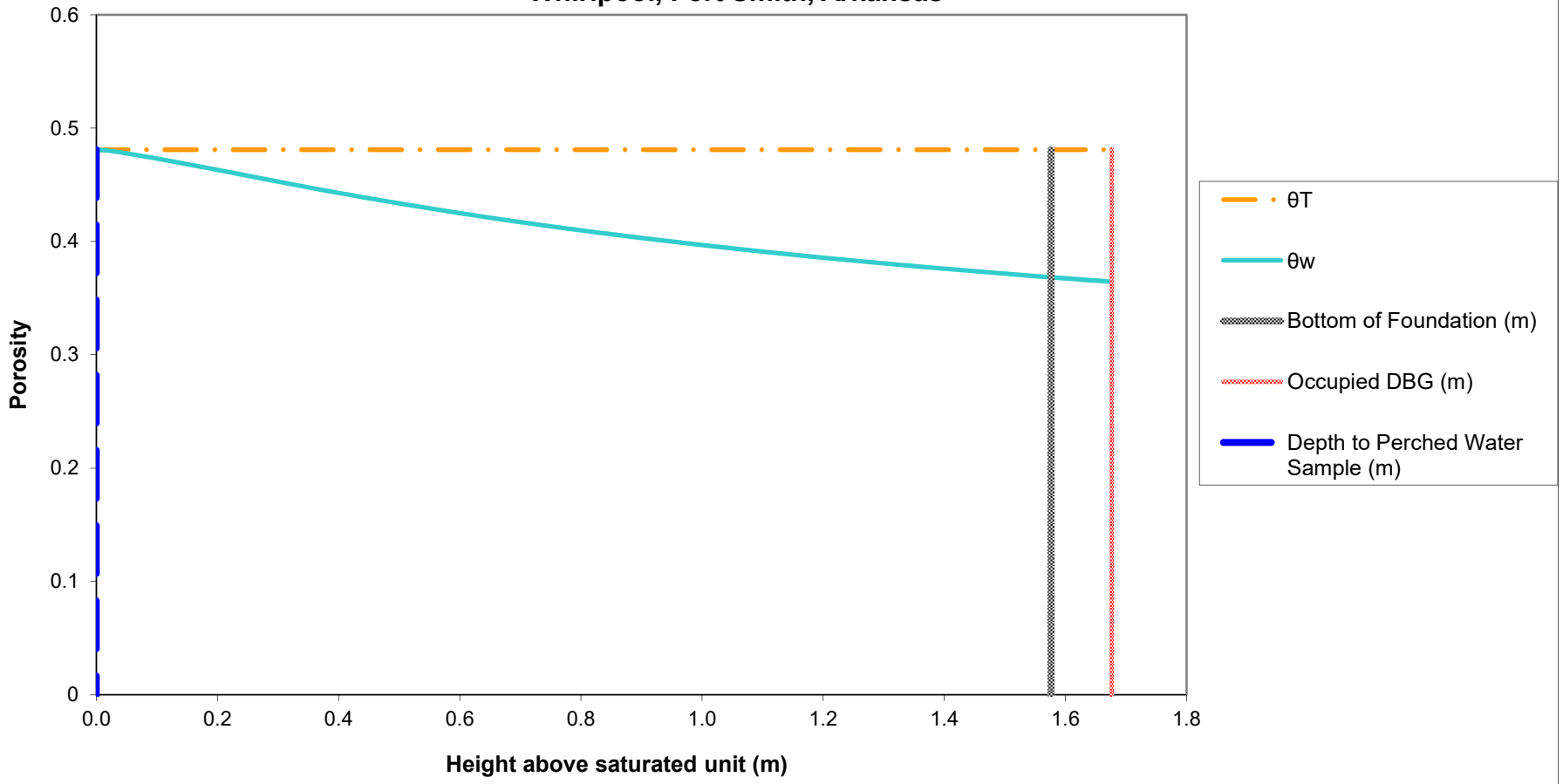
Attachment C.4: Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Groundwater at Monitoring Wells Whirlpool, Fort Smith, Arkansas

Chem Group	Chemical	CASRN	D_{air} (m^2/day)	D_{water} (m^2/day)	H (unitless)	D_{crack} (m^2/day)	D_{eff}^T (m^2/day)	α_{soil}	α_{slab}	α_∞	C_{bldg} (L-water/m^3)
VOC	Acetone	67-64-1	1.07E+00	9.85E-05	1.14E-03	1.72E-01	1.87E-02	6.80E-02	2.73E-03	1.86E-04	2.12E-04
VOC	Bromoform	75-25-2	1.29E-01	8.90E-05	1.34E-02	2.07E-02	1.64E-03	6.37E-03	2.73E-03	1.74E-05	2.33E-04
VOC	Bromomethane	74-83-9	6.29E-01	1.05E-04	2.01E-01	1.01E-01	7.43E-04	2.89E-03	2.73E-03	7.90E-06	1.59E-03
VOC	Carbon Disulfide	75-15-0	8.99E-01	8.64E-05	9.26E-01	1.44E-01	2.93E-04	1.14E-03	2.73E-03	3.12E-06	2.89E-03
VOC	Chlorobenzene	108-90-7	6.31E-01	7.52E-05	9.77E-02	1.01E-01	9.32E-04	3.63E-03	2.73E-03	9.91E-06	9.68E-04
VOC	Chloroform	67-66-3	8.99E-01	8.64E-05	1.07E-01	1.44E-01	1.11E-03	4.32E-03	2.73E-03	1.18E-05	1.27E-03
VOC	Chloromethane	74-87-3	1.09E+00	5.62E-05	3.33E-01	1.75E-01	4.61E-04	1.80E-03	2.73E-03	4.90E-06	1.63E-03
VOC	1,2-Dichloroethane	107-06-2	8.99E-01	8.55E-05	2.74E-02	1.44E-01	2.37E-03	9.19E-03	2.73E-03	2.51E-05	6.88E-04
VOC	1,1-Dichloroethene	75-35-4	7.78E-01	8.99E-05	8.10E-01	1.25E-01	3.12E-04	1.22E-03	2.73E-03	3.32E-06	2.69E-03
VOC	cis-1,2-Dichloroethene	156-59-2	6.36E-01	9.76E-05	1.19E-01	1.02E-01	9.72E-04	3.78E-03	2.73E-03	1.03E-05	1.22E-03
VOC	trans-1,2-Dichloroethene	156-60-5	6.11E-01	1.03E-04	2.81E-01	9.81E-02	5.96E-04	2.32E-03	2.73E-03	6.35E-06	1.79E-03
VOC	Trichloroethene	79-01-6	6.83E-01	7.86E-05	2.88E-01	1.10E-01	5.23E-04	2.04E-03	2.73E-03	5.57E-06	1.60E-03
VOC	Vinyl Chloride	75-01-4	9.16E-01	1.06E-04	9.00E-01	1.47E-01	3.44E-04	1.34E-03	2.73E-03	3.66E-06	3.30E-03
Notes:	**Crack Soil and Building Characteristics**			**Crack Soil**							
	SCS Soil texture class			Sand							
	Bulk density	kg/L	ρ_b	1.66							
	Total porosity	L/L-soil	θ_T	0.375							
	Water-filled porosity	L/L-soil	θ_w	0.054							
	Air-filled porosity	L/L-soil	θ_a	0.321							
	Residual saturation	L/L-soil	θ_r	0.053							
	Hydraulic conductivity	cm/s	**K**	7.4E-03							
	Dynamic viscosity of water	g/cm-s	μ_w	0.01307							
	Density of water	g/cm^3	ρ_w	1.0							
	Gravitational acceleration	cm/s^2	**g**	980.7							
	Intrinsic permeability	cm^2	**k**	9.9E-08							
	Relative saturation	unitless	S_e	0.004							
	van Genuchten N	unitless	**N**	3.177							
	van Genuchten M	unitless	**M**	0.685							
	Relative air permeability	unitless	k_{rg}	0.998							
	Permeability to vapor	cm^2	k_v	9.89E-08							
	Distance from building foundation to source	m	L_{T-gw}	3.56							
	Bldg foundation thickness	m	L_{crack}	0.1							
	Bldg foundation length	m		10.00							
	Bldg foundation width	m		10.00							
	Bldg occupied height	m		2.44							
	Bldg occupied volume	m^3		244.00							
	Occupied depth below ground	m		0.0							
	Bldg area for vapor intrusion	m^2	A_B	100.0							
	Ratio of A_{crack} to A_B		η	4E-04							
	Area of cracks	m^2	A_{crack}	4E-02							
	Air exchange rate	$hour^{-1}$	**ach**	0.45							
	Building ventilation rate	m^3/day	Q_{bldg}	2.64E+03							
	Soil gas flow rate into bldg	m^3/day	Q_{soil}	7.20							
	Indoor air concentrations resulting from groundwater vapor intrusion into a building are estimated using the relationships described by Johnson and Ettinger (Heuristic model for predicting the intrusion rate of contaminant vapors into buildings, 1991), which USEPA recommends for screening level calculations, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.										
	The effective diffusion term DeffT is calculated based on a silty clay soil, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Program.										

Attachment C.5: Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Groundwater Monitoring Wells in the Neighborhood Whirlpool, Fort Smith, Arkansas

							Cancer				Noncancer	
Chem Group	**Chemical**	**CASRN**	**Carc Class**	**ADAF**	**C_{gw}** (mg/L)	**$C_{building}$** (mg/m^3)	**URF** (m^3/mg)	**f_{inh}**	**Risk**		**RfC** (mg/m^3)	**HQ**
VOC	Acetone	67-64-1	ID	N	4.20E-03	8.90E-07					3.1E+01	2.8E-08
VOC	Bromoform	75-25-2	B2	N	7.90E-04	1.84E-07	1.1E-03		8.3E-11			
VOC	Bromomethane	74-83-9	ID	N	4.00E-04	6.35E-07					5.0E-03	1.2E-04
VOC	Carbon Disulfide	75-15-0		N	4.00E-04	1.16E-06					7.0E-01	1.6E-06
VOC	Chlorobenzene	108-90-7	D	N	1.70E-04	1.65E-07					5.0E-02	3.2E-06
VOC	Chloroform	67-66-3	B2	N	1.30E-04	1.65E-07	2.3E-02		1.6E-09		5.0E-02	3.2E-06
VOC	Chloromethane	74-87-3	D	N	5.00E-04	8.16E-07					9.0E-02	8.7E-06
VOC	1,2-Dichloroethane	107-06-2	B2	N	1.40E-04	9.63E-08	2.6E-02		1.0E-09		7.0E-03	1.3E-05
VOC	1,1-Dichloroethene	75-35-4	C	N	2.40E-03	6.46E-06					2.0E-01	3.1E-05
VOC	cis-1,2-Dichloroethene	156-59-2	ID	N	2.88E-02	3.53E-05						
VOC	trans-1,2-Dichloroethene	156-60-5	ID	N	7.20E-04	1.29E-06						
VOC	Trichloroethene	79-01-6	HC	Y	6.49E-01	1.04E-03	4.1E-03	0.2439	2.4E-06		2.0E-03	5.0E-01
VOC	Vinyl Chloride	75-01-4	A	N	1.65E-02	5.44E-05	4.4E-03		3.4E-07		1.0E-01	5.2E-04
							Cumulative Risk:		3E-06		**HI:**	5E-01
Note:												
f_{inh} is the fraction of the inhalation URF that USEPA identified as having a mutagenic mode of action.												
Only VOCs detected in the Annual 2019 groundwater samples from wells in the neighborhood are shown.												
Risks were calculated assuming residential exposure to groundwater-derived vapors in indoor air for 24 hours per day and 350 days per year for 30 years.												

Attachment C.6: Soil Moisture Profile for Residential Building (Slab-on-Grade) at Soil Vapor Monitoring Point VP-7 (Parcel 2) Whirlpool, Fort Smith, Arkansas



Notes:
The soil-water profile in the vadose zone is estimated using the van Genuchten soil-water retention equation with default water retention parameters appropriate for silt clay, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.

Attachment C.7: Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at VP-7 (Parcel 2) Whirlpool, Fort Smith, Arkansas

Chem Group	Chemical	CASRN	D_{air} (m^2/day)	D_{water} (m^2/day)	H (unitless)	D_{crack} (m^2/day)	D_{eff}^T (m^2/day)	α_{soil}	α_{slab}	α_{∞}	C_{bldg} (L-water/m^3)
VOC	Acetone	67-64-1	1.07E+00	9.85E-05	1.14E-03	1.61E-01	2.07E-02	1.54E-01	2.73E-03	4.21E-04	4.80E-04
VOC	Benzene	71-43-2	7.60E-01	8.47E-05	1.59E-01	1.14E-01	4.01E-04	3.52E-03	2.73E-03	9.63E-06	1.53E-03
VOC	2-Butanone	78-93-3	6.98E-01	8.47E-05	2.00E-03	1.05E-01	1.04E-02	8.37E-02	2.73E-03	2.29E-04	4.57E-04
VOC	Chloromethane	74-87-3	1.09E+00	5.62E-05	3.33E-01	1.64E-01	2.12E-04	1.87E-03	2.73E-03	5.10E-06	1.70E-03
VOC	2-Hexanone	591-78-6	7.45E-01	7.57E-05	3.23E-03	1.12E-01	6.14E-03	5.14E-02	2.73E-03	1.40E-04	4.54E-04
VOC	4-Methyl-2-pentanone	108-10-1	6.48E-01	6.74E-05	4.71E-03	9.74E-02	3.96E-03	3.37E-02	2.73E-03	9.21E-05	4.34E-04
VOC	Toluene	108-88-3	7.52E-01	7.43E-05	1.80E-01	1.13E-01	3.38E-04	2.97E-03	2.73E-03	8.11E-06	1.46E-03

Notes:	Crack Soil and Building Characteristics			Crack Soil
	SCS Soil texture class			Sand
	Bulk density	kg/L	ρ_b	1.66
	Total porosity	L/L-soil	θ_T	0.375
	Water-filled porosity	L/L-soil	θ_w	0.061
	Air-filled porosity	L/L-soil	θ_a	0.314
	Residual saturation	L/L-soil	θ_r	0.053
	Hydraulic conductivity	cm/s	K	7.4E-03
	Dynamic viscosity of water	g/cm-s	μ_w	0.01307
	Density of water	g/cm^3	ρ_w	1.0
	Gravitational acceleration	cm/s^2	g	980.7
	Intrinsic permeability	cm^2	k	9.9E-08
	Relative saturation	unitless	S_e	0.023
	van Genuchten N	unitless	N	3.177
	van Genuchten M	unitless	M	0.685
	Relative air permeability	unitless	k_{rg}	0.983
	Permeability to vapor	cm^2	k_v	9.74E-08
	Distance from building foundation to source	m	L_{T-gw}	1.58
	Bldg foundation thickness	m	L_{crack}	0.1
	Bldg foundation length	m		10.00
	Bldg foundation width	m		10.00
	Bldg occupied height	m		2.44
	Bldg occupied volume	m^3		244.00
	Occupied depth below ground	m		0.0
	Bldg area for vapor intrusion	m^2	A_B	100.0
	Ratio of A_{crack} to A_B		η	4E-04
	Area of cracks	m^2	A_{crack}	4E-02
	Air exchange rate	$hour^{-1}$	ach	0.45
	Building ventilation rate	m^3/day	Q_{bldg}	2.64E+03
	Soil gas flow rate into bldg	m^3/day	Q_{soil}	7.20

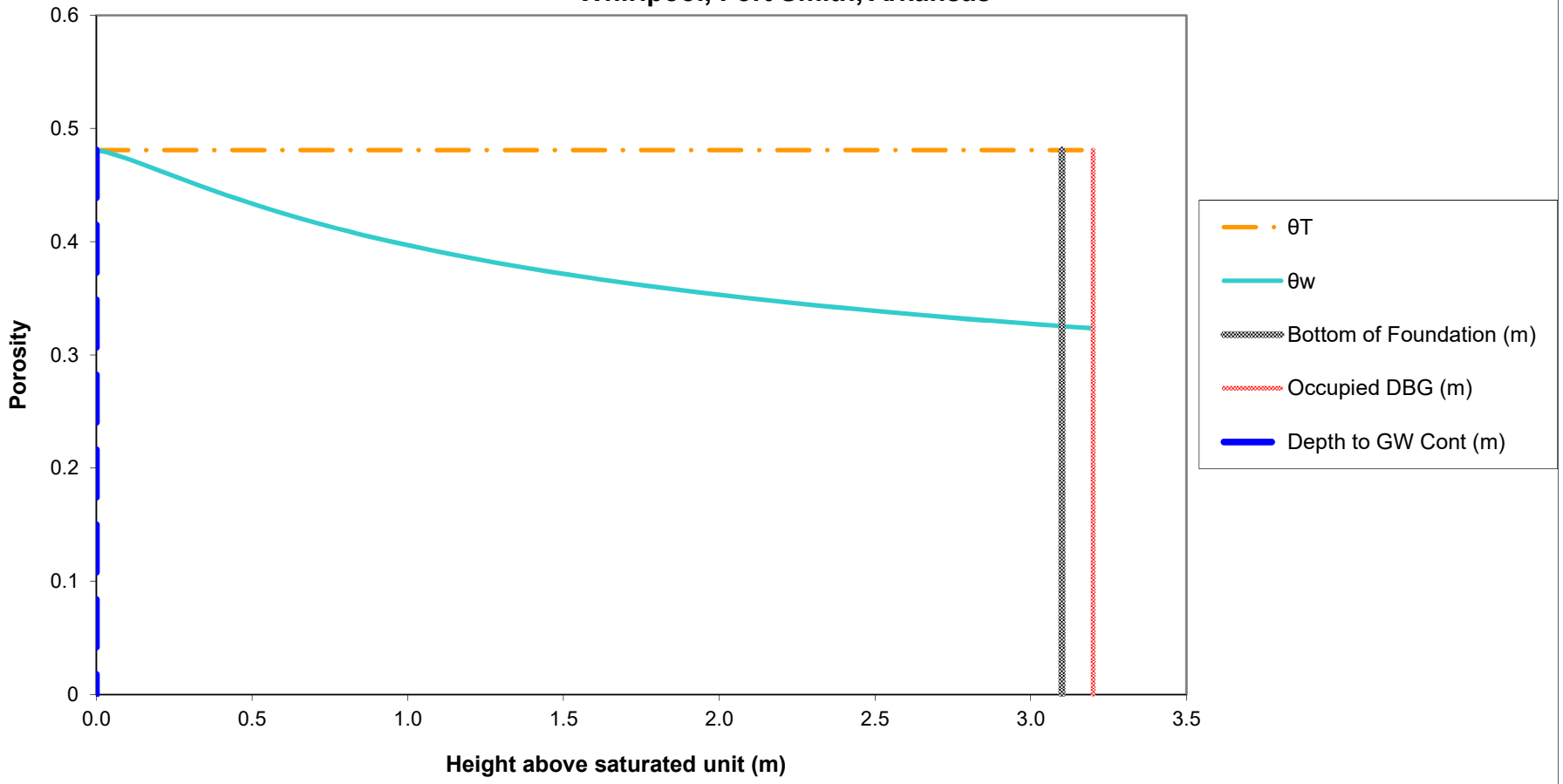
Indoor air concentrations resulting from groundwater vapor intrusion into a building are estimated using the relationships described by Johnson and Ettinger (Heuristic model for predicting the intrusion rate of contaminant vapors into buildings, 1991), which USEPA recommends for screening level calculations, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.

The effective diffusion term DeffT is calculated based on a silty clay soil, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Program.

Attachment C.8: Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at VP-7 (Parcel 2) Whirlpool, Fort Smith, Arkansas

							Cancer				Noncancer	
Chem Group	**Chemical**	**CASRN**	**Carc Class**	**ADAF**	**C_{gw}** (mg/L)	**$C_{building}$** (mg/m^3)	**URF** (m^3/mg)	**f_{inh}**	**Risk**		**RfC** (mg/m^3)	**HQ**
VOC	Acetone	67-64-1	ID	N	1.43E-01	6.87E-05					3.1E+01	2.1E-06
VOC	Benzene	71-43-2	A	N	1.00E-03	1.53E-06	7.8E-03		4.9E-09		3.0E-02	4.9E-05
VOC	2-Butanone	78-93-3	ID	N	1.47E-02	6.72E-06					5.0E+00	1.3E-06
VOC	Chloromethane	74-87-3	D	N	4.00E-04	6.79E-07					9.0E-02	7.2E-06
VOC	2-Hexanone	591-78-6	ID	N	1.60E-03	7.26E-07					3.0E-02	2.3E-05
VOC	4-Methyl-2-pentanone	108-10-1	ID	N	1.80E-03	7.81E-07					3.0E+00	2.5E-07
VOC	Toluene	108-88-3	ID	N	2.80E-04	4.10E-07					5.0E+00	7.9E-08
							Cumulative Risk:		5E-09		**HI:**	8E-05
Note:												
f_{inh} is the fraction of the inhalation URF that USEPA identified as having a mutagenic mode of action.												
Only VOCs detected in the Annual 2019 water sample at VP-7 (Parcel 2) are shown.												
Risks were calculated assuming residential exposure to groundwater-derived vapors in indoor air for 24 hours per day and 350 days per year for 30 years.												

Attachment C.9: Soil Moisture Profile for Residential Building (Slab-on-Grade) at Soil Vapor Monitoring Point VP-8 (Parcel 2) Whirlpool, Fort Smith, Arkansas



Notes:
The soil-water profile in the vadose zone is estimated using the van Genuchten soil-water retention equation with default water retention parameters appropriate for silt clay, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.

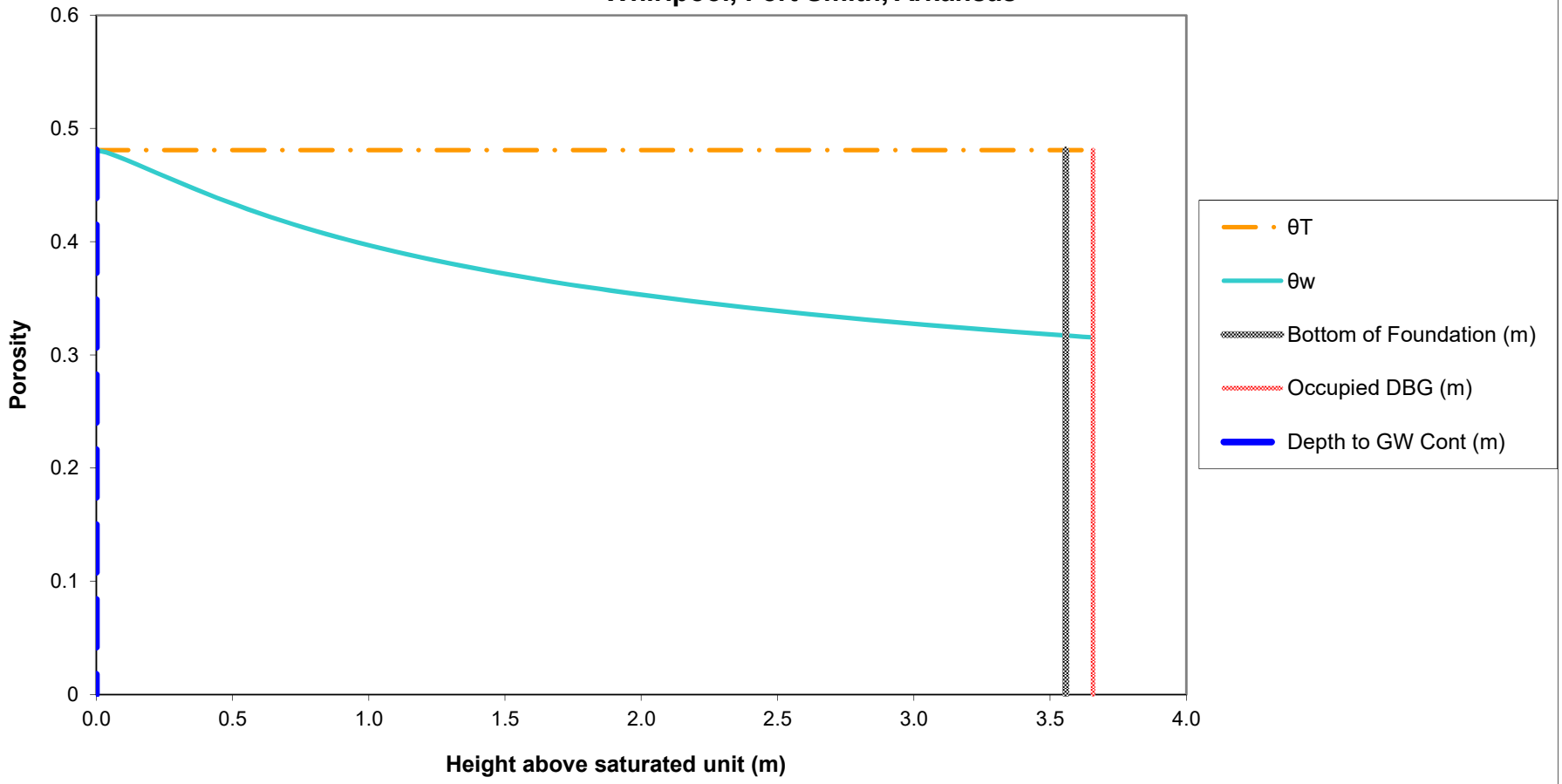
Attachment C.10: Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at VP-8 (Parcel 2) Whirlpool, Fort Smith, Arkansas

Chem Group	Chemical	CASRN	D_{air} (m^2/day)	D_{water} (m^2/day)	H (unitless)	D_{crack} (m^2/day)	D_{eff}^T (m^2/day)	α_{soil}	α_{slab}	α_{∞}	C_{bldg} (L-water/m^3)
VOC	Acetone	67-64-1	1.07E+00	9.85E-05	1.14E-03	1.71E-01	1.87E-02	7.73E-02	2.73E-03	2.11E-04	2.41E-04
VOC	Benzene	71-43-2	7.60E-01	8.47E-05	1.59E-01	1.21E-01	7.17E-04	3.20E-03	2.73E-03	8.74E-06	1.39E-03
VOC	2-Butanone	78-93-3	6.98E-01	8.47E-05	2.00E-03	1.12E-01	9.82E-03	4.21E-02	2.73E-03	1.15E-04	2.30E-04
VOC	Chloromethane	74-87-3	1.09E+00	5.62E-05	3.33E-01	1.74E-01	4.01E-04	1.79E-03	2.73E-03	4.90E-06	1.63E-03
VOC	cis-1,2-Dichloroethene	156-59-2	6.36E-01	9.76E-05	1.19E-01	1.02E-01	8.60E-04	3.84E-03	2.73E-03	1.05E-05	1.24E-03
VOC	2-Hexanone	591-78-6	7.45E-01	7.57E-05	3.23E-03	1.19E-01	6.59E-03	2.87E-02	2.73E-03	7.83E-05	2.53E-04
VOC	4-Methyl-2-pentanone	108-10-1	6.48E-01	6.74E-05	4.71E-03	1.04E-01	4.55E-03	2.00E-02	2.73E-03	5.46E-05	2.57E-04
VOC	Toluene	108-88-3	7.52E-01	7.43E-05	1.80E-01	1.20E-01	6.11E-04	2.73E-03	2.73E-03	7.46E-06	1.35E-03
VOC	Trichloroethene	79-01-6	6.83E-01	7.86E-05	2.88E-01	1.09E-01	4.58E-04	2.05E-03	2.73E-03	5.59E-06	1.61E-03
VOC	Vinyl Chloride	75-01-4	9.16E-01	1.06E-04	9.00E-01	1.46E-01	2.99E-04	1.34E-03	2.73E-03	3.66E-06	3.29E-03
Notes:	**Crack Soil and Building Characteristics**			**Crack Soil**							
	SCS Soil texture class			Sand							
	Bulk density	kg/L	ρ_b	1.66							
	Total porosity	L/L-soil	θ_T	0.375							
	Water-filled porosity	L/L-soil	θ_w	0.055							
	Air-filled porosity	L/L-soil	θ_a	0.320							
	Residual saturation	L/L-soil	θ_r	0.053							
	Hydraulic conductivity	cm/s	K	7.4E-03							
	Dynamic viscosity of water	g/cm-s	μ_w	0.01307							
	Density of water	g/cm^3	ρ_w	1.0							
	Gravitational acceleration	cm/s^2	g	980.7							
	Intrinsic permeability	cm^2	k	9.9E-08							
	Relative saturation	unitless	S_e	0.005							
	van Genuchten N	unitless	N	3.177							
	van Genuchten M	unitless	M	0.685							
	Relative air permeability	unitless	k_{rg}	0.997							
	Permeability to vapor	cm^2	k_v	9.88E-08							
	Distance from building foundation to source	m	L_{T-gw}	3.10							
	Bldg foundation thickness	m	L_{crack}	0.1							
	Bldg foundation length	m		10.00							
	Bldg foundation width	m		10.00							
	Bldg occupied height	m		2.44							
	Bldg occupied volume	m^3		244.00							
	Occupied depth below ground	m		0.0							
	Bldg area for vapor intrusion	m^2	A_B	100.0							
	Ratio of A_{crack} to A_B		η	4E-04							
	Area of cracks	m^2	A_{crack}	4E-02							
	Air exchange rate	$hour^{-1}$	ach	0.45							
	Building ventilation rate	m^3/day	Q_{bldg}	2.64E+03							
	Soil gas flow rate into bldg	m^3/day	Q_{soil}	7.20							
	Indoor air concentrations resulting from groundwater vapor intrusion into a building are estimated using the relationships described by Johnson and Ettinger (Heuristic model for predicting the intrusion rate of contaminant vapors into buildings, 1991), which USEPA recommends for screening level calculations, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.										
	The effective diffusion term DeffT is calculated based on a silty clay soil, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Program.										

Attachment C.11: Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at VP-8 (Parcel 2) Whirlpool, Fort Smith, Arkansas

							Cancer				Noncancer	
Chem Group	**Chemical**	**CASRN**	**Carc Class**	**ADAF**	**C_{gw}** (mg/L)	**$C_{building}$** (mg/m^3)	**URF** (m^3/mg)	**f_{inh}**	**Risk**		**RfC** (mg/m^3)	**HQ**
VOC	Acetone	67-64-1	ID	N	1.62E-01	3.90E-05					3.1E+01	1.2E-06
VOC	Benzene	71-43-2	A	N	9.00E-04	1.25E-06	7.8E-03		4.0E-09		3.0E-02	4.0E-05
VOC	2-Butanone	78-93-3	ID	N	1.86E-02	4.28E-06					5.0E+00	8.2E-07
VOC	Chloromethane	74-87-3	D	N	6.60E-04	1.08E-06					9.0E-02	1.1E-05
VOC	cis-1,2-Dichloroethene	156-59-2	ID	N	2.30E-04	2.86E-07						
VOC	2-Hexanone	591-78-6	ID	N	3.40E-03	8.61E-07					3.0E-02	2.8E-05
VOC	4-Methyl-2-pentanone	108-10-1	ID	N	1.50E-03	3.86E-07					3.0E+00	1.2E-07
VOC	Toluene	108-88-3	ID	N	5.00E-04	6.73E-07					5.0E+00	1.3E-07
VOC	Trichloroethene	79-01-6	HC	Y	5.80E-03	9.34E-06	4.1E-03	0.2439	2.2E-08		2.0E-03	4.5E-03
VOC	Vinyl Chloride	75-01-4	A	N	2.60E-04	8.56E-07	4.4E-03		5.3E-09		1.0E-01	8.2E-06
							Cumulative Risk:		3E-08		**HI:**	5E-03
Note:												
f_{inh} is the fraction of the inhalation URF that USEPA identified as having a mutagenic mode of action.												
Only VOCs detected in the Annual 2019 water sample at VP-8 (Parcel 2) are shown.												
Risks were calculated assuming residential exposure to groundwater-derived vapors in indoor air for 24 hours per day and 350 days per year for 30 years.												

Attachment C.12: Soil Moisture Profile for Residential Building (Slab-on-Grade) at Groundwater Monitoring Well MW-175 (Parcel 2) Whirlpool, Fort Smith, Arkansas



Notes:
The soil-water profile in the vadose zone is estimated using the van Genuchten soil-water retention equation with default water retention parameters appropriate for silt clay, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.

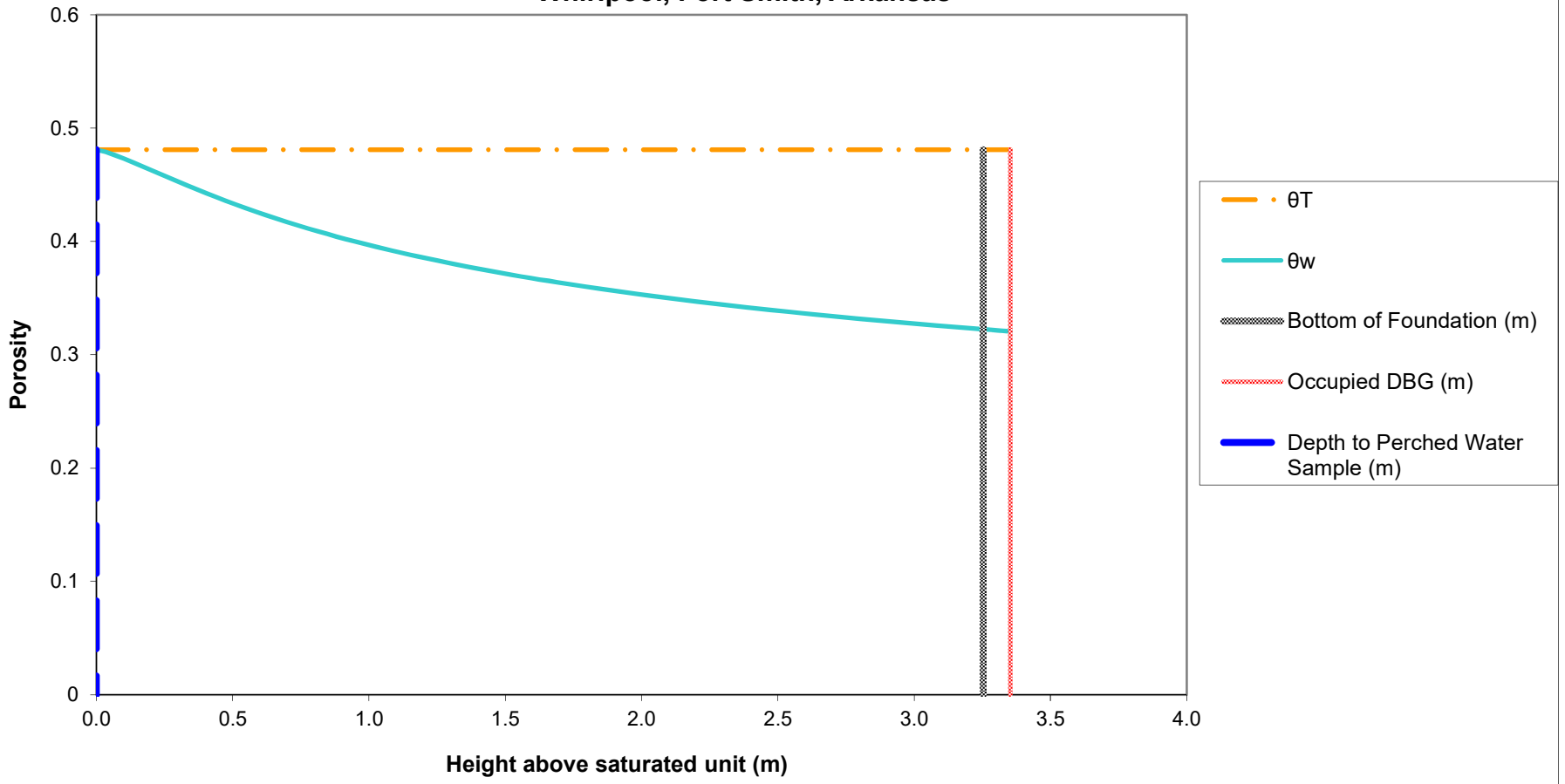
Attachment C.13: Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Groundwater at MW-175 (Parcel 2) Whirlpool, Fort Smith, Arkansas

Chem Group	Chemical	CASRN	D_{air} (m^2/day)	D_{water} (m^2/day)	H (unitless)	D_{crack} (m^2/day)	D_{eff}^T (m^2/day)	α_{soil}	α_{slab}	α_{∞}	C_{bldg} (L-water/m^3)
VOC	Carbon Disulfide	75-15-0	8.99E-01	8.64E-05	9.26E-01	1.44E-01	2.93E-04	1.14E-03	2.73E-03	3.12E-06	2.89E-03
VOC	1,1-Dichloroethene	75-35-4	7.78E-01	8.99E-05	8.10E-01	1.25E-01	3.12E-04	1.22E-03	2.73E-03	3.32E-06	2.69E-03
VOC	cis-1,2-Dichloroethene	156-59-2	6.36E-01	9.76E-05	1.19E-01	1.02E-01	9.72E-04	3.78E-03	2.73E-03	1.03E-05	1.22E-03
VOC	Trichloroethene	79-01-6	6.83E-01	7.86E-05	2.88E-01	1.10E-01	5.23E-04	2.04E-03	2.73E-03	5.57E-06	1.60E-03
VOC	Vinyl Chloride	75-01-4	9.16E-01	1.06E-04	9.00E-01	1.47E-01	3.44E-04	1.34E-03	2.73E-03	3.66E-06	3.30E-03
Notes:	**Crack Soil and Building Characteristics**			**Crack Soil**							
	SCS Soil texture class			Sand							
	Bulk density	kg/L	ρ_b	1.66							
	Total porosity	L/L-soil	θ_T	0.375							
	Water-filled porosity	L/L-soil	θ_w	0.054							
	Air-filled porosity	L/L-soil	θ_a	0.321							
	Residual saturation	L/L-soil	θ_r	0.053							
	Hydraulic conductivity	cm/s	K	7.4E-03							
	Dynamic viscosity of water	g/cm-s	μ_w	0.01307							
	Density of water	g/cm^3	ρ_w	1.0							
	Gravitational acceleration	cm/s^2	g	980.7							
	Intrinsic permeability	cm^2	k	9.9E-08							
	Relative saturation	unitless	S_e	0.004							
	van Genuchten N	unitless	N	3.177							
	van Genuchten M	unitless	M	0.685							
	Relative air permeability	unitless	k_{rg}	0.998							
	Permeability to vapor	cm^2	k_v	9.89E-08							
	Distance from building foundation to source	m	L_{T-gw}	3.56							
	Bldg foundation thickness	m	L_{crack}	0.1							
	Bldg foundation length	m		10.00							
	Bldg foundation width	m		10.00							
	Bldg occupied height	m		2.44							
	Bldg occupied volume	m^3		244.00							
	Occupied depth below ground	m		0.0							
	Bldg area for vapor intrusion	m^2	A_B	100.0							
	Ratio of A_{crack} to A_B		η	4E-04							
	Area of cracks	m^2	A_{crack}	4E-02							
	Air exchange rate	$hour^{-1}$	ach	0.45							
	Building ventilation rate	m^3/day	Q_{bldg}	2.64E+03							
	Soil gas flow rate into bldg	m^3/day	Q_{soil}	7.20							
	Indoor air concentrations resulting from groundwater vapor intrusion into a building are estimated using the relationships described by Johnson and Ettinger (Heuristic model for predicting the intrusion rate of contaminant vapors into buildings, 1991), which USEPA recommends for screening level calculations, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.										
	The effective diffusion term DeffT is calculated based on a silty clay soil, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Program.										

Attachment C.14: Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Groundwater at MW-175 (Parcel 2) Whirlpool, Fort Smith, Arkansas

							Cancer				Noncancer	
Chem Group	**Chemical**	**CASRN**	**Carc Class**	**ADAF**	**C_{gw}** (mg/L)	**$C_{building}$** (mg/m^3)	**URF** (m^3/mg)	**f_{inh}**	**Risk**		**RfC** (mg/m^3)	**HQ**
VOC	Carbon Disulfide	75-15-0		N	4.00E-04	1.16E-06					7.0E-01	1.6E-06
VOC	1,1-Dichloroethene	75-35-4	C	N	5.90E-04	1.59E-06					2.0E-01	7.6E-06
VOC	cis-1,2-Dichloroethene	156-59-2	ID	N	2.20E-03	2.69E-06						
VOC	Trichloroethene	79-01-6	HC	Y	1.38E-01	2.21E-04	4.1E-03	0.2439	5.1E-07		2.0E-03	1.1E-01
VOC	Vinyl Chloride	75-01-4	A	N	1.60E-04	5.28E-07	4.4E-03		3.3E-09		1.0E-01	5.1E-06
							Cumulative Risk:		5E-07		**HI:**	1E-01
Note:												
f_{inh} is the fraction of the inhalation URF that USEPA identified as having a mutagenic mode of action.												
Only VOCs detected in the Annual 2019 groundwater sample at MW-175 (Parcel 2) are shown.												
Risks were calculated assuming residential exposure to groundwater-derived vapors in indoor air for 24 hours per day and 350 days per year for 30 years.												

Attachment C.15: Soil Moisture Profile for Residential Building (Slab-on-Grade) at Soil Vapor Monitoring Point VP-10 (Parcel 3) Whirlpool, Fort Smith, Arkansas



Notes:
The soil-water profile in the vadose zone is estimated using the van Genuchten soil-water retention equation with default water retention parameters appropriate for silt clay, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.

Attachment C.16: Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at VP-10 (Parcel 3) Whirlpool, Fort Smith, Arkansas

Chem Group	Chemical	CASRN	D_{air} (m^2/day)	D_{water} (m^2/day)	H (unitless)	D_{crack} (m^2/day)	D_{eff}^T (m^2/day)	α_{soil}	α_{slab}	α_{∞}	C_{bldg} (L-water/m^3)
VOC	Acetone	67-64-1	1.07E+00	9.85E-05	1.14E-03	1.72E-01	1.87E-02	7.39E-02	2.73E-03	2.02E-04	2.30E-04
VOC	Benzene	71-43-2	7.60E-01	8.47E-05	1.59E-01	1.22E-01	7.54E-04	3.21E-03	2.73E-03	8.77E-06	1.39E-03
VOC	2-Butanone	78-93-3	6.98E-01	8.47E-05	2.00E-03	1.12E-01	9.86E-03	4.04E-02	2.73E-03	1.10E-04	2.21E-04
VOC	Chloroform	67-66-3	8.99E-01	8.64E-05	1.07E-01	1.44E-01	1.03E-03	4.38E-03	2.73E-03	1.20E-05	1.28E-03
VOC	1,1-Dichloroethene	75-35-4	7.78E-01	8.99E-05	8.10E-01	1.25E-01	2.87E-04	1.22E-03	2.73E-03	3.34E-06	2.71E-03
VOC	cis-1,2-Dichloroethene	156-59-2	6.36E-01	9.76E-05	1.19E-01	1.02E-01	9.03E-04	3.84E-03	2.73E-03	1.05E-05	1.24E-03
VOC	trans-1,2-Dichloroethene	156-60-5	6.11E-01	1.03E-04	2.81E-01	9.78E-02	5.51E-04	2.35E-03	2.73E-03	6.41E-06	1.81E-03
VOC	Ethyl Benzene	100-41-4	6.48E-01	6.74E-05	2.04E-01	1.04E-01	5.31E-04	2.26E-03	2.73E-03	6.18E-06	1.26E-03
VOC	4-Methyl-2-pentanone	108-10-1	6.48E-01	6.74E-05	4.71E-03	1.04E-01	4.65E-03	1.95E-02	2.73E-03	5.32E-05	2.51E-04
VOC	Methylene Chloride	75-09-2	8.73E-01	1.01E-04	6.60E-02	1.40E-01	1.47E-03	6.25E-03	2.73E-03	1.71E-05	1.13E-03
VOC	Toluene	108-88-3	7.52E-01	7.43E-05	1.80E-01	1.20E-01	6.43E-04	2.74E-03	2.73E-03	7.49E-06	1.35E-03
VOC	Trichloroethene	79-01-6	6.83E-01	7.86E-05	2.88E-01	1.09E-01	4.82E-04	2.06E-03	2.73E-03	5.62E-06	1.62E-03
VOC	Vinyl Chloride	75-01-4	9.16E-01	1.06E-04	9.00E-01	1.47E-01	3.16E-04	1.35E-03	2.73E-03	3.68E-06	3.31E-03

Notes:	Crack Soil and Building Characteristics			Crack Soil
	SCS Soil texture class			Sand
	Bulk density	kg/L	ρ_b	1.66
	Total porosity	L/L-soil	θ_T	0.375
	Water-filled porosity	L/L-soil	θ_w	0.055
	Air-filled porosity	L/L-soil	θ_a	0.320
	Residual saturation	L/L-soil	θ_r	0.053
	Hydraulic conductivity	cm/s	**K**	7.4E-03
	Dynamic viscosity of water	g/cm-s	μ_w	0.01307
	Density of water	g/cm^3	ρ_w	1.0
	Gravitational acceleration	cm/s^2	**g**	980.7
	Intrinsic permeability	cm^2	**k**	9.9E-08
	Relative saturation	unitless	S_e	0.005
	van Genuchten N	unitless	**N**	3.177
	van Genuchten M	unitless	**M**	0.685
	Relative air permeability	unitless	k_{rg}	0.997
	Permeability to vapor	cm^2	k_v	9.89E-08
	Distance from building foundation to source	m	L_{T-gw}	3.25
	Bldg foundation thickness	m	L_{crack}	0.1
	Bldg foundation length	m		10.00
	Bldg foundation width	m		10.00
	Bldg occupied height	m		2.44
	Bldg occupied volume	m^3		244.00
	Occupied depth below ground	m		0.0
	Bldg area for vapor intrusion	m^2	A_B	100.0
	Ratio of A_{crack} to A_B		η	4E-04
	Area of cracks	m^2	A_{crack}	4E-02
	Air exchange rate	$hour^{-1}$	**ach**	0.45
	Building ventilation rate	m^3/day	Q_{bldg}	2.64E+03
	Soil gas flow rate into bldg	m^3/day	Q_{soil}	7.20

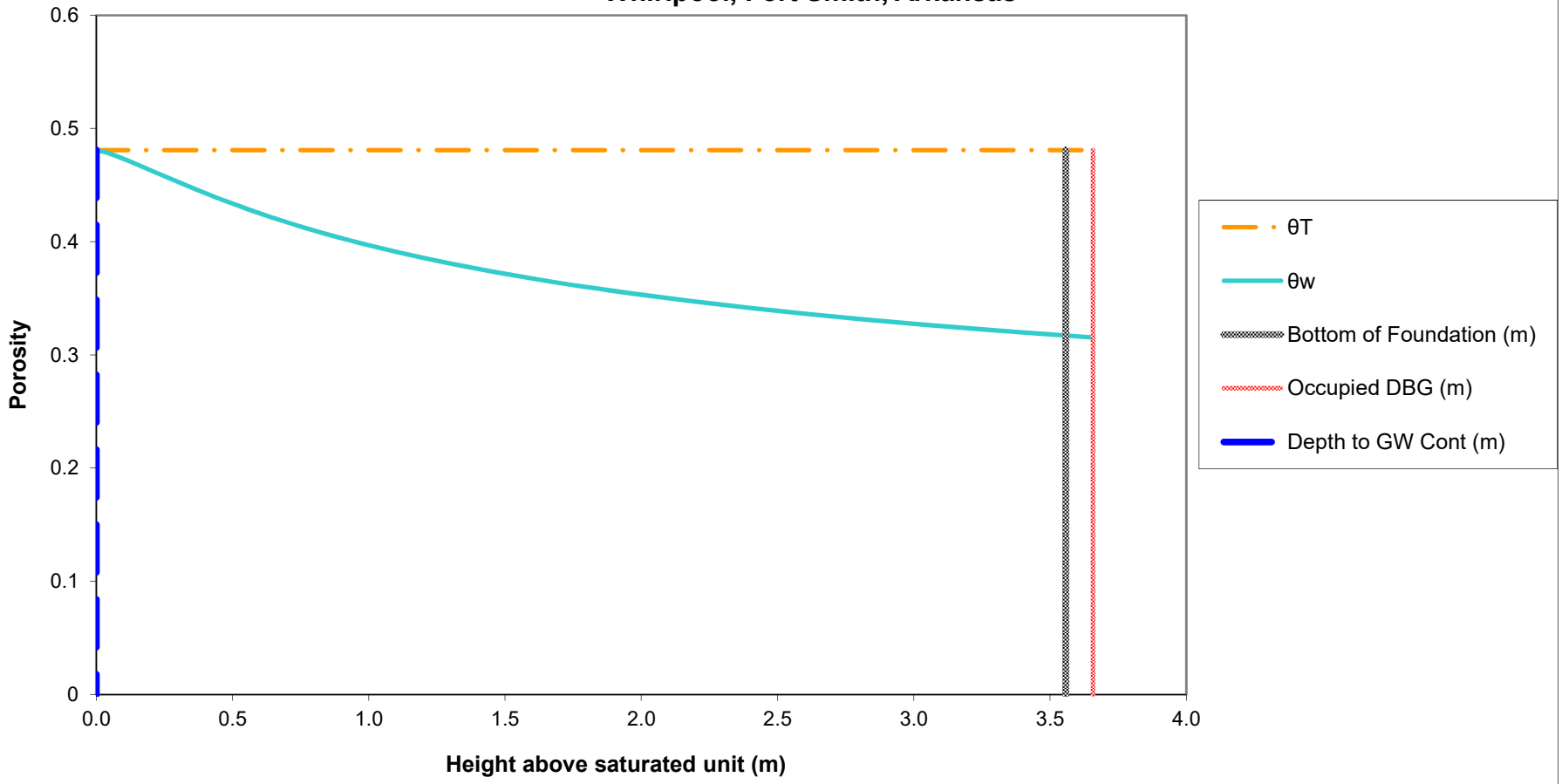
Indoor air concentrations resulting from groundwater vapor intrusion into a building are estimated using the relationships described by Johnson and Ettinger (Heuristic model for predicting the intrusion rate of contaminant vapors into buildings, 1991), which USEPA recommends for screening level calculations, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.

The effective diffusion term DeffT is calculated based on a silty clay soil, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Program.

Attachment C.17: Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at VP-10 (Parcel 3) Whirlpool, Fort Smith, Arkansas

							Cancer				Noncancer	
Chem Group	**Chemical**	**CASRN**	**Carc Class**	**ADAF**	**C_{gw}** (mg/L)	**$C_{building}$** (mg/m^3)	**URF** (m^3/mg)	**f_{inh}**	**Risk**		**RfC** (mg/m^3)	**HQ**
VOC	Acetone	67-64-1	ID	N	1.51E-02	3.47E-06					3.1E+01	1.1E-07
VOC	Benzene	71-43-2	A	N	5.00E-04	6.97E-07	7.8E-03		2.2E-09		3.0E-02	2.2E-05
VOC	2-Butanone	78-93-3	ID	N	5.40E-03	1.19E-06					5.0E+00	2.3E-07
VOC	Chloroform	67-66-3	B2	N	2.90E-03	3.73E-06	2.3E-02		3.5E-08		5.0E-02	7.1E-05
VOC	1,1-Dichloroethene	75-35-4	C	N	1.40E-03	3.79E-06					2.0E-01	1.8E-05
VOC	cis-1,2-Dichloroethene	156-59-2	ID	N	1.19E-02	1.48E-05						
VOC	trans-1,2-Dichloroethene	156-60-5	ID	N	3.00E-04	5.42E-07						
VOC	Ethyl Benzene	100-41-4	D	N	1.50E-04	1.89E-07					1.0E+00	1.8E-07
VOC	4-Methyl-2-pentanone	108-10-1	ID	N	8.30E-04	2.08E-07					3.0E+00	6.6E-08
VOC	Methylene Chloride	75-09-2	LC	Y	3.10E-04	3.49E-07	1.0E-05	1	3.6E-12		6.0E-01	5.6E-07
VOC	Toluene	108-88-3	ID	N	1.10E-03	1.49E-06					5.0E+00	2.8E-07
VOC	Trichloroethene	79-01-6	HC	Y	3.30E-03	5.34E-06	4.1E-03	0.2439	1.2E-08		2.0E-03	2.6E-03
VOC	Vinyl Chloride	75-01-4	A	N	5.20E-04	1.72E-06	4.4E-03		1.1E-08		1.0E-01	1.7E-05
							Cumulative Risk:		6E-08		**HI:**	3E-03
Note:												
f_{inh} is the fraction of the inhalation URF that USEPA identified as having a mutagenic mode of action.												
Only VOCs detected in the Annual 2019 water sample at VP-10 (Parcel 3) are shown.												
Risks were calculated assuming residential exposure to groundwater-derived vapors in indoor air for 24 hours per day and 350 days per year for 30 years.												

Attachment C.18: Soil Moisture Profile for Residential Building (Slab-on-Grade) at Groundwater Monitoring Well MW-176 (Parcel 3) Whirlpool, Fort Smith, Arkansas



Notes:
The soil-water profile in the vadose zone is estimated using the van Genuchten soil-water retention equation with default water retention parameters appropriate for silt clay, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.

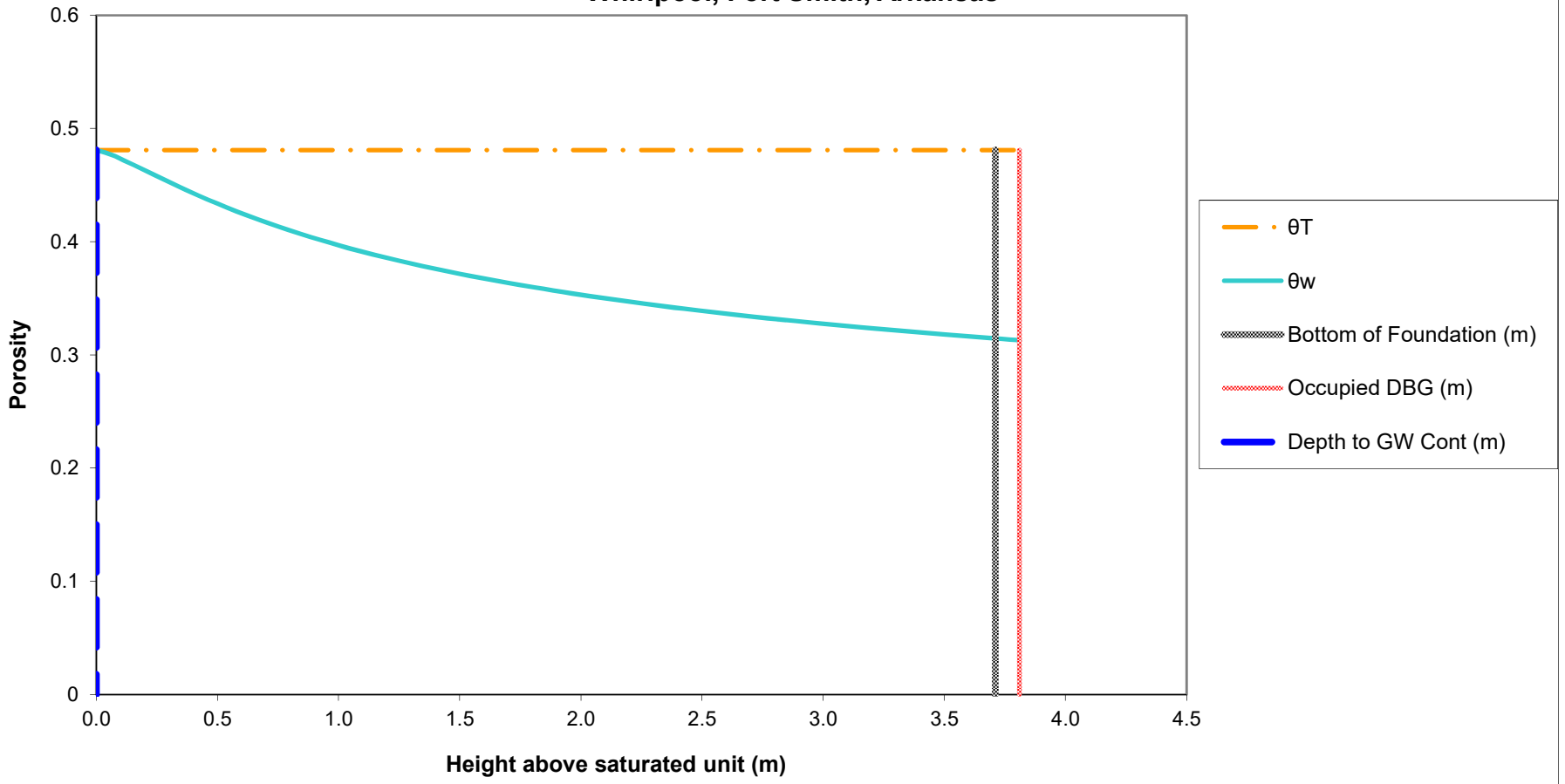
Attachment C.19: Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Groundwater at MW-176 (Parcel 3) Whirlpool, Fort Smith, Arkansas

Chem Group	Chemical	CASRN	D_{air} (m^2/day)	D_{water} (m^2/day)	H (unitless)	D_{crack} (m^2/day)	D_{eff}^T (m^2/day)	α_{soil}	α_{slab}	α_{∞}	C_{bldg} (L-water/m^3)
VOC	1,1-Dichloroethene	75-35-4	7.78E-01	8.99E-05	8.10E-01	1.25E-01	3.12E-04	1.22E-03	2.73E-03	3.32E-06	2.69E-03
VOC	cis-1,2-Dichloroethene	156-59-2	6.36E-01	9.76E-05	1.19E-01	1.02E-01	9.72E-04	3.78E-03	2.73E-03	1.03E-05	1.22E-03
VOC	trans-1,2-Dichloroethene	156-60-5	6.11E-01	1.03E-04	2.81E-01	9.81E-02	5.96E-04	2.32E-03	2.73E-03	6.35E-06	1.79E-03
VOC	Trichloroethene	79-01-6	6.83E-01	7.86E-05	2.88E-01	1.10E-01	5.23E-04	2.04E-03	2.73E-03	5.57E-06	1.60E-03
VOC	Vinyl Chloride	75-01-4	9.16E-01	1.06E-04	9.00E-01	1.47E-01	3.44E-04	1.34E-03	2.73E-03	3.66E-06	3.30E-03
Notes:	**Crack Soil and Building Characteristics**			**Crack Soil**							
	SCS Soil texture class			Sand							
	Bulk density	kg/L	ρ_b	1.66							
	Total porosity	L/L-soil	θ_T	0.375							
	Water-filled porosity	L/L-soil	θ_w	0.054							
	Air-filled porosity	L/L-soil	θ_a	0.321							
	Residual saturation	L/L-soil	θ_r	0.053							
	Hydraulic conductivity	cm/s	K	7.4E-03							
	Dynamic viscosity of water	g/cm-s	μ_w	0.01307							
	Density of water	g/cm^3	ρ_w	1.0							
	Gravitational acceleration	cm/s^2	g	980.7							
	Intrinsic permeability	cm^2	k	9.9E-08							
	Relative saturation	unitless	S_e	0.004							
	van Genuchten N	unitless	N	3.177							
	van Genuchten M	unitless	M	0.685							
	Relative air permeability	unitless	k_{rg}	0.998							
	Permeability to vapor	cm^2	k_v	9.89E-08							
	Distance from building foundation to source	m	L_{T-gw}	3.56							
	Bldg foundation thickness	m	L_{crack}	0.1							
	Bldg foundation length	m		10.00							
	Bldg foundation width	m		10.00							
	Bldg occupied height	m		2.44							
	Bldg occupied volume	m^3		244.00							
	Occupied depth below ground	m		0.0							
	Bldg area for vapor intrusion	m^2	A_B	100.0							
	Ratio of A_{crack} to A_B		η	4E-04							
	Area of cracks	m^2	A_{crack}	4E-02							
	Air exchange rate	$hour^{-1}$	ach	0.45							
	Building ventilation rate	m^3/day	Q_{bldg}	2.64E+03							
	Soil gas flow rate into bldg	m^3/day	Q_{soil}	7.20							
	Indoor air concentrations resulting from groundwater vapor intrusion into a building are estimated using the relationships described by Johnson and Ettinger (Heuristic model for predicting the intrusion rate of contaminant vapors into buildings, 1991), which USEPA recommends for screening level calculations, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.										
	The effective diffusion term DeffT is calculated based on a silty clay soil, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Program.										

Attachment C.20: Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Groundwater at MW-176 (Parcel 3) Whirlpool, Fort Smith, Arkansas

							Cancer				Noncancer	
Chem Group	**Chemical**	**CASRN**	**Carc Class**	**ADAF**	**C_{gw}** (mg/L)	**$C_{building}$** (mg/m^3)	**URF** (m^3/mg)	**f_{inh}**	**Risk**		**RfC** (mg/m^3)	**HQ**
VOC	1,1-Dichloroethene	75-35-4	C	N	1.60E-03	4.31E-06					2.0E-01	2.1E-05
VOC	cis-1,2-Dichloroethene	156-59-2	ID	N	2.88E-02	3.53E-05						
VOC	trans-1,2-Dichloroethene	156-60-5	ID	N	4.70E-04	8.40E-07						
VOC	Trichloroethene	79-01-6	HC	Y	3.17E-01	5.09E-04	4.1E-03	0.2439	1.2E-06		2.0E-03	2.4E-01
VOC	Vinyl Chloride	75-01-4	A	N	1.65E-02	5.44E-05	4.4E-03		3.4E-07		1.0E-01	5.2E-04
							Cumulative Risk:		2E-06		**HI:**	2E-01
Note:												
f_{inh} is the fraction of the inhalation URF that USEPA identified as having a mutagenic mode of action.												
Only VOCs detected in the Annual 2019 groundwater sample at MW-176 (Parcel 3) are shown.												
Risks were calculated assuming residential exposure to groundwater-derived vapors in indoor air for 24 hours per day and 350 days per year for 30 years.												

Attachment C.21: Soil Moisture Profile for Residential Building (Slab-on-Grade) at Soil Vapor Monitoring Point VP-12 (Parcel 4) Whirlpool, Fort Smith, Arkansas



Notes:
The soil-water profile in the vadose zone is estimated using the van Genuchten soil-water retention equation with default water retention parameters appropriate for silt clay, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.

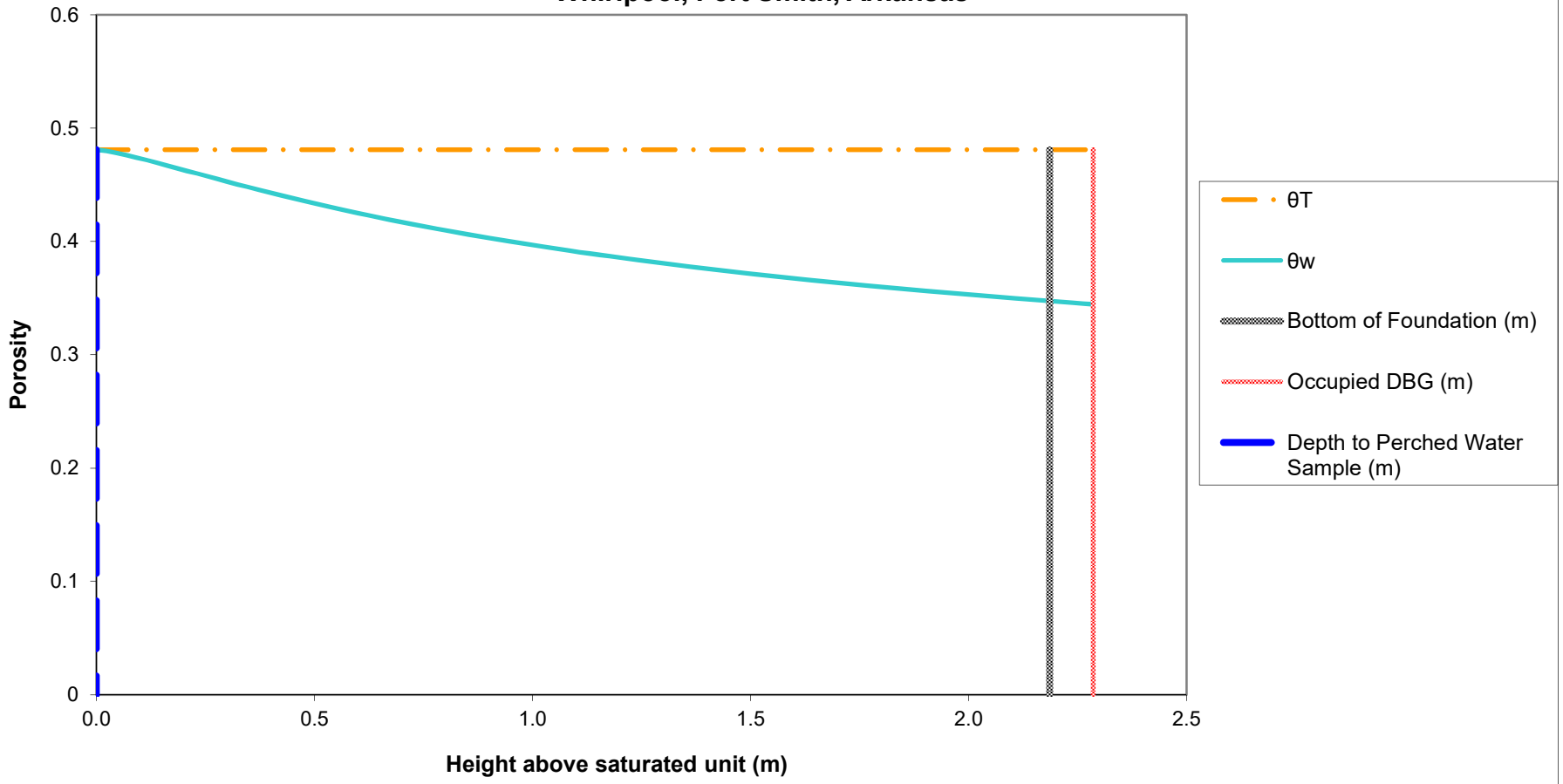
Attachment C.22: Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at VP-12 (Parcel 4) Whirlpool, Fort Smith, Arkansas

Chem Group	Chemical	CASRN	D_{air} (m^2/day)	D_{water} (m^2/day)	H (unitless)	D_{crack} (m^2/day)	D_{eff}^T (m^2/day)	α_{soil}	α_{slab}	α_{∞}	C_{bldg} (L-water/m^3)
VOC	Benzene	71-43-2	7.60E-01	8.47E-05	1.59E-01	1.22E-01	8.46E-04	3.16E-03	2.73E-03	8.62E-06	1.37E-03
VOC	Chloroform	67-66-3	8.99E-01	8.64E-05	1.07E-01	1.44E-01	1.15E-03	4.29E-03	2.73E-03	1.17E-05	1.26E-03
Notes:	**Crack Soil and Building Characteristics**			**Crack Soil**							
	SCS Soil texture class			Sand							
	Bulk density	kg/L	ρ_b	1.66							
	Total porosity	L/L-soil	θ_T	0.375							
	Water-filled porosity	L/L-soil	θ_w	0.054							
	Air-filled porosity	L/L-soil	θ_a	0.321							
	Residual saturation	L/L-soil	θ_r	0.053							
	Hydraulic conductivity	cm/s	K	7.4E-03							
	Dynamic viscosity of water	g/cm-s	μ_w	0.01307							
	Density of water	g/cm^3	ρ_w	1.0							
	Gravitational acceleration	cm/s^2	g	980.7							
	Intrinsic permeability	cm^2	k	9.9E-08							
	Relative saturation	unitless	S_e	0.004							
	van Genuchten N	unitless	N	3.177							
	van Genuchten M	unitless	M	0.685							
	Relative air permeability	unitless	k_{rg}	0.998							
	Permeability to vapor	cm^2	k_v	9.89E-08							
	Distance from building foundation to source	m	L_{T-gw}	3.71							
	Bldg foundation thickness	m	L_{crack}	0.1							
	Bldg foundation length	m		10.00							
	Bldg foundation width	m		10.00							
	Bldg occupied height	m		2.44							
	Bldg occupied volume	m^3		244.00							
	Occupied depth below ground	m		0.0							
	Bldg area for vapor intrusion	m^2	A_B	100.0							
	Ratio of A_{crack} to A_B		η	4E-04							
	Area of cracks	m^2	A_{crack}	4E-02							
	Air exchange rate	$hour^{-1}$	ach	0.45							
	Building ventilation rate	m^3/day	Q_{bldg}	2.64E+03							
	Soil gas flow rate into bldg	m^3/day	Q_{soil}	7.20							
	Indoor air concentrations resulting from groundwater vapor intrusion into a building are estimated using the relationships described by Johnson and Ettinger (Heuristic model for predicting the intrusion rate of contaminant vapors into buildings, 1991), which USEPA recommends for screening level calculations, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.										
	The effective diffusion term DeffT is calculated based on a silty clay soil, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Program.										

Attachment C.23: Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at VP-12 (Parcel 4) Whirlpool, Fort Smith, Arkansas

							Cancer				Noncancer	
Chem Group	**Chemical**	**CASRN**	**Carc Class**	**ADAF**	**C_{gw}** (mg/L)	**$C_{building}$** (mg/m^3)	**URF** (m^3/mg)	**f_{inh}**	**Risk**		**RfC** (mg/m^3)	**HQ**
VOC	Benzene	71-43-2	A	N	2.10E-04	2.88E-07	7.8E-03		9.2E-10		3.0E-02	9.2E-06
VOC	Chloroform	67-66-3	B2	N	2.30E-04	2.90E-07	2.3E-02		2.7E-09		5.0E-02	5.6E-06
							Cumulative Risk:		4E-09		**HI:**	1E-05
Note:												
f_{inh} is the fraction of the inhalation URF that USEPA identified as having a mutagenic mode of action.												
Only VOCs detected in the Annual 2019 water sample at VP-12 (Parcel 4) are shown.												
Risks were calculated assuming residential exposure to groundwater-derived vapors in indoor air for 24 hours per day and 350 days per year for 30 years.												

Attachment C.24: Soil Moisture Profile for Residential Building (Slab-on-Grade) at Groundwater Monitoring Well MW-178 (Parcel 5) Whirlpool, Fort Smith, Arkansas



Notes:
The soil-water profile in the vadose zone is estimated using the van Genuchten soil-water retention equation with default water retention parameters appropriate for silt clay, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.

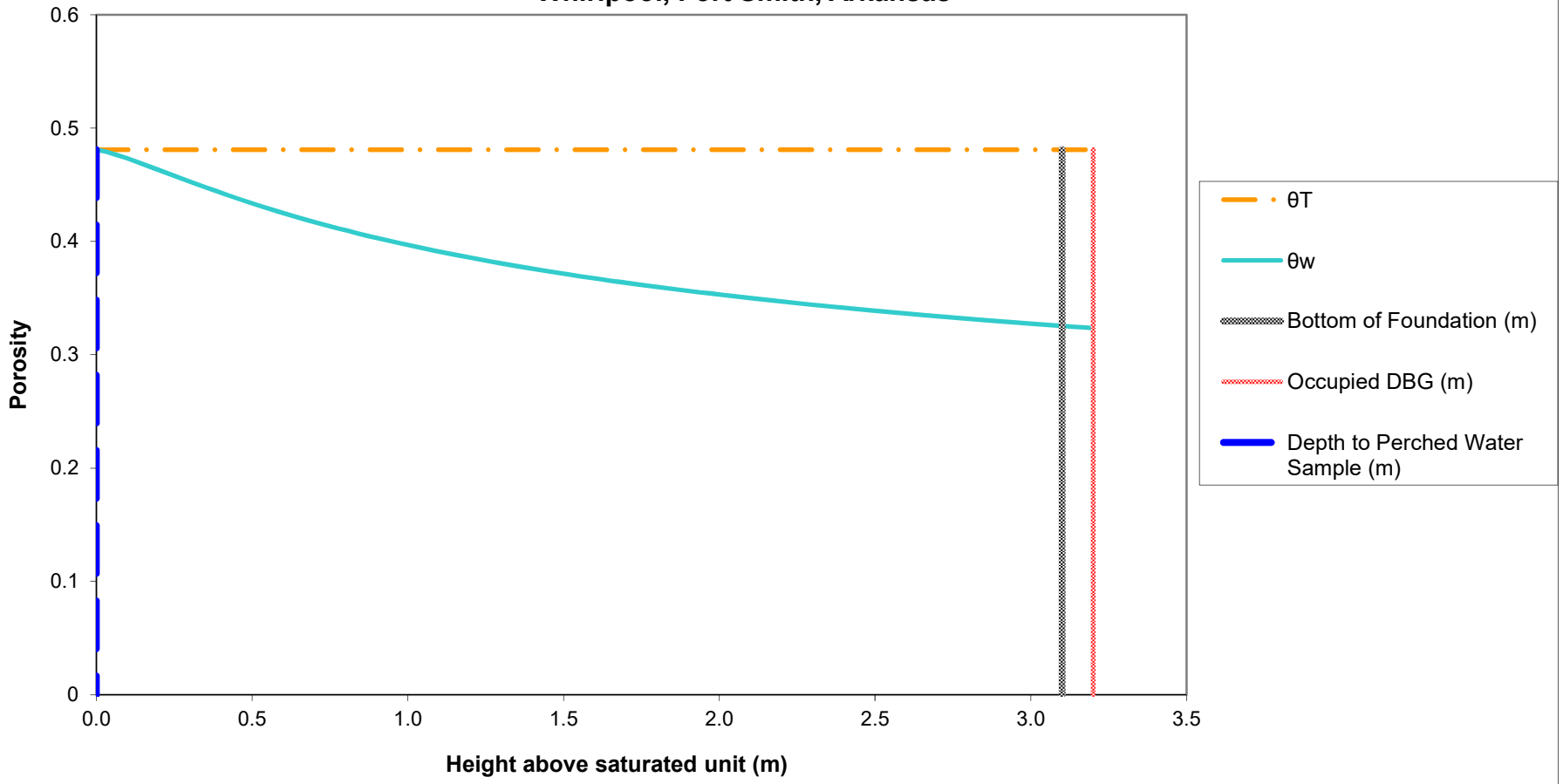
Attachment C.25: Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at MW-178 (Parcel 5) Whirlpool, Fort Smith, Arkansas

Chem Group	Chemical	CASRN	D_{air} (m^2/day)	D_{water} (m^2/day)	H (unitless)	D_{crack} (m^2/day)	D_{eff}^T (m^2/day)	α_{soil}	α_{slab}	α_{∞}	C_{bldg} (L-water/m^3)
VOC	cis-1,2-Dichloroethene	156-59-2	6.36E-01	9.76E-05	1.19E-01	9.95E-02	6.44E-04	4.08E-03	2.73E-03	1.11E-05	1.32E-03
VOC	Trichloroethene	79-01-6	6.83E-01	7.86E-05	2.88E-01	1.07E-01	3.33E-04	2.11E-03	2.73E-03	5.76E-06	1.66E-03
Notes:	**Crack Soil and Building Characteristics**			**Crack Soil**							
	SCS Soil texture class			Sand							
	Bulk density	kg/L	ρ_b	1.66							
	Total porosity	L/L-soil	θ_T	0.375							
	Water-filled porosity	L/L-soil	θ_w	0.057							
	Air-filled porosity	L/L-soil	θ_a	0.318							
	Residual saturation	L/L-soil	θ_r	0.053							
	Hydraulic conductivity	cm/s	K	7.4E-03							
	Dynamic viscosity of water	g/cm-s	μ_w	0.01307							
	Density of water	g/cm^3	ρ_w	1.0							
	Gravitational acceleration	cm/s^2	g	980.7							
	Intrinsic permeability	cm^2	k	9.9E-08							
	Relative saturation	unitless	S_e	0.012							
	van Genuchten N	unitless	N	3.177							
	van Genuchten M	unitless	M	0.685							
	Relative air permeability	unitless	k_{rg}	0.992							
	Permeability to vapor	cm^2	k_v	9.84E-08							
	Distance from building foundation to source	m	L_{T-gw}	2.19							
	Bldg foundation thickness	m	L_{crack}	0.1							
	Bldg foundation length	m		10.00							
	Bldg foundation width	m		10.00							
	Bldg occupied height	m		2.44							
	Bldg occupied volume	m^3		244.00							
	Occupied depth below ground	m		0.0							
	Bldg area for vapor intrusion	m^2	A_B	100.0							
	Ratio of A_{crack} to A_B		η	4E-04							
	Area of cracks	m^2	A_{crack}	4E-02							
	Air exchange rate	$hour^{-1}$	ach	0.45							
	Building ventilation rate	m^3/day	Q_{bldg}	2.64E+03							
	Soil gas flow rate into bldg	m^3/day	Q_{soil}	7.20							
	Indoor air concentrations resulting from groundwater vapor intrusion into a building are estimated using the relationships described by Johnson and Ettinger (Heuristic model for predicting the intrusion rate of contaminant vapors into buildings, 1991), which USEPA recommends for screening level calculations, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.										
	The effective diffusion term DeffT is calculated based on a silty clay soil, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Program.										

Attachment C.26: Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at MW-178 (Parcel 5) Whirlpool, Fort Smith, Arkansas

							Cancer				Noncancer	
Chem Group	**Chemical**	**CASRN**	**Carc Class**	**ADAF**	**C_{gw}** (mg/L)	**$C_{building}$** (mg/m^3)	**URF** (m^3/mg)	**f_{inh}**	**Risk**		**RfC** (mg/m^3)	**HQ**
VOC	cis-1,2-Dichloroethene	156-59-2	ID	N	1.20E-03	1.59E-06						
VOC	Trichloroethene	79-01-6	HC	Y	4.10E-03	6.81E-06	4.1E-03	0.2439	1.6E-08		2.0E-03	3.3E-03
							Cumulative Risk:		2E-08		**HI:**	3E-03
Note:												
f_{inh} is the fraction of the inhalation URF that USEPA identified as having a mutagenic mode of action.												
Only VOCs detected in the Annual 2019 groundwater sample at MW-178 (Parcel 5) are shown.												
Risks were calculated assuming residential exposure to groundwater-derived vapors in indoor air for 24 hours per day and 350 days per year for 30 years.												

Attachment C.27: Soil Moisture Profile for Residential Building (Slab-on-Grade) at Soil Vapor Monitoring Point VP-14 (Parcel 5)
Whirlpool, Fort Smith, Arkansas



Notes:
The soil-water profile in the vadose zone is estimated using the van Genuchten soil-water retention equation with default water retention parameters appropriate for silt clay, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.

Attachment C.28: Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Perched Water at VP-14 (Parcel 5) Whirlpool, Fort Smith, Arkansas

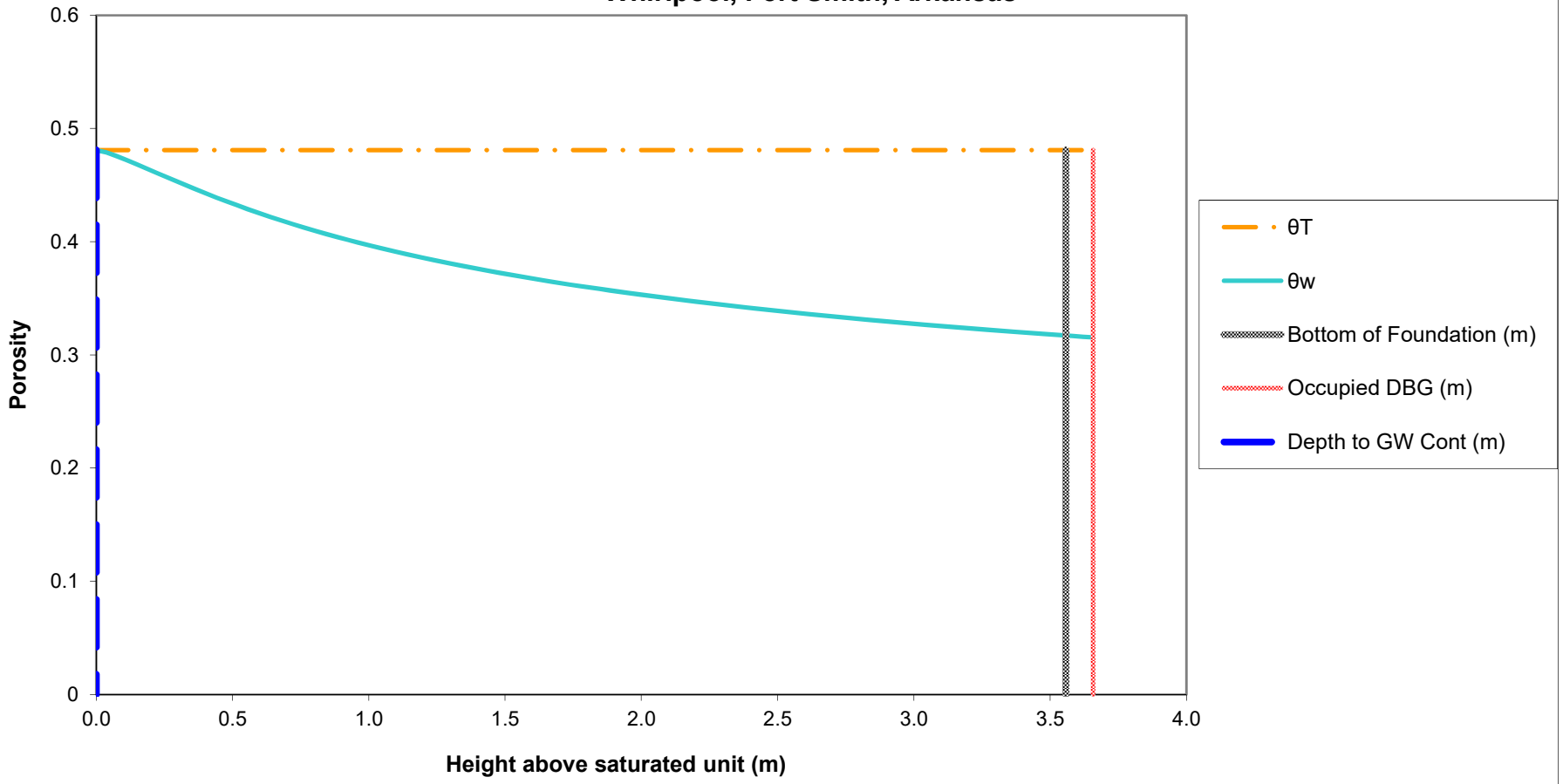
Chem Group	Chemical	CASRN	D_{air} (m^2/day)	D_{water} (m^2/day)	H (unitless)	D_{crack} (m^2/day)	D_{eff}^T (m^2/day)	α_{soil}	α_{slab}	α_{∞}	C_{bldg} (L-water/m^3)
VOC	cis-1,2-Dichloroethene	156-59-2	6.36E-01	9.76E-05	1.19E-01	1.02E-01	8.60E-04	3.84E-03	2.73E-03	1.05E-05	1.24E-03
VOC	Trichloroethene	79-01-6	6.83E-01	7.86E-05	2.88E-01	1.09E-01	4.58E-04	2.05E-03	2.73E-03	5.59E-06	1.61E-03

Notes:											
	Crack Soil and Building Characteristics			**Crack Soil**							
	SCS Soil texture class			Sand							
	Bulk density	kg/L	ρ_b	1.66							
	Total porosity	L/L-soil	θ_T	0.375							
	Water-filled porosity	L/L-soil	θ_w	0.055							
	Air-filled porosity	L/L-soil	θ_a	0.320							
	Residual saturation	L/L-soil	θ_r	0.053							
	Hydraulic conductivity	cm/s	K	7.4E-03							
	Dynamic viscosity of water	g/cm-s	μ_w	0.01307							
	Density of water	g/cm^3	ρ_w	1.0							
	Gravitational acceleration	cm/s^2	g	980.7							
	Intrinsic permeability	cm^2	k	9.9E-08							
	Relative saturation	unitless	S_e	0.005							
	van Genuchten N	unitless	N	3.177							
	van Genuchten M	unitless	M	0.685							
	Relative air permeability	unitless	k_{rg}	0.997							
	Permeability to vapor	cm^2	k_v	9.88E-08							
	Distance from building foundation to source	m	L_{T-gw}	3.10							
	Bldg foundation thickness	m	L_{crack}	0.1							
	Bldg foundation length	m		10.00							
	Bldg foundation width	m		10.00							
	Bldg occupied height	m		2.44							
	Bldg occupied volume	m^3		244.00							
	Occupied depth below ground	m		0.0							
	Bldg area for vapor intrusion	m^2	A_B	100.0							
	Ratio of A_{crack} to A_B		η	4E-04							
	Area of cracks	m^2	A_{crack}	4E-02							
	Air exchange rate	$hour^{-1}$	ach	0.45							
	Building ventilation rate	m^3/day	Q_{bldg}	2.64E+03							
	Soil gas flow rate into bldg	m^3/day	Q_{soil}	7.20							
	Indoor air concentrations resulting from groundwater vapor intrusion into a building are estimated using the relationships described by Johnson and Ettinger (Heuristic model for predicting the intrusion rate of contaminant vapors into buildings, 1991), which USEPA recommends for screening level calculations, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.										
	The effective diffusion term DeffT is calculated based on a silty clay soil, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Program.										

Attachment C.29: Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Perched Water at VP-14 (Parcel 5) Whirlpool, Fort Smith, Arkansas

							Cancer				Noncancer	
Chem Group	**Chemical**	**CASRN**	**Carc Class**	**ADAF**	**C_{gw}** (mg/L)	**$C_{building}$** (mg/m^3)	**URF** (m^3/mg)	**f_{inh}**	**Risk**		**RfC** (mg/m^3)	**HQ**
VOC	Benzene	71-43-2	A	N	2.50E-04	3.47E-07	7.8E-03		1.1E-09		3.0E-02	1.1E-05
VOC	Chloroform	67-66-3	B2	N	4.00E-04	5.13E-07	2.3E-02		4.8E-09		5.0E-02	9.8E-06
VOC	1,1-Dichloroethene	75-35-4	C	N	1.10E-03	2.96E-06					2.0E-01	1.4E-05
VOC	cis-1,2-Dichloroethene	156-59-2	ID	N	3.90E-03	4.85E-06						
VOC	trans-1,2-Dichloroethene	156-60-5	ID	N	3.60E-04	6.48E-07						
VOC	Trichloroethene	79-01-6	HC	Y	8.79E-02	1.42E-04	4.1E-03	0.2439	3.3E-07		2.0E-03	6.8E-02
							Cumulative Risk:		3E-07		**HI:**	7E-02
Note:												
f_{inh} is the fraction of the inhalation URF that USEPA identified as having a mutagenic mode of action.												
Only VOCs detected in the Annual 2019 water sample at VP-14 (Parcel 5) are shown.												
Risks were calculated assuming residential exposure to groundwater-derived vapors in indoor air for 24 hours per day and 350 days per year for 30 years.												

Attachment C.30: Soil Moisture Profile for Residential Building (Slab-on-Grade) at Groundwater Monitoring Well MW-179 (Parcel 5)
Whirlpool, Fort Smith, Arkansas



Notes:
The soil-water profile in the vadose zone is estimated using the van Genuchten soil-water retention equation with default water retention parameters appropriate for silt clay, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.

Attachment C.31: Normalized Indoor Air Concentration in a Residential Building (Slab-on-Grade) due to Vapor Intrusion from Groundwater at MW-179 (Parcel 5) Whirlpool, Fort Smith, Arkansas

Chem Group	Chemical	CASRN	D_{air} (m^2/day)	D_{water} (m^2/day)	H (unitless)	D_{crack} (m^2/day)	D_{eff}^T (m^2/day)	α_{soil}	α_{slab}	α_{∞}	C_{bldg} (L-water/m^3)
VOC	cis-1,2-Dichloroethene	156-59-2	6.36E-01	9.76E-05	1.19E-01	1.02E-01	9.72E-04	3.78E-03	2.73E-03	1.03E-05	1.22E-03
VOC	Trichloroethene	79-01-6	6.83E-01	7.86E-05	2.88E-01	1.10E-01	5.23E-04	2.04E-03	2.73E-03	5.57E-06	1.60E-03

Notes:											
	Crack Soil and Building Characteristics			**Crack Soil**							
	SCS Soil texture class			Sand							
	Bulk density	kg/L	ρ_b	1.66							
	Total porosity	L/L-soil	θ_T	0.375							
	Water-filled porosity	L/L-soil	θ_w	0.054							
	Air-filled porosity	L/L-soil	θ_a	0.321							
	Residual saturation	L/L-soil	θ_r	0.053							
	Hydraulic conductivity	cm/s	K	7.4E-03							
	Dynamic viscosity of water	g/cm-s	μ_w	0.01307							
	Density of water	g/cm^3	ρ_w	1.0							
	Gravitational acceleration	cm/s^2	g	980.7							
	Intrinsic permeability	cm^2	k	9.9E-08							
	Relative saturation	unitless	S_e	0.004							
	van Genuchten N	unitless	N	3.177							
	van Genuchten M	unitless	M	0.685							
	Relative air permeability	unitless	k_{rg}	0.998							
	Permeability to vapor	cm^2	k_v	9.89E-08							
	Distance from building foundation to source	m	L_{T-gw}	3.56							
	Bldg foundation thickness	m	L_{crack}	0.1							
	Bldg foundation length	m		10.00							
	Bldg foundation width	m		10.00							
	Bldg occupied height	m		2.44							
	Bldg occupied volume	m^3		244.00							
	Occupied depth below ground	m		0.0							
	Bldg area for vapor intrusion	m^2	A_B	100.0							
	Ratio of A_{crack} to A_B		η	4E-04							
	Area of cracks	m^2	A_{crack}	4E-02							
	Air exchange rate	$hour^{-1}$	ach	0.45							
	Building ventilation rate	m^3/day	Q_{bldg}	2.64E+03							
	Soil gas flow rate into bldg	m^3/day	Q_{soil}	7.20							

Indoor air concentrations resulting from groundwater vapor intrusion into a building are estimated using the relationships described by Johnson and Ettinger (Heuristic model for predicting the intrusion rate of contaminant vapors into buildings, 1991), which USEPA recommends for screening level calculations, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Plan, which was used as the basis for the ADEQ Remedial Action Decision.

The effective diffusion term DeffT is calculated based on a silty clay soil, as discussed in Appendix A, Section 3.3.1 of the ADEQ-approved Revised Risk Management Program.

Attachment C.32: Cancer Risk and Hazard Index Calculations for Vapor Intrusion into a Residential Building (Slab-on-Grade) from Shallow Groundwater at MW-179 (Parcel 5) Whirlpool, Fort Smith, Arkansas

							Cancer				Noncancer	
Chem Group	**Chemical**	**CASRN**	**Carc Class**	**ADAF**	C_{gw} (mg/L)	$C_{building}$ (mg/m^3)	**URF** (m^3/mg)	f_{inh}	**Risk**		**RfC** (mg/m^3)	**HQ**
VOC	cis-1,2-Dichloroethene	156-59-2	ID	N	7.40E-04	9.06E-07						
VOC	Trichloroethene	79-01-6	HC	Y	2.37E-02	3.80E-05	4.1E-03	0.2439	8.8E-08		2.0E-03	1.8E-02
							Cumulative Risk:		9E-08		**HI:**	2E-02
Note:												
f_{inh} is the fraction of the inhalation URF that USEPA identified as having a mutagenic mode of action.												
Only VOCs detected in the Semi-Annual 2019 groundwater sample at MW-179 (Parcel 5) are shown.												
Risks were calculated assuming residential exposure to groundwater-derived vapors in indoor air for 24 hours per day and 350 days per year for 30 years.												

Attachment C
Laboratory Analytical Data

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 06, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on October 23, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60318969001	**MW-176-201910**	Water	10/22/19 15:55	10/23/19 09:45
60318969002	**MW-187-201910**	Water	10/22/19 14:25	10/23/19 09:45
60318969003	**MW-188-201910**	Water	10/22/19 14:05	10/23/19 09:45
60318969004	**MW-62R-201910**	Water	10/22/19 13:09	10/23/19 09:45
60318969005	**MW-68-201910**	Water	10/22/19 14:34	10/23/19 09:45
60318969006	**MW-40R-201910**	Water	10/22/19 16:05	10/23/19 09:45
60318969007	**MW-191-201910**	Water	10/22/19 12:55	10/23/19 09:45
60318969008	**MW-190-201910**	Water	10/22/19 14:25	10/23/19 09:45
60318969009	**MW-192-201910**	Water	10/22/19 14:25	10/23/19 09:45
60318969010	**TMW-35-201910**	Water	10/22/19 15:50	10/23/19 09:45
60318969011	**MW-63R-201910**	Water	10/22/19 13:10	10/23/19 09:45
60318969012	**MW-39R-201910**	Water	10/22/19 14:30	10/23/19 09:45
60318969013	**EB-01-201910**	Water	10/22/19 16:50	10/23/19 09:45
60318969014	**TB-01-201910**	Water	10/22/19 17:05	10/23/19 09:45
60318969015	**MW-195-201910**	Water	10/22/19 16:20	10/23/19 09:45
60318969016	**TMW-29-201910**	Water	10/22/19 14:30	10/23/19 09:45
60318969017	**TMW-20-201910**	Water	10/22/19 14:05	10/23/19 09:45
60318969018	**TB-02-201910**	Water	10/22/19 17:15	10/23/19 09:45
60318969019	**ITMW-7-201910**	Water	10/22/19 17:15	10/23/19 06:20
60318969020	**TMW-21-201910**	Water	10/22/19 16:00	10/23/19 06:20
60318969021	**TMW-11-201910**	Water	10/22/19 13:45	10/23/19 06:20
60318969022	**TMW-10-201910**	Water	10/22/19 14:05	10/23/19 06:20
60318969023	**MW-89-201910**	Water	10/22/19 16:30	10/23/19 06:20

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60318969001	MW-176-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969002	MW-187-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969003	MW-188-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969004	MW-62R-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969005	MW-68-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969006	MW-40R-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969007	MW-191-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969008	MW-190-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969009	MW-192-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969010	TMW-35-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969011	MW-63R-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969012	MW-39R-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969013	EB-01-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969014	TB-01-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969015	MW-195-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969016	TMW-29-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969017	TMW-20-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969018	TB-02-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969019	ITMW-7-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969020	TMW-21-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60318969021	TMW-11-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60318969022	TMW-10-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	AJS	3	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60318969023	**MW-89-201910**	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
4 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
23 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
3 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
4 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 620217

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60318275001,60318978002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2529352)
  - Chloride
  - Sulfate
- MS (Lab ID: 2529354)
  - Sulfate
- MSD (Lab ID: 2529353)
  - Chloride
  - Sulfate

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 unpres
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
4 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 617944

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60318969021,60319009002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2521248)
  - Nitrogen, Nitrite

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Method: **SM 5310C**
Description: 5310C TOC
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
4 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 619144

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60319126003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2525749)
  - Total Organic Carbon

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Method: **SM 5310C**
Description: 5310C Diss. Organic Carbon LF
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
3 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 619520

B: Analyte was detected in the associated method blank.

- BLANK for HBN 619520 [WETA/631 (Lab ID: 2526889)
  - Dissolved Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-176-201910 **Lab ID: 60318969001** Collected: 10/22/19 15:55 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 06:23	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 06:23	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 06:23	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 06:23	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 06:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 06:23	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 06:23	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 06:23	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 06:23	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 06:23	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 06:23	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 06:23	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 06:23	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 06:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 06:23	107-06-2	
1,1-Dichloroethene	**1.6**	ug/L	1.0	0.22	1		10/31/19 06:23	75-35-4	
cis-1,2-Dichloroethene	**28.8**	ug/L	1.0	0.17	1		10/31/19 06:23	156-59-2	
trans-1,2-Dichloroethene	**0.47J**	ug/L	1.0	0.17	1		10/31/19 06:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 06:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 06:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 06:23	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 06:23	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 06:23	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 06:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 06:23	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 06:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 06:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 06:23	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 06:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 06:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 06:23	79-00-5	
Trichloroethene	**317**	ug/L	10.0	1.7	10		11/01/19 00:24	79-01-6	
Vinyl chloride	**16.5**	ug/L	1.0	0.11	1		10/31/19 06:23	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 06:23	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 06:23	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		10/31/19 06:23	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/31/19 06:23	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 06:23		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-187-201910 **Lab ID: 60318969002** Collected: 10/22/19 14:25 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 04:43	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 04:43	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 04:43	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 04:43	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 04:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 04:43	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 04:43	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 04:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 04:43	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 04:43	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 04:43	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 04:43	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 04:43	124-48-1	
1,1-Dichloroethane	**0.31J**	ug/L	1.0	0.097	1		10/31/19 04:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 04:43	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 04:43	75-35-4	
cis-1,2-Dichloroethene	**2.2**	ug/L	1.0	0.17	1		10/31/19 04:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 04:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 04:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 04:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 04:43	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 04:43	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 04:43	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 04:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 04:43	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 04:43	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 04:43	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 04:43	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 04:43	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 04:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 04:43	79-00-5	
Trichloroethene	**3.5**	ug/L	1.0	0.17	1		10/31/19 04:43	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 04:43	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 04:43	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 04:43	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/31/19 04:43	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 04:43	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 04:43		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-188-201910 **Lab ID: 60318969003** Collected: 10/22/19 14:05 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 04:57	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 04:57	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 04:57	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 04:57	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 04:57	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 04:57	78-93-3	
Carbon disulfide	**0.19J**	ug/L	5.0	0.16	1		10/31/19 04:57	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 04:57	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 04:57	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 04:57	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 04:57	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 04:57	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 04:57	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 04:57	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 04:57	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 04:57	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 04:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 04:57	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 04:57	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 04:57	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 04:57	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 04:57	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 04:57	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 04:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 04:57	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 04:57	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 04:57	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 04:57	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 04:57	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 04:57	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 04:57	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 04:57	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 04:57	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 04:57	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		10/31/19 04:57	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/31/19 04:57	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 04:57	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 04:57		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-62R-201910 **Lab ID: 60318969004** Collected: 10/22/19 13:09 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 05:12	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 05:12	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 05:12	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 05:12	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 05:12	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 05:12	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 05:12	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 05:12	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 05:12	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 05:12	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 05:12	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 05:12	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 05:12	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 05:12	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 05:12	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:12	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:12	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:12	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 05:12	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 05:12	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 05:12	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 05:12	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 05:12	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 05:12	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 05:12	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 05:12	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 05:12	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:12	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 05:12	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 05:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 05:12	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:12	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 05:12	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 05:12	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 05:12	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		10/31/19 05:12	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 05:12	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 05:12		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-68-201910 **Lab ID: 60318969005** Collected: 10/22/19 14:34 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 05:26	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 05:26	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 05:26	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 05:26	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 05:26	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 05:26	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 05:26	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 05:26	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 05:26	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 05:26	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 05:26	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 05:26	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 05:26	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 05:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 05:26	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 05:26	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 05:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 05:26	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 05:26	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 05:26	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 05:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 05:26	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 05:26	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 05:26	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:26	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 05:26	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 05:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 05:26	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:26	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 05:26	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 05:26	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 05:26	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		10/31/19 05:26	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 05:26	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 05:26		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-40R-201910 **Lab ID: 60318969006** Collected: 10/22/19 16:05 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 05:40	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 05:40	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 05:40	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 05:40	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 05:40	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 05:40	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 05:40	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 05:40	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 05:40	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 05:40	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 05:40	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 05:40	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 05:40	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 05:40	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 05:40	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:40	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:40	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:40	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 05:40	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 05:40	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 05:40	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 05:40	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 05:40	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 05:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 05:40	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 05:40	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 05:40	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:40	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 05:40	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 05:40	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 05:40	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:40	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 05:40	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 05:40	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/31/19 05:40	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/31/19 05:40	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 05:40	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 05:40		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-191-201910 **Lab ID: 60318969007** Collected: 10/22/19 12:55 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 05:54	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 05:54	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 05:54	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 05:54	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 05:54	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 05:54	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 05:54	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 05:54	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 05:54	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 05:54	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 05:54	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 05:54	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 05:54	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 05:54	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 05:54	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:54	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:54	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:54	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 05:54	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 05:54	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 05:54	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 05:54	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 05:54	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 05:54	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 05:54	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 05:54	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 05:54	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 05:54	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 05:54	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 05:54	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 05:54	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 05:54	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 05:54	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 05:54	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/31/19 05:54	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		10/31/19 05:54	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 05:54	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 05:54		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-190-201910 **Lab ID: 60318969008** Collected: 10/22/19 14:25 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 06:08	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 06:08	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 06:08	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 06:08	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 06:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 06:08	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 06:08	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 06:08	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 06:08	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 06:08	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 06:08	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 06:08	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 06:08	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 06:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 06:08	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 06:08	75-35-4	
cis-1,2-Dichloroethene	**0.21J**	ug/L	1.0	0.17	1		10/31/19 06:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 06:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 06:08	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 06:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 06:08	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 06:08	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 06:08	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 06:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 06:08	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 06:08	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 06:08	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 06:08	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 06:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 06:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 06:08	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 06:08	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 06:08	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 06:08	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 06:08	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/31/19 06:08	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 06:08	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 06:08		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-192-201910 **Lab ID: 60318969009** Collected: 10/22/19 14:25 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 21:34	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 21:34	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 21:34	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 21:34	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 21:34	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 21:34	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 21:34	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 21:34	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 21:34	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 21:34	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 21:34	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 21:34	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 21:34	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 21:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 21:34	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 21:34	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 21:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 21:34	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 21:34	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 21:34	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 21:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 21:34	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 21:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 21:34	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:34	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 21:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 21:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 21:34	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:34	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 21:34	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 21:34	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 21:34	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		10/31/19 21:34	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		10/31/19 21:34	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 21:34		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-35-201910 **Lab ID: 60318969010** Collected: 10/22/19 15:50 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 23:56	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 23:56	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 23:56	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 23:56	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 23:56	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 23:56	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 23:56	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 23:56	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 23:56	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 23:56	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 23:56	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 23:56	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 23:56	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 23:56	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 23:56	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:56	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 23:56	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 23:56	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 23:56	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 23:56	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 23:56	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 23:56	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 23:56	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 23:56	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 23:56	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 23:56	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 23:56	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:56	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 23:56	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 23:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 23:56	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 23:56	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 23:56	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 23:56	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 23:56	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/31/19 23:56	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 23:56	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 23:56		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-63R-201910 **Lab ID: 60318969011** Collected: 10/22/19 13:10 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 21:48	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 21:48	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 21:48	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 21:48	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 21:48	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 21:48	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 21:48	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 21:48	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 21:48	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 21:48	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 21:48	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 21:48	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 21:48	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 21:48	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 21:48	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:48	75-35-4	
cis-1,2-Dichloroethene	**0.59J**	ug/L	1.0	0.17	1		10/31/19 21:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:48	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 21:48	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 21:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 21:48	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 21:48	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 21:48	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 21:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 21:48	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 21:48	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 21:48	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:48	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 21:48	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 21:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 21:48	79-00-5	
Trichloroethene	**7.4**	ug/L	1.0	0.17	1		10/31/19 21:48	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 21:48	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 21:48	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 21:48	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/31/19 21:48	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 21:48	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 21:48		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-39R-201910 **Lab ID: 60318969012** Collected: 10/22/19 14:30 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 22:02	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 22:02	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 22:02	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 22:02	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 22:02	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 22:02	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 22:02	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 22:02	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 22:02	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 22:02	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 22:02	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 22:02	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 22:02	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 22:02	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 22:02	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:02	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 22:02	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 22:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 22:02	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 22:02	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 22:02	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 22:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 22:02	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 22:02	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 22:02	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:02	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 22:02	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 22:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 22:02	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:02	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 22:02	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 22:02	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 22:02	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/31/19 22:02	17060-07-0	
Toluene-d8 (S)	104	%	80-120		1		10/31/19 22:02	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 22:02		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: EB-01-201910 **Lab ID: 60318969013** Collected: 10/22/19 16:50 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 21:20	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 21:20	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 21:20	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 21:20	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 21:20	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 21:20	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 21:20	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 21:20	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 21:20	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 21:20	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 21:20	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 21:20	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 21:20	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 21:20	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 21:20	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:20	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:20	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:20	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 21:20	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 21:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 21:20	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 21:20	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 21:20	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 21:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 21:20	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 21:20	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 21:20	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:20	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 21:20	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 21:20	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 21:20	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:20	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 21:20	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 21:20	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 21:20	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/31/19 21:20	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 21:20	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 21:20		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: TB-01-201910 **Lab ID: 60318969014** Collected: 10/22/19 17:05 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 21:05	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 21:05	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 21:05	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 21:05	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 21:05	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 21:05	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 21:05	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 21:05	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 21:05	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 21:05	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 21:05	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 21:05	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 21:05	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 21:05	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 21:05	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:05	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:05	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:05	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 21:05	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 21:05	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 21:05	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 21:05	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 21:05	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 21:05	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 21:05	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 21:05	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 21:05	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 21:05	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 21:05	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 21:05	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 21:05	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 21:05	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 21:05	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 21:05	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 21:05	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		10/31/19 21:05	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 21:05	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 21:05		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-195-201910 **Lab ID: 60318969015** Collected: 10/22/19 16:20 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 22:17	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 22:17	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 22:17	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 22:17	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 22:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 22:17	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 22:17	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 22:17	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 22:17	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 22:17	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 22:17	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 22:17	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 22:17	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 22:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 22:17	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:17	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 22:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 22:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 22:17	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 22:17	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 22:17	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 22:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 22:17	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 22:17	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 22:17	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:17	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 22:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 22:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 22:17	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:17	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 22:17	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 22:17	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 22:17	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/31/19 22:17	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 22:17	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 22:17		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-29-201910 **Lab ID: 60318969016** Collected: 10/22/19 14:30 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 22:31	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 22:31	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 22:31	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 22:31	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 22:31	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 22:31	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 22:31	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 22:31	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 22:31	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 22:31	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 22:31	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 22:31	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 22:31	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 22:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 22:31	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 22:31	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 22:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 22:31	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 22:31	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 22:31	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 22:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 22:31	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 22:31	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 22:31	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:31	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 22:31	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 22:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 22:31	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:31	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 22:31	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 22:31	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 22:31	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/31/19 22:31	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		10/31/19 22:31	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 22:31		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-20-201910 **Lab ID: 60318969017** Collected: 10/22/19 14:05 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 22:45	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 22:45	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 22:45	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 22:45	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 22:45	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 22:45	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 22:45	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 22:45	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 22:45	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 22:45	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 22:45	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 22:45	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 22:45	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 22:45	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 22:45	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:45	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:45	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:45	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 22:45	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 22:45	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 22:45	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 22:45	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 22:45	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 22:45	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 22:45	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 22:45	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 22:45	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:45	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 22:45	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 22:45	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 22:45	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:45	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 22:45	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 22:45	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 22:45	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/31/19 22:45	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 22:45	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 22:45		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: TB-02-201910 **Lab ID: 60318969018** Collected: 10/22/19 17:15 Received: 10/23/19 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 20:51	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 20:51	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 20:51	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 20:51	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 20:51	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 20:51	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 20:51	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 20:51	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 20:51	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 20:51	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 20:51	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 20:51	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 20:51	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 20:51	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 20:51	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 20:51	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 20:51	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 20:51	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 20:51	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 20:51	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 20:51	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 20:51	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 20:51	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 20:51	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 20:51	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 20:51	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 20:51	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 20:51	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 20:51	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 20:51	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 20:51	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 20:51	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 20:51	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 20:51	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/31/19 20:51	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/31/19 20:51	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 20:51	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 20:51		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: ITMW-7-201910 **Lab ID: 60318969019** Collected: 10/22/19 17:15 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 22:59	67-64-1	
Benzene	**0.13J**	ug/L	1.0	0.079	1		10/31/19 22:59	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 22:59	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 22:59	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 22:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 22:59	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 22:59	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 22:59	56-23-5	
Chlorobenzene	**4.6**	ug/L	1.0	0.13	1		10/31/19 22:59	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 22:59	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 22:59	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 22:59	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 22:59	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 22:59	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 22:59	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:59	75-35-4	
cis-1,2-Dichloroethene	**6.7**	ug/L	1.0	0.17	1		10/31/19 22:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 22:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 22:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 22:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 22:59	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 22:59	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 22:59	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 22:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 22:59	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 22:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 22:59	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 22:59	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 22:59	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 22:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 22:59	79-00-5	
Trichloroethene	**20.5**	ug/L	1.0	0.17	1		10/31/19 22:59	79-01-6	
Vinyl chloride	**0.13J**	ug/L	1.0	0.11	1		10/31/19 22:59	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 22:59	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 22:59	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/31/19 22:59	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 22:59	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 22:59		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-21-201910 **Lab ID: 60318969020** Collected: 10/22/19 16:00 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**76100**	ug/L	50.0	14.0	1	10/24/19 10:55	10/25/19 14:00	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**202**	ug/L	10.0	3.3	1		11/01/19 00:10	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 00:10	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 00:10	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 00:10	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 00:10	74-83-9	
2-Butanone (MEK)	**309**	ug/L	10.0	0.70	1		11/01/19 00:10	78-93-3	
Carbon disulfide	**0.42J**	ug/L	5.0	0.16	1		11/01/19 00:10	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 00:10	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 00:10	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 00:10	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 00:10	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 00:10	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 00:10	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 00:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 00:10	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 00:10	75-35-4	
cis-1,2-Dichloroethene	**13.5**	ug/L	1.0	0.17	1		11/01/19 00:10	156-59-2	
trans-1,2-Dichloroethene	**0.19J**	ug/L	1.0	0.17	1		11/01/19 00:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 00:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 00:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 00:10	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 00:10	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 00:10	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 00:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.1J**	ug/L	10.0	0.56	1		11/01/19 00:10	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 00:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 00:10	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 00:10	127-18-4	
Toluene	**53.2**	ug/L	1.0	0.14	1		11/01/19 00:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 00:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 00:10	79-00-5	
Trichloroethene	**21.8**	ug/L	1.0	0.17	1		11/01/19 00:10	79-01-6	
Vinyl chloride	**1.9**	ug/L	1.0	0.11	1		11/01/19 00:10	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 00:10	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/01/19 00:10	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/01/19 00:10	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/01/19 00:10	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 00:10		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**204**	mg/L	50.0	11.0	50		11/05/19 20:57	16887-00-6	
Sulfate	**15.3**	mg/L	2.0	0.46	2		11/06/19 14:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-21-201910 **Lab ID: 60318969020** Collected: 10/22/19 16:00 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.15**	mg/L	0.10	0.038	1		10/23/19 17:53		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/23/19 17:53	14797-55-8	
Nitrogen, Nitrite	**0.17**	mg/L	0.10	0.067	1		10/23/19 17:53	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1130**	mg/L	100	29.0	100		10/31/19 17:24	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**883**	mg/L	100	29.0	100		11/01/19 00:45		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-11-201910 **Lab ID: 60318969021** Collected: 10/22/19 13:45 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**7540**	ug/L	50.0	14.0	1	10/24/19 10:55	10/25/19 14:08	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 23:13	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 23:13	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 23:13	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 23:13	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 23:13	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 23:13	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 23:13	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 23:13	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 23:13	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 23:13	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 23:13	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 23:13	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 23:13	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 23:13	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 23:13	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:13	75-35-4	
cis-1,2-Dichloroethene	**0.79J**	ug/L	1.0	0.17	1		10/31/19 23:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 23:13	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 23:13	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 23:13	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 23:13	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 23:13	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 23:13	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 23:13	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 23:13	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 23:13	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 23:13	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:13	127-18-4	
Toluene	**0.20J**	ug/L	1.0	0.14	1		10/31/19 23:13	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 23:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 23:13	79-00-5	
Trichloroethene	**0.70J**	ug/L	1.0	0.17	1		10/31/19 23:13	79-01-6	
Vinyl chloride	**0.29J**	ug/L	1.0	0.11	1		10/31/19 23:13	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 23:13	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		10/31/19 23:13	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/31/19 23:13	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 23:13	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 23:13		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 10:50	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-11-201910 **Lab ID: 60318969021** Collected: 10/22/19 13:45 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**162**	mg/L	10.0	2.2	10		11/05/19 21:14	16887-00-6	
Sulfate	**1.1**	mg/L	1.0	0.23	1		11/06/19 15:11	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		10/23/19 17:49		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/23/19 17:49	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/23/19 17:49	14797-65-0	M1
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.7**	mg/L	1.0	0.29	1		10/30/19 13:50	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**1.4**	mg/L	1.0	0.29	1		11/01/19 00:59		B

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-10-201910 **Lab ID: 60318969022** Collected: 10/22/19 14:05 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**22100**	ug/L	50.0	14.0	1	10/24/19 10:55	10/25/19 14:11	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 23:27	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 23:27	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 23:27	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 23:27	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 23:27	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 23:27	78-93-3	
Carbon disulfide	**0.35J**	ug/L	5.0	0.16	1		10/31/19 23:27	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 23:27	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 23:27	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 23:27	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 23:27	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 23:27	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 23:27	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 23:27	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 23:27	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:27	75-35-4	
cis-1,2-Dichloroethene	**1.4**	ug/L	1.0	0.17	1		10/31/19 23:27	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 23:27	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 23:27	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 23:27	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 23:27	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 23:27	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 23:27	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 23:27	75-09-2	
4-Methyl-2-pentanone (MIBK)	**0.78J**	ug/L	10.0	0.56	1		10/31/19 23:27	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 23:27	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 23:27	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:27	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 23:27	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 23:27	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 23:27	79-00-5	
Trichloroethene	**8.6**	ug/L	1.0	0.17	1		10/31/19 23:27	79-01-6	
Vinyl chloride	**2.4**	ug/L	1.0	0.11	1		10/31/19 23:27	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 23:27	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		10/31/19 23:27	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/31/19 23:27	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 23:27	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 23:27		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 10:50	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-10-201910 **Lab ID: 60318969022** Collected: 10/22/19 14:05 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**198**	mg/L	10.0	2.2	10		11/05/19 21:47	16887-00-6	
Sulfate	**1.1**	mg/L	1.0	0.23	1		11/06/19 15:28	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		10/23/19 17:51		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/23/19 17:51	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/23/19 17:51	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**16.1**	mg/L	5.0	1.4	5		10/31/19 17:51	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**16.4**	mg/L	5.0	1.4	5		11/01/19 01:13		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-89-201910 **Lab ID: 60318969023** Collected: 10/22/19 16:30 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**63.3**	ug/L	50.0	14.0	1	10/24/19 10:55	10/25/19 14:13	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 23:42	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 23:42	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 23:42	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 23:42	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 23:42	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 23:42	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 23:42	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 23:42	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 23:42	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 23:42	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 23:42	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 23:42	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 23:42	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 23:42	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 23:42	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:42	75-35-4	
cis-1,2-Dichloroethene	**0.51J**	ug/L	1.0	0.17	1		10/31/19 23:42	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 23:42	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 23:42	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 23:42	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 23:42	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 23:42	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 23:42	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 23:42	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 23:42	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 23:42	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 23:42	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:42	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 23:42	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 23:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 23:42	79-00-5	
Trichloroethene	**9.0**	ug/L	1.0	0.17	1		10/31/19 23:42	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 23:42	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 23:42	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/31/19 23:42	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/31/19 23:42	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 23:42	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 23:42		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 10:51	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: MW-89-201910 **Lab ID: 60318969023** Collected: 10/22/19 16:30 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**2.9**	mg/L	1.0	0.23	1		11/06/19 15:44	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**96.3**	mg/L	2.0	0.76	20		10/23/19 17:57		
Nitrogen, Nitrate	**96.3**	mg/L	2.0	1.3	20		10/23/19 17:57	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	2.0	1.3	20		10/23/19 17:57	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.1**	mg/L	1.0	0.29	1		10/30/19 14:17	7440-44-0	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 618015 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

METHOD BLANK: 2521575 Matrix: Water
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	14.0	10/25/19 12:40	

LABORATORY CONTROL SAMPLE: 2521576

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	10000	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2521577 2521578

Parameter	Units	60319061001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	7570	10000	10000	17000	17400	94	99	75-125	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 618900 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60318969001, 60318969002, 60318969003, 60318969004, 60318969005, 60318969006, 60318969007, 60318969008

METHOD BLANK: 2524965 Matrix: Water
Associated Lab Samples: 60318969001, 60318969002, 60318969003, 60318969004, 60318969005, 60318969006, 60318969007, 60318969008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	10/31/19 02:34	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	10/31/19 02:34	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	10/31/19 02:34	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	10/31/19 02:34	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	10/31/19 02:34	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	10/31/19 02:34	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	10/31/19 02:34	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	10/31/19 02:34	
2-Hexanone	ug/L	ND	10.0	1.0	10/31/19 02:34	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	10/31/19 02:34	
Acetone	ug/L	ND	10.0	3.3	10/31/19 02:34	
Benzene	ug/L	ND	1.0	0.079	10/31/19 02:34	
Bromodichloromethane	ug/L	ND	1.0	0.17	10/31/19 02:34	
Bromoform	ug/L	ND	1.0	0.21	10/31/19 02:34	
Bromomethane	ug/L	ND	5.0	0.32	10/31/19 02:34	
Carbon disulfide	ug/L	ND	5.0	0.16	10/31/19 02:34	
Carbon tetrachloride	ug/L	ND	1.0	0.084	10/31/19 02:34	
Chlorobenzene	ug/L	ND	1.0	0.13	10/31/19 02:34	
Chloroethane	ug/L	ND	1.0	0.42	10/31/19 02:34	
Chloroform	ug/L	ND	1.0	0.10	10/31/19 02:34	
Chloromethane	ug/L	ND	1.0	0.16	10/31/19 02:34	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 02:34	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	10/31/19 02:34	
Dibromochloromethane	ug/L	ND	1.0	0.15	10/31/19 02:34	
Ethylbenzene	ug/L	ND	1.0	0.12	10/31/19 02:34	
Methylene Chloride	ug/L	ND	1.0	0.27	10/31/19 02:34	
Styrene	ug/L	ND	1.0	0.15	10/31/19 02:34	
Tetrachloroethene	ug/L	ND	1.0	0.22	10/31/19 02:34	
Toluene	ug/L	ND	1.0	0.14	10/31/19 02:34	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 02:34	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	10/31/19 02:34	
Trichloroethene	ug/L	ND	1.0	0.17	10/31/19 02:34	
Vinyl chloride	ug/L	ND	1.0	0.11	10/31/19 02:34	
Xylene (Total)	ug/L	ND	3.0	0.34	10/31/19 02:34	
1,2-Dichloroethane-d4 (S)	%	102	77-122		10/31/19 02:34	
4-Bromofluorobenzene (S)	%	98	80-120		10/31/19 02:34	
Toluene-d8 (S)	%	99	80-120		10/31/19 02:34	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

LABORATORY CONTROL SAMPLE: 2524966

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.8	94	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	18.5	93	71-122	
1,1,2-Trichloroethane	ug/L	20	19.5	97	76-123	
1,1-Dichloroethane	ug/L	20	19.1	95	78-117	
1,1-Dichloroethene	ug/L	20	21.0	105	74-122	
1,2-Dichloroethane	ug/L	20	18.9	94	73-120	
1,2-Dichloropropane	ug/L	20	19.1	96	78-115	
2-Butanone (MEK)	ug/L	100	92.5	92	54-133	
2-Hexanone	ug/L	100	93.5	94	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	96.5	96	62-130	
Acetone	ug/L	100	82.4	82	54-130	
Benzene	ug/L	20	19.0	95	80-120	
Bromodichloromethane	ug/L	20	18.0	90	78-121	
Bromoform	ug/L	20	16.9	84	62-137	
Bromomethane	ug/L	20	18.6	93	41-145	
Carbon disulfide	ug/L	20	19.6	98	64-119	
Carbon tetrachloride	ug/L	20	19.2	96	77-122	
Chlorobenzene	ug/L	20	18.8	94	80-123	
Chloroethane	ug/L	20	20.5	103	60-146	
Chloroform	ug/L	20	19.2	96	81-116	
Chloromethane	ug/L	20	18.3	91	29-154	
cis-1,2-Dichloroethene	ug/L	20	18.6	93	80-120	
cis-1,3-Dichloropropene	ug/L	20	18.4	92	78-118	
Dibromochloromethane	ug/L	20	17.4	87	73-128	
Ethylbenzene	ug/L	20	18.9	95	80-120	
Methylene Chloride	ug/L	20	20.6	103	80-126	
Styrene	ug/L	20	18.8	94	85-120	
Tetrachloroethene	ug/L	20	19.0	95	77-121	
Toluene	ug/L	20	18.5	93	80-120	
trans-1,2-Dichloroethene	ug/L	20	18.4	92	80-120	
trans-1,3-Dichloropropene	ug/L	20	16.5	83	76-123	
Trichloroethene	ug/L	20	20.6	103	80-121	
Vinyl chloride	ug/L	20	19.5	97	46-162	
Xylene (Total)	ug/L	60	56.2	94	80-120	
1,2-Dichloroethane-d4 (S)	%			101	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2524967 2524968

Parameter	Units	60318969003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	20.0	19.7	100	99	67-137	1	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	18.0	17.7	90	89	54-134	2	33	
1,1,2-Trichloroethane	ug/L	ND	20	20	18.6	17.3	93	86	59-131	8	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2524967			2524968							
Parameter	Units	60318969003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	19.8	19.6	99	98	63-134	1	31	
1,1-Dichloroethene	ug/L	ND	20	20	22.2	22.8	111	114	64-140	3	37	
1,2-Dichloroethane	ug/L	ND	20	20	18.4	17.7	92	88	42-140	4	35	
1,2-Dichloropropane	ug/L	ND	20	20	18.9	18.9	95	94	60-132	0	30	
2-Butanone (MEK)	ug/L	ND	100	100	82.2	77.5	82	78	44-132	6	34	
2-Hexanone	ug/L	ND	100	100	86.6	76.9	87	77	47-134	12	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	90.7	81.6	91	82	50-136	11	34	
Acetone	ug/L	ND	100	100	77.3	69.1	77	69	35-129	11	35	
Benzene	ug/L	ND	20	20	19.2	19.3	96	96	42-137	1	35	
Bromodichloromethane	ug/L	ND	20	20	17.8	17.9	89	90	61-130	1	32	
Bromoform	ug/L	ND	20	20	16.2	15.5	81	78	53-128	5	32	
Bromomethane	ug/L	ND	20	20	19.3	19.0	97	95	33-148	1	42	
Carbon disulfide	ug/L	0.19J	20	20	19.2	19.7	95	98	52-138	3	37	
Carbon tetrachloride	ug/L	ND	20	20	20.1	20.5	101	102	65-143	2	31	
Chlorobenzene	ug/L	ND	20	20	19.2	19.3	96	97	63-131	1	30	
Chloroethane	ug/L	ND	20	20	19.3	24.7	97	123	51-153	24	39	
Chloroform	ug/L	ND	20	20	19.9	19.5	100	98	62-129	2	32	
Chloromethane	ug/L	ND	20	20	20.7	19.9	103	99	16-169	4	59	
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.8	18.7	94	93	43-152	1	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	16.1	15.6	80	78	58-127	3	31	
Dibromochloromethane	ug/L	ND	20	20	17.3	16.3	87	82	54-134	6	33	
Ethylbenzene	ug/L	ND	20	20	19.1	18.7	95	93	44-143	2	36	
Methylene Chloride	ug/L	ND	20	20	20.9	20.7	104	104	65-135	1	33	
Styrene	ug/L	ND	20	20	18.0	18.1	90	90	49-141	0	37	
Tetrachloroethene	ug/L	ND	20	20	18.4	17.8	92	89	62-134	3	33	
Toluene	ug/L	ND	20	20	19.2	19.0	96	95	45-142	1	36	
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.6	18.5	98	92	65-133	6	32	
trans-1,3-Dichloropropene	ug/L	ND	20	20	14.2	13.8	71	69	56-127	3	28	
Trichloroethene	ug/L	ND	20	20	20.8	21.5	104	107	61-148	3	25	
Vinyl chloride	ug/L	ND	20	20	20.9	20.9	104	104	35-185	0	29	
Xylene (Total)	ug/L	ND	60	60	56.8	56.6	95	94	33-149	0	35	
1,2-Dichloroethane-d4 (S)	%						103	97	77-122			
4-Bromofluorobenzene (S)	%						100	101	80-120			
Toluene-d8 (S)	%						102	100	80-120			
Preservation pH		1.0			1.0	1.0				0		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2524969			2524970							
Parameter	Units	60318969006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	20.4	20.2	102	101	67-137	1	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	18.2	19.7	91	98	54-134	8	33	
1,1,2-Trichloroethane	ug/L	ND	20	20	19.1	18.7	96	93	59-131	2	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2524969 2524970

Parameter	Units	60318969006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	19.9	19.6	100	98	63-134	1	31	
1,1-Dichloroethene	ug/L	ND	20	20	22.3	21.6	111	108	64-140	3	37	
1,2-Dichloroethane	ug/L	ND	20	20	18.3	18.2	92	91	42-140	1	35	
1,2-Dichloropropane	ug/L	ND	20	20	19.9	19.3	100	96	60-132	3	30	
2-Butanone (MEK)	ug/L	ND	100	100	86.8	86.5	87	86	44-132	0	34	
2-Hexanone	ug/L	ND	100	100	87.1	88.1	87	88	47-134	1	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	89.1	91.5	89	91	50-136	3	34	
Acetone	ug/L	ND	100	100	80.1	77.4	80	77	35-129	3	35	
Benzene	ug/L	ND	20	20	19.5	19.4	98	97	42-137	1	35	
Bromodichloromethane	ug/L	ND	20	20	18.2	17.7	91	88	61-130	3	32	
Bromoform	ug/L	ND	20	20	16.3	16.2	81	81	53-128	1	32	
Bromomethane	ug/L	ND	20	20	21.8	21.4	109	107	33-148	2	42	
Carbon disulfide	ug/L	ND	20	20	19.2	18.5	96	93	52-138	4	37	
Carbon tetrachloride	ug/L	ND	20	20	20.4	20.4	102	102	65-143	0	31	
Chlorobenzene	ug/L	ND	20	20	19.6	19.2	98	96	63-131	2	30	
Chloroethane	ug/L	ND	20	20	21.1	21.4	106	107	51-153	1	39	
Chloroform	ug/L	ND	20	20	20.1	19.8	101	99	62-129	1	32	
Chloromethane	ug/L	ND	20	20	19.3	17.7	97	89	16-169	9	59	
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.8	18.0	94	90	43-152	5	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	16.1	16.3	81	82	58-127	1	31	
Dibromochloromethane	ug/L	ND	20	20	17.3	16.9	87	85	54-134	2	33	
Ethylbenzene	ug/L	ND	20	20	19.6	19.0	98	95	44-143	3	36	
Methylene Chloride	ug/L	ND	20	20	20.2	20.9	101	104	65-135	3	33	
Styrene	ug/L	ND	20	20	18.6	18.0	93	90	49-141	3	37	
Tetrachloroethene	ug/L	ND	20	20	18.4	17.9	92	89	62-134	3	33	
Toluene	ug/L	ND	20	20	19.5	19.0	97	95	45-142	2	36	
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.5	18.6	97	93	65-133	5	32	
trans-1,3-Dichloropropene	ug/L	ND	20	20	14.7	14.7	74	74	56-127	0	28	
Trichloroethene	ug/L	ND	20	20	21.5	21.1	108	106	61-148	2	25	
Vinyl chloride	ug/L	ND	20	20	21.2	20.6	106	103	35-185	3	29	
Xylene (Total)	ug/L	ND	60	60	58.5	56.5	97	94	33-149	3	35	
1,2-Dichloroethane-d4 (S)	%						100	101	77-122			
4-Bromofluorobenzene (S)	%						99	100	80-120			
Toluene-d8 (S)	%						101	100	80-120			
Preservation pH		1.0			1.0	1.0				0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 619494 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60318969001, 60318969009, 60318969010, 60318969011, 60318969012, 60318969013, 60318969014, 60318969015, 60318969016, 60318969017, 60318969018, 60318969019, 60318969020, 60318969021, 60318969022, 60318969023

METHOD BLANK: 2526821 Matrix: Water
Associated Lab Samples: 60318969001, 60318969009, 60318969010, 60318969011, 60318969012, 60318969013, 60318969014, 60318969015, 60318969016, 60318969017, 60318969018, 60318969019, 60318969020, 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	10/31/19 20:37	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	10/31/19 20:37	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	10/31/19 20:37	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	10/31/19 20:37	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	10/31/19 20:37	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	10/31/19 20:37	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	10/31/19 20:37	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	10/31/19 20:37	
2-Hexanone	ug/L	ND	10.0	1.0	10/31/19 20:37	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	10/31/19 20:37	
Acetone	ug/L	ND	10.0	3.3	10/31/19 20:37	
Benzene	ug/L	ND	1.0	0.079	10/31/19 20:37	
Bromodichloromethane	ug/L	ND	1.0	0.17	10/31/19 20:37	
Bromoform	ug/L	ND	1.0	0.21	10/31/19 20:37	
Bromomethane	ug/L	ND	5.0	0.32	10/31/19 20:37	
Carbon disulfide	ug/L	ND	5.0	0.16	10/31/19 20:37	
Carbon tetrachloride	ug/L	ND	1.0	0.084	10/31/19 20:37	
Chlorobenzene	ug/L	ND	1.0	0.13	10/31/19 20:37	
Chloroethane	ug/L	ND	1.0	0.42	10/31/19 20:37	
Chloroform	ug/L	ND	1.0	0.10	10/31/19 20:37	
Chloromethane	ug/L	ND	1.0	0.16	10/31/19 20:37	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 20:37	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	10/31/19 20:37	
Dibromochloromethane	ug/L	ND	1.0	0.15	10/31/19 20:37	
Ethylbenzene	ug/L	ND	1.0	0.12	10/31/19 20:37	
Methylene Chloride	ug/L	ND	1.0	0.27	10/31/19 20:37	
Styrene	ug/L	ND	1.0	0.15	10/31/19 20:37	
Tetrachloroethene	ug/L	ND	1.0	0.22	10/31/19 20:37	
Toluene	ug/L	ND	1.0	0.14	10/31/19 20:37	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 20:37	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	10/31/19 20:37	
Trichloroethene	ug/L	ND	1.0	0.17	10/31/19 20:37	
Vinyl chloride	ug/L	ND	1.0	0.11	10/31/19 20:37	
Xylene (Total)	ug/L	ND	3.0	0.34	10/31/19 20:37	
1,2-Dichloroethane-d4 (S)	%	101	77-122		10/31/19 20:37	
4-Bromofluorobenzene (S)	%	99	80-120		10/31/19 20:37	
Toluene-d8 (S)	%	102	80-120		10/31/19 20:37	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

LABORATORY CONTROL SAMPLE: 2526822

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.9	99	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	18.4	92	71-122	
1,1,2-Trichloroethane	ug/L	20	19.5	97	76-123	
1,1-Dichloroethane	ug/L	20	20.7	104	78-117	
1,1-Dichloroethene	ug/L	20	22.6	113	74-122	
1,2-Dichloroethane	ug/L	20	19.9	100	73-120	
1,2-Dichloropropane	ug/L	20	20.3	102	78-115	
2-Butanone (MEK)	ug/L	100	98.6	99	54-133	
2-Hexanone	ug/L	100	94.1	94	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	97.3	97	62-130	
Acetone	ug/L	100	99.0	99	54-130	
Benzene	ug/L	20	19.6	98	80-120	
Bromodichloromethane	ug/L	20	18.3	92	78-121	
Bromoform	ug/L	20	16.0	80	62-137	
Bromomethane	ug/L	20	23.0	115	41-145	
Carbon disulfide	ug/L	20	20.5	102	64-119	
Carbon tetrachloride	ug/L	20	20.4	102	77-122	
Chlorobenzene	ug/L	20	19.9	100	80-123	
Chloroethane	ug/L	20	21.5	107	60-146	
Chloroform	ug/L	20	21.0	105	81-116	
Chloromethane	ug/L	20	22.6	113	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.9	99	80-120	
cis-1,3-Dichloropropene	ug/L	20	18.9	95	78-118	
Dibromochloromethane	ug/L	20	17.7	88	73-128	
Ethylbenzene	ug/L	20	19.7	98	80-120	
Methylene Chloride	ug/L	20	21.4	107	80-126	
Styrene	ug/L	20	19.9	100	85-120	
Tetrachloroethene	ug/L	20	19.1	95	77-121	
Toluene	ug/L	20	19.2	96	80-120	
trans-1,2-Dichloroethene	ug/L	20	21.6	108	80-120	
trans-1,3-Dichloropropene	ug/L	20	17.0	85	76-123	
Trichloroethene	ug/L	20	22.4	112	80-121	
Vinyl chloride	ug/L	20	21.4	107	46-162	
Xylene (Total)	ug/L	60	60.5	101	80-120	
1,2-Dichloroethane-d4 (S)	%			103	77-122	
4-Bromofluorobenzene (S)	%			98	80-120	
Toluene-d8 (S)	%			98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2526823 2526824

Parameter	Units	60318969009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	21.8	20.7	109	104	67-137	5	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.1	19.6	101	98	54-134	3	33	
1,1,2-Trichloroethane	ug/L	ND	20	20	20.2	19.5	101	98	59-131	3	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2526823			2526824							
Parameter	Units	60318969009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	21.3	21.1	106	105	63-134	1	31	
1,1-Dichloroethene	ug/L	ND	20	20	24.0	24.2	120	121	64-140	1	37	
1,2-Dichloroethane	ug/L	ND	20	20	19.8	19.0	98	94	42-140	4	35	
1,2-Dichloropropane	ug/L	ND	20	20	20.2	20.0	101	100	60-132	1	30	
2-Butanone (MEK)	ug/L	ND	100	100	97.9	95.8	98	96	44-132	2	34	
2-Hexanone	ug/L	ND	100	100	96.5	93.5	96	94	47-134	3	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	101	97.5	101	98	50-136	3	34	
Acetone	ug/L	ND	100	100	90.6	82.3	91	82	35-129	10	35	
Benzene	ug/L	ND	20	20	20.6	20.4	103	102	42-137	1	35	
Bromodichloromethane	ug/L	ND	20	20	19.0	18.6	95	93	61-130	2	32	
Bromoform	ug/L	ND	20	20	16.6	16.9	83	84	53-128	2	32	
Bromomethane	ug/L	ND	20	20	19.4	21.8	97	109	33-148	12	42	
Carbon disulfide	ug/L	ND	20	20	21.8	22.0	109	110	52-138	1	37	
Carbon tetrachloride	ug/L	ND	20	20	22.0	21.3	110	106	65-143	3	31	
Chlorobenzene	ug/L	ND	20	20	20.4	19.7	102	98	63-131	4	30	
Chloroethane	ug/L	ND	20	20	22.7	23.5	113	117	51-153	3	39	
Chloroform	ug/L	ND	20	20	21.6	21.1	108	106	62-129	2	32	
Chloromethane	ug/L	ND	20	20	22.0	23.7	110	119	16-169	7	59	
cis-1,2-Dichloroethene	ug/L	ND	20	20	20.5	19.9	103	100	43-152	3	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	18.8	18.6	94	93	58-127	1	31	
Dibromochloromethane	ug/L	ND	20	20	18.0	17.4	90	87	54-134	4	33	
Ethylbenzene	ug/L	ND	20	20	19.9	19.7	100	99	44-143	1	36	
Methylene Chloride	ug/L	ND	20	20	21.6	21.6	108	108	65-135	0	33	
Styrene	ug/L	ND	20	20	18.8	18.5	94	93	49-141	2	37	
Tetrachloroethene	ug/L	ND	20	20	20.0	19.2	100	96	62-134	4	33	
Toluene	ug/L	ND	20	20	20.4	19.4	102	97	45-142	5	36	
trans-1,2-Dichloroethene	ug/L	ND	20	20	21.5	20.4	108	102	65-133	5	32	
trans-1,3-Dichloropropene	ug/L	ND	20	20	16.5	16.5	83	83	56-127	0	28	
Trichloroethene	ug/L	ND	20	20	23.7	22.1	119	111	61-148	7	25	
Vinyl chloride	ug/L	ND	20	20	23.3	23.0	116	115	35-185	1	29	
Xylene (Total)	ug/L	ND	60	60	60.7	59.5	101	99	33-149	2	35	
1,2-Dichloroethane-d4 (S)	%						106	105	77-122			
4-Bromofluorobenzene (S)	%						98	98	80-120			
Toluene-d8 (S)	%						100	100	80-120			
Preservation pH		1.0			1.0	1.0				0		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2526825			2526826							
Parameter	Units	60318969015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	21.6	20.4	108	102	67-137	5	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	19.7	20.4	98	102	54-134	4	33	
1,1,2-Trichloroethane	ug/L	ND	20	20	19.2	19.3	96	97	59-131	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2526825 2526826

Parameter	Units	60318969015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	21.0	20.2	105	101	63-134	4	31	
1,1-Dichloroethene	ug/L	ND	20	20	23.8	23.2	119	116	64-140	3	37	
1,2-Dichloroethane	ug/L	ND	20	20	19.4	19.0	97	95	42-140	2	35	
1,2-Dichloropropane	ug/L	ND	20	20	19.8	19.9	99	100	60-132	0	30	
2-Butanone (MEK)	ug/L	ND	100	100	96.0	89.8	96	90	44-132	7	34	
2-Hexanone	ug/L	ND	100	100	93.5	92.5	94	93	47-134	1	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	99.3	96.3	99	96	50-136	3	34	
Acetone	ug/L	ND	100	100	91.4	77.2	91	77	35-129	17	35	
Benzene	ug/L	ND	20	20	20.1	19.9	101	100	42-137	1	35	
Bromodichloromethane	ug/L	ND	20	20	18.5	18.0	92	90	61-130	2	32	
Bromoform	ug/L	ND	20	20	16.6	15.9	83	79	53-128	4	32	
Bromomethane	ug/L	ND	20	20	22.1	22.4	110	112	33-148	1	42	
Carbon disulfide	ug/L	ND	20	20	21.2	21.1	106	105	52-138	0	37	
Carbon tetrachloride	ug/L	ND	20	20	21.2	21.2	106	106	65-143	0	31	
Chlorobenzene	ug/L	ND	20	20	19.9	19.5	99	97	63-131	2	30	
Chloroethane	ug/L	ND	20	20	23.2	21.1	116	106	51-153	9	39	
Chloroform	ug/L	ND	20	20	21.3	20.4	106	102	62-129	4	32	
Chloromethane	ug/L	ND	20	20	23.0	19.9	115	99	16-169	15	59	
cis-1,2-Dichloroethene	ug/L	ND	20	20	20.3	19.3	102	97	43-152	5	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	18.6	18.6	93	93	58-127	0	31	
Dibromochloromethane	ug/L	ND	20	20	16.7	17.4	83	87	54-134	4	33	
Ethylbenzene	ug/L	ND	20	20	19.4	19.7	97	99	44-143	2	36	
Methylene Chloride	ug/L	ND	20	20	21.7	20.7	108	104	65-135	4	33	
Styrene	ug/L	ND	20	20	14.6	14.8	73	74	49-141	1	37	
Tetrachloroethene	ug/L	ND	20	20	18.8	19.2	94	96	62-134	2	33	
Toluene	ug/L	ND	20	20	19.5	19.9	97	99	45-142	2	36	
trans-1,2-Dichloroethene	ug/L	ND	20	20	21.2	18.8	106	94	65-133	12	32	
trans-1,3-Dichloropropene	ug/L	ND	20	20	16.2	16.5	81	82	56-127	2	28	
Trichloroethene	ug/L	ND	20	20	22.2	22.1	111	111	61-148	0	25	
Vinyl chloride	ug/L	ND	20	20	23.4	22.2	117	111	35-185	5	29	
Xylene (Total)	ug/L	ND	60	60	59.9	58.3	100	97	33-149	3	35	
1,2-Dichloroethane-d4 (S)	%						106	100	77-122			
4-Bromofluorobenzene (S)	%						96	102	80-120			
Toluene-d8 (S)	%						100	100	80-120			
Preservation pH		1.0			1.0	1.0				0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 618512 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60318969021, 60318969022, 60318969023

METHOD BLANK: 2524101 Matrix: Water
Associated Lab Samples: 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	0.039	10/28/19 10:44	

LABORATORY CONTROL SAMPLE: 2524102

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.49	99	80-120	

MATRIX SPIKE SAMPLE: 2524103

Parameter	Units	60318813003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.5	0.50	100	75-125	

SAMPLE DUPLICATE: 2524104

Parameter	Units	60318813005 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

SAMPLE DUPLICATE: 2524105

Parameter	Units	60318969023 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 620217 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

METHOD BLANK: 2529350 Matrix: Water
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	11/05/19 16:48	
Sulfate	mg/L	ND	1.0	0.23	11/05/19 16:48	

METHOD BLANK: 2531552 Matrix: Water
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	11/06/19 10:25	
Sulfate	mg/L	ND	1.0	0.23	11/06/19 10:25	

LABORATORY CONTROL SAMPLE: 2529351

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	98	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

LABORATORY CONTROL SAMPLE: 2531553

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2529352 2529353

Parameter	Units	60318275001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	146	2000	2000	6510	6000	318	293	80-120	8	15	M1
Sulfate	mg/L	1750	2000	2000	7630	7570	294	291	80-120	1	15	M1

MATRIX SPIKE SAMPLE: 2529354

Parameter	Units	60318978002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.3	5	6.1	96	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

MATRIX SPIKE SAMPLE: 2529354

Parameter	Units	60318978002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	54.7	5	58.0	68	80-120	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 617944 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

METHOD BLANK: 2521244 Matrix: Water
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	0.067	10/23/19 17:32	
Nitrogen, Nitrite	mg/L	ND	0.10	0.067	10/23/19 17:32	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	10/23/19 17:32	

LABORATORY CONTROL SAMPLE: 2521245

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	0.91	91	70-130	
Nitrogen, Nitrite	mg/L	1	1.0	102	90-110	
Nitrogen, NO2 plus NO3	mg/L	2	1.9	97	90-110	

MATRIX SPIKE SAMPLE: 2521246

Parameter	Units	60319009002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	1	0.92	92	70-130	
Nitrogen, Nitrite	mg/L	1.4	1	2.4	109	90-110	
Nitrogen, NO2 plus NO3	mg/L	1.3	2	3.4	101	90-110	

MATRIX SPIKE SAMPLE: 2521248

Parameter	Units	60318969021 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	1	0.93	93	70-130	
Nitrogen, Nitrite	mg/L	ND	1	1.1	112	90-110	M1
Nitrogen, NO2 plus NO3	mg/L	ND	2	2.0	102	90-110	

SAMPLE DUPLICATE: 2521247

Parameter	Units	60319006001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	31.3	30.6	2	20	
Nitrogen, Nitrite	mg/L	1.4	1.4	2	20	
Nitrogen, NO2 plus NO3	mg/L	32.7	32.0	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 619144 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60318969021, 60318969023

METHOD BLANK: 2525747 Matrix: Water
Associated Lab Samples: 60318969021, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	10/30/19 10:29	

LABORATORY CONTROL SAMPLE: 2525748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.4	108	80-120	

MATRIX SPIKE SAMPLE: 2525749

Parameter	Units	60319126003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	1.9	5	3.8	39	80-120	M1

SAMPLE DUPLICATE: 2525750

Parameter	Units	60319556002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	51.4	48.0	7	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 619519 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60318969020, 60318969022

METHOD BLANK: 2526884 Matrix: Water
Associated Lab Samples: 60318969020, 60318969022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	10/31/19 16:17	

LABORATORY CONTROL SAMPLE: 2526885

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.5	110	80-120	

MATRIX SPIKE SAMPLE: 2526886

Parameter	Units	60319115044 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	212	125	345	106	80-120	

SAMPLE DUPLICATE: 2526887

Parameter	Units	60318969020 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	1130	1130	0	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 619520 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60318969020, 60318969021, 60318969022

METHOD BLANK: 2526889 Matrix: Water
Associated Lab Samples: 60318969020, 60318969021, 60318969022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	0.30J	1.0	0.29	10/31/19 22:45	

LABORATORY CONTROL SAMPLE: 2526890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.5	111	80-120	

MATRIX SPIKE SAMPLE: 2526891

Parameter	Units	60319115044 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	203	125	329	101	80-120	

SAMPLE DUPLICATE: 2526892

Parameter	Units	60319115061 Result	Dup Result	RPD	Max RPD	Qualifiers
Dissolved Organic Carbon	mg/L	0.81J	0.78J		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60318969020	**TMW-21-201910**	EPA 3010	618015	EPA 6010	618156
60318969021	**TMW-11-201910**	EPA 3010	618015	EPA 6010	618156
60318969022	**TMW-10-201910**	EPA 3010	618015	EPA 6010	618156
60318969023	**MW-89-201910**	EPA 3010	618015	EPA 6010	618156
60318969001	**MW-176-201910**	EPA 5030B/8260	618900		
60318969001	**MW-176-201910**	EPA 5030B/8260	619494		
60318969002	**MW-187-201910**	EPA 5030B/8260	618900		
60318969003	**MW-188-201910**	EPA 5030B/8260	618900		
60318969004	**MW-62R-201910**	EPA 5030B/8260	618900		
60318969005	**MW-68-201910**	EPA 5030B/8260	618900		
60318969006	**MW-40R-201910**	EPA 5030B/8260	618900		
60318969007	**MW-191-201910**	EPA 5030B/8260	618900		
60318969008	**MW-190-201910**	EPA 5030B/8260	618900		
60318969009	**MW-192-201910**	EPA 5030B/8260	619494		
60318969010	**TMW-35-201910**	EPA 5030B/8260	619494		
60318969011	**MW-63R-201910**	EPA 5030B/8260	619494		
60318969012	**MW-39R-201910**	EPA 5030B/8260	619494		
60318969013	**EB-01-201910**	EPA 5030B/8260	619494		
60318969014	**TB-01-201910**	EPA 5030B/8260	619494		
60318969015	**MW-195-201910**	EPA 5030B/8260	619494		
60318969016	**TMW-29-201910**	EPA 5030B/8260	619494		
60318969017	**TMW-20-201910**	EPA 5030B/8260	619494		
60318969018	**TB-02-201910**	EPA 5030B/8260	619494		
60318969019	**ITMW-7-201910**	EPA 5030B/8260	619494		
60318969020	**TMW-21-201910**	EPA 5030B/8260	619494		
60318969021	**TMW-11-201910**	EPA 5030B/8260	619494		
60318969022	**TMW-10-201910**	EPA 5030B/8260	619494		
60318969023	**MW-89-201910**	EPA 5030B/8260	619494		
60318969021	**TMW-11-201910**	SM 4500-S-2 D	618512		
60318969022	**TMW-10-201910**	SM 4500-S-2 D	618512		
60318969023	**MW-89-201910**	SM 4500-S-2 D	618512		
60318969020	**TMW-21-201910**	EPA 300.0	620217		
60318969021	**TMW-11-201910**	EPA 300.0	620217		
60318969022	**TMW-10-201910**	EPA 300.0	620217		
60318969023	**MW-89-201910**	EPA 300.0	620217		
60318969020	**TMW-21-201910**	EPA 353.2	617944		
60318969021	**TMW-11-201910**	EPA 353.2	617944		
60318969022	**TMW-10-201910**	EPA 353.2	617944		
60318969023	**MW-89-201910**	EPA 353.2	617944		
60318969020	**TMW-21-201910**	SM 5310C	619519		
60318969021	**TMW-11-201910**	SM 5310C	619144		
60318969022	**TMW-10-201910**	SM 5310C	619519		
60318969023	**MW-89-201910**	SM 5310C	619144		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60318969020	**TMW-21-201910**	SM 5310C	619520		
60318969021	**TMW-11-201910**	SM 5310C	619520		
60318969022	**TMW-10-201910**	SM 5310C	619520		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Aff

WO# : 60318969

60318969

MTJL Log-in

ALL S

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller nzurweller@ramboll.com	Site Collection Info/Address: Fort Smith, AR
Customer Project Name/Number:	State: AR County/City: Sebastian Time Zone Collected: PT MT (CT) ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [X] No
Collected by (print): Alyssa Larson	Purchase Order #: DW PWS ID #:
Collected by (signature): Alyssa	Quote #: DW Location Code #:
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold	Turnaround Date Required: RUSH: Std TAT Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply) Immediately Packed on Ice? [X] Yes [ ] No Field Filtered (if applicable): [ ] Yes [X] No Analysis:

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: VOCs (Full List 8260)	LAB USE ONLY: Lab Sample # / Comments
MW-176-201910	GW	Grab	10/22/19	1555	N/A	N/A		3	X	001
MW-187-201910				1425						002
MW-188-201910				1535						003
MW-188-201910-MS				1535						004
MW-188-201910-MSD				1535						005
MW-62R-201910				1309						004 006
MW-68-201910				1434						005 007
MW-70R-201910				1605						006 008
MW-70R-201910-MS				1605						
MW-70R-201910-MSD				1605						

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

Packing Material Used: Zip Bubble Bag

Radchem Sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

LAB Tracking #:

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier

SHORT HOLDS PRESENT (< 72 hours): Y (N) N/A

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: (Y) N NA

Therm ID #: T298

Cooler Temp Upon Receipt: 1.6 oC 2.1

Cooler Therm Corr. Factor: +0.0 oC

Cooler Temp Corrected: 1.6 oC 2.1

Comments:

Trip Blank Received: (Y) N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 1 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
(see page 4)		[illegible]	10.23.19 0620
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	(Y)	N	NA
Custody Signatures Present	(Y)	N	NA
Collector Signature Present	(Y)	N	NA
Bottles Intact	(Y)	N	NA
Correct Bottles	(Y)	N	NA
Sufficient Volume	(Y)	N	NA
Samples received on ice	(Y)	N	NA
VOA - Headspace Acceptable	(Y)	N	NA
USDA Regulated Soils	Y	N	(NA)
Samples in holding time	(Y)	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips:			
Sample pH Acceptable	Y	(N)	NA
pH Strips:			
Sulfide Present	(Y)	N	NA
Lead Acetate Strips:			

60318969

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Container Preservative Type **: 3

Lab Project Manager:

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Copy To: Nick Zurweller nzurweller@ramboll.com

Site Collection Info/Address: Fort Smith, AR

Customer Project Name/Number:

State: AR / County/City: Sebastian / Time Zone Collected: PT MT (CT) ET

Analyses: VOCs (Full List 8260)

LAB Profile/Line: 7444 Line 1

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [X] No

Collected by (print): Alyssa Lanser

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature):

Turnaround Date Required:

Immediately Packed on Ice? [X] Yes [ ] No

Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____

RUSH: Std TAT Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [X] No

Analysis: _____

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60318969

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	VOCs (Full List 8260)	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
MW-191-201910	GW	Grab	10/22/19	12:55	N/A	N/A		3	X	007
MW-190-201910				14:25						008
MW-192-201910				1555						009
MW-192-201910-MS				1555						
MW-192-201910-MSD				1555						
TMW-35-201910				1550						010
TMW-35-201910-MS				1550						
TMW-35-201910-MSD				1550						
MW-03R-201910				1310						011
MW-39R-201910	↓	↓	↓	1430	↓	↓		↓	↓	012

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #:

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments:

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature) (see page 4)		Received by/Company : (Signature)	10/23/19 0625
Relinquished by/Company : (Signature)		Received by/Company : (Signature)	
Relinquished by/Company : (Signature)		Received by/Company : (Signature)	

Pace Analytical®

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller nzurweller@ramboll.com

Site Collection Info/Address: Fort Smith, AR

Customer Project Name/Number:

State: AR / County/City: Sebastian / Time Zone Collected: PT MT CT ET

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [X] No

Collected by (print): Alyssa Larson

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature): Alyssa L

Turnaround Date Required:

Immediately Packed on Ice? [X] Yes [ ] No

Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive ____ [ ] Hold ____

RUSH: Std. TAT Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [X] No

Analysis: ____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other ____

Analyses: VOCs (Full List 8260)

LAB Project Manager:

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: ____			
Sample pH Acceptable	Y	N	NA
pH Strips: ____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: ____			

60318969

↓ LAB USE ONLY: ↓

	Customer Sample ID	Matrix*	Comp/Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	VOCs (Full List 8260)	Lab Sample # / Comments
1	EB-01-201910	W	Grab	10/22/19	1650	N/A	N/A		3	X	013
1	TB-01-201910	W	—		17:05				2		014
1	MW-195-201910	GW	Grab		16:20				3		015
1	MW-195-201910-MS				16:20						
1	MW-195-201910-MSD				16:20						
1	TMW-29-201910				~~16:25~~ 1430						016
1	TMW-20-201910				1405						017
2	TB-02-201910	W	—		1715				2		018
1	ITMW-07-201910	GW	Grab		1715				3		019

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: ____

ACCT #: ____

Template: ____

Prelogin: ____

PM: ____

PB: ____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: ____

Cooler Temp Upon Receipt ____ oC

Cooler Therm Corr. Factor ____ oC

Cooler Temp Corrected ____ oC

Comments: ____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 3 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
	(See page 4)	Liz of Mass	10-23-19 0612
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

F-ALL-C-010-rev.00, 05Jul2018

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller nzurweller@ramboll.com	Site Collection Info/Address: Fort Smith AR
Customer Project Name/Number:	State: AR County/City: Sebastian Time Zone Collected: PT MT (CT) ET
Phone: Email: jpavlowsky@ramboll.com	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected by (print): Johanna Pavlowsky	Purchase Order #: DW PWS ID #:
Collected by (signature): JP Pavlowsky	Quote #: DW Location Code #:
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold	Turnaround Date Required: RUSH: (Std) Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)
	Immediately Packed on Ice? [X] Yes [ ] No Field Filtered (if applicable): [ ] Yes [X] No Analysis:

Container Preservative Type **: (3) (D) (D) (2) (1) (O) 4°C

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other benzylalkonium chloride (BAK)

Lab Project Manager:

LAB Profile/Line: 7444 Line 1

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

	Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	VOCs EPA 8260	Methylene, Ethane, Ethene (MEE)	MEE, Acetylene (MEEA)	Sulfate, Nitrate, Chloride	Sulfate, Nitrate (only)	TOTAL organic carbon	TOTAL IRON	volatile fatty acids	TOTAL DISSOLVED CARBON	Sulfide	hydrogen	
2	TMW-21-201910	GW	G	10-22-19	1600				12	X	X		X		X	X	X	X			020
2	TMW-11-201910	GW	G		1345				14	X		X	X		X	X	X	X	X	X	021
2	TMW-10-201910	GW	G		1405				14	X		X	X		X	X	X	X	X	X	022
2	MW-89-201910	GW	G	↓	1630				11	X		X		X	X	X	X	X	X	X	023

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	(Y)	N	NA
Custody Signatures Present	(Y)	N	NA
Collector Signature Present	(Y)	N	NA
Bottles Intact	(Y)	N	NA
Correct Bottles	(Y)	N	NA
Sufficient Volume	(Y)	N	NA
Samples received on ice	(Y)	N	NA
VOA - Headspace Acceptable	(Y)	N	NA
USDA Regulated Soils	(Y)	N	(NA)
Samples in holding time	(Y)	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips:			
Sample pH Acceptable	Y	(N)	NA
pH Strips:			
Sulfide Present	(Y)	N	NA
Lead Acetate Strips:			

6031 8969

↓ LAB USE ONLY: ↓ Lab Sample # / Comments

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y (N) N/A

Packing Material Used: Zplc Bubble Bag

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
JP Pavlowsky /REH	10/22/19 @1800	Client Bus	10/23/19 0620
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: T298

Cooler Temp Upon Receipt: 1.6 °C 2.1

Cooler Therm Corr. Factor: +0.0 °C

Cooler Temp Corrected: 1.6 °C

Comments:

Trip Blank Received: (Y) N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 1 of 4

Pace Analytical
www.pacelabs.com

Sample Receiving Non-Conformance Form (NCF)

Date: 10-23-19	Evaluated by: Wr.pt / Pag
Client: Kaw boll	

Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. If COC is incomplete, check applicable issues below and add details where appropriate:

	Collection date/time missing or incorrect		Analyses or analytes: missing or clarification needed		Samples listed on COC do not match samples received (missing, additional, etc.)
	Sample IDs on COC do not match sample labels		Required trip blanks were not received		Required signatures are missing

Comments/Details/Other Issues not listed above:

3. Sample integrity issues: check applicable issues below and add details where appropriate:

	Samples: Past holding time		Samples: Condition needs to be brought to lab personnel's attention (details below)	X	Preservation: Improper
	Samples: Not field filtered		Containers: Broken or compromised		Temperature: not within acceptance criteria (typically 0-6C)
	Samples: Insufficient volume received		Containers: Incorrect		Temperature: Samples arrived frozen
	Samples: Cooler damaged or compromised		Custody Seals: Missing or compromised on samples, trip blanks or coolers		Vials received with improper headspace
	Samples: contain chlorine or sulfides		Packing Material: Insufficient/Improper		Other:

Comments/Details:

TMW-21-201910 has PH of 3
added 2.5 mL of HNO3 Final PH 1.5 Lot 9589-34

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:	
PM Initials:	Date/Time:	

Client Comments/Instructions:

	AG1U	AG2U	AG3U	BP1U	BP2U	BP3U	BP3S	AG3S	BP3N	BP3C	BP3Z	DG9H	DG9Q	DG9U	JGFU	WGKU	VG9U	AG1H	AG2H	AG4U	AG5U	OTHR
20 1						1		1	1			3	3									1 - Boston Rd.
21 2						1		1	1		1	3	3						40 mL - 2 - other			1 " " VG9U
22 3						1		1	1		1	3	3							" "		1 " " VG9U
23 4						1		1	1		1	3	3							" "		VG9U
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						
16																						
17																						
18																						
19																						
20																						

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 6, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60318969**

Pace Workorder: 31878

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Thursday, October 24, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/06/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 15

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31878 60318969

Lab ID	Sample ID	Matrix	Date Collected	Date Received
318780001	TMW-21-201910	Water	10/22/2019 16:00	10/24/2019 11:00
318780002	TMW-11-201910	Water	10/22/2019 13:45	10/24/2019 11:00
318780003	TMW-10-201910	Water	10/22/2019 14:05	10/24/2019 11:00

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31878 60318969

Lab ID: **318780001** Date Received: 10/24/2019 11:00 Matrix: Water

Sample ID: **TMW-21-201910** Date Collected: 10/22/2019 16:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<2.0**	mg/l	2.0	0.43	10	11/2/2019 01:54	KB	d
Acetic Acid	**130**	mg/l	10	2.8	100	11/2/2019 02:47	KB	d
Propionic Acid	**1300**	mg/l	100	4.0	1000	11/2/2019 03:40	KB	d
Formic Acid	**<50**	mg/l	50	8.6	100	11/2/2019 02:47	KB	d,B
Butyric Acid	**56**	mg/l	10	1.1	100	11/2/2019 02:47	KB	d
Pyruvic Acid	**5.4**	mg/l	1.0	0.050	10	11/2/2019 01:54	KB	d
i-Pentanoic Acid	**5.5**	mg/l	1.0	0.060	10	11/2/2019 01:54	KB	d
Pentanoic Acid	**130**	mg/l	10	0.70	100	11/2/2019 02:47	KB	d
i-Hexanoic Acid	**0.39**	mg/l	0.20	0.029	1	10/31/2019 05:16	KB	
Hexanoic Acid	**6.3**	mg/l	2.0	0.10	10	11/2/2019 01:54	KB	d

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31878 60318969

Lab ID: **318780002** Date Received: 10/24/2019 11:00 Matrix: Water

Sample ID: **TMW-11-201910** Date Collected: 10/22/2019 13:45

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	10/31/2019 06:09	KB	
Acetic Acid	**0.19**	mg/l	0.10	0.028	1	10/31/2019 06:09	KB	
Propionic Acid	**0.40**	mg/l	0.10	0.0040	1	10/31/2019 06:09	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	10/31/2019 06:09	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	10/31/2019 06:09	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	10/31/2019 06:09	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 06:09	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	10/31/2019 06:09	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 06:09	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	10/31/2019 06:09	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31878 60318969

Lab ID: **318780003** Date Received: 10/24/2019 11:00 Matrix: Water

Sample ID: **TMW-10-201910** Date Collected: 10/22/2019 14:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	10/31/2019 07:03	KB	
Acetic Acid	**0.63**	mg/l	0.10	0.028	1	10/31/2019 07:03	KB	
Propionic Acid	**0.30**	mg/l	0.10	0.0040	1	10/31/2019 07:03	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	10/31/2019 07:03	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	10/31/2019 07:03	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	10/31/2019 07:03	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 07:03	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	10/31/2019 07:03	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 07:03	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	10/31/2019 07:03	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31878 60318969

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
B	The analyte was detected in the associated blank.
d	The analyte concentration was determined from a dilution.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31878 60318969

QC Batch: EDON/4247 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 318780001, 318780002, 318780003

METHOD BLANK: 64054

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	
Formic Acid	mg/l	<0.50	0.50	
Butyric Acid	mg/l	<0.10	0.10	
Pyruvic Acid	mg/l	<0.10	0.10	
i-Pentanoic Acid	mg/l	<0.10	0.10	
Pentanoic Acid	mg/l	<0.10	0.10	
i-Hexanoic Acid	mg/l	<0.20	0.20	
Hexanoic Acid	mg/l	<0.20	0.20	

LABORATORY CONTROL SAMPLE: 64055

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	1.9	97	70-130	
Acetic Acid	mg/l	2	1.9	93	70-130	
Propionic Acid	mg/l	2	1.9	97	70-130	
Formic Acid	mg/l	2	2.2	112	70-130	
Butyric Acid	mg/l	2	2.0	100	70-130	
Pyruvic Acid	mg/l	2	1.8	90	70-130	
i-Pentanoic Acid	mg/l	2	2.0	98	70-130	
Pentanoic Acid	mg/l	2	1.9	97	70-130	
i-Hexanoic Acid	mg/l	2	2.0	99	70-130	
Hexanoic Acid	mg/l	2	1.8	92	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64056 64057 Original: 319080001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
EDonors											
Lactic Acid	mg/l	0.032	2	1.8	1.9	90	92	70-130	1.9	30	
Acetic Acid	mg/l	0.032	2	2.0	1.9	96	95	70-130	1.1	30	

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31878 60318969

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64056 64057 Original: 319080001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Propionic Acid	mg/l	0.0053	2	2.0	1.9	98	97	70-130	1.3	30	
Formic Acid	mg/l	0.085	2	2.3	2.0	110	97	70-130	12	30	
Butyric Acid	mg/l	0.0049	2	2.0	2.0	100	98	70-130	1.7	30	
Pyruvic Acid	mg/l	0	2	1.7	1.7	87	87	70-130	0.46	30	
i-Pentanoic Acid	mg/l	0	2	2.0	2.0	100	98	70-130	2.5	30	
Pentanoic Acid	mg/l	0.036	2	2.0	1.9	98	95	70-130	3.6	30	
i-Hexanoic Acid	mg/l	0	2	2.1	2.0	105	98	70-130	6.9	30	
Hexanoic Acid	mg/l	0.0024	2	1.9	1.8	96	90	70-130	6.5	30	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31878 60318969

QC Batch: EDON/4257 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 318780001

METHOD BLANK: 64154

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	
Formic Acid	mg/l	<0.50	0.50	B
Butyric Acid	mg/l	<0.10	0.10	
Pyruvic Acid	mg/l	<0.10	0.10	
i-Pentanoic Acid	mg/l	<0.10	0.10	
Pentanoic Acid	mg/l	<0.10	0.10	
Hexanoic Acid	mg/l	<0.20	0.20	

LABORATORY CONTROL SAMPLE: 64155

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	2.0	98	70-130	
Acetic Acid	mg/l	2	1.9	97	70-130	
Propionic Acid	mg/l	2	2.0	99	70-130	
Formic Acid	mg/l	2	2.3	117	70-130	B
Butyric Acid	mg/l	2	2.0	100	70-130	
Pyruvic Acid	mg/l	2	1.8	90	70-130	
i-Pentanoic Acid	mg/l	2	2.0	99	70-130	
Pentanoic Acid	mg/l	2	2.0	102	70-130	
Hexanoic Acid	mg/l	2	1.9	94	70-130	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31878 60318969

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
318780001	TMW-21-201910			AM23G	EDON/4247
318780002	TMW-11-201910			AM23G	EDON/4247
318780003	TMW-10-201910			AM23G	EDON/4247
318780001	TMW-21-201910			AM23G	EDON/4257

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Chain of Custody

PASI Kansas Laboratory

31878

Pace Analytical®
www.pacelabs.com

Workorder: 60318969 **Workorder Name:** WHIRLPOOL FORT SMITH, AR **Results Requested By:** 11/6/2019

Report / Invoice To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy P.O._____

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Volatile Fatty Acids	LAB USE ONLY
1	TMW-21-201910	10/22/2019 16:00	60318969020	Water		X	
2	TMW-11-201910	10/22/2019 13:45	60318969021	Water		X	
3	TMW-10-201910	10/22/2019 14:05	60318969022	Water		X	
4							
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	Kelly Fowler PASI	10/23/19 1800	[illegible] PASI	10.24
2				11:00
3				

2 x 40 ml vials BAK

Cooler Temperature on Receipt 1.4 °C **Custody Seal** Y or (N) **Received on Ice** (Y)

Cooler Receipt Form

Client Name: Pace **Project:** 60318969 **Lab Work Order:** 31878

A. **Shipping/Container Information** (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ **Air bill Present:** (Yes) No

Tracking Number: 1219 2981 2342

Custody Seal on Cooler/Box Present: Yes (No) **Seals Intact:** Yes No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None **Ice Intact:** (Yes) Melted

Cooler Temperature: 1.40°C **Radiation Screened:** Yes (No) **Chain of Custody Present:** (Yes) No

Comments:_____

B. **Laboratory Assignment/Log-in** (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓	✓		
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?			✓	

Comments:_____

_____

Cooler contents examined/received by : LG **Date:** 10-24-19

Project Manager Review : JW **Date:** 10/24/19

NON-CONFORMANCE FORM

PAES Work Order #: 31878

Date: 10.24 Time of Receipt: 11:00 Receiver: LG

Client: Pace

REASON FOR NON-CONFORMANCE:

Vials IDs all started with ITMW.

ACTION TAKEN:

Client name: Jamie Church Date: 10/24/19 Time: 14:40

client emailed

Customer Service Initials: JW Date: 10/24/19

F-PAE-Q-014-rev.00, 20 Nov2014

Joseph Ward - Re: 60318969

From: Jamie Church
To: Ward, Joseph
Date: 10/24/2019 2:45 PM
Subject: Re: 60318969
Cc: Louis, Emma
Attachments: 60318969_coc.pdf

Here is the original COC. Says TMW

>>> Joseph Ward 10/24/2019 1:40 PM >>>
Upon receiving your samples for the project referenced above, We noticed the following.

The first three samples beginning ID's started with ITMW on the vials but on the COC it states the samples ID's should be TMW. Can you confirm the correct sample id?

Thank you

Joseph Ward
Customer Service
Pace Analytical Energy Services
220 William Pitt Way
Pittsburgh PA 15238
412-826-5245/412-826-2384(Direct)

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 06, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on October 24, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60319115001	MW-56R-201910	Water	10/23/19 11:29	10/24/19 06:15
60319115002	MW-57R-201910	Water	10/23/19 13:32	10/24/19 06:15
60319115003	TMW-19-201910	Water	10/23/19 16:06	10/24/19 06:15
60319115004	DUP-06-201910	Water	10/23/19 16:06	10/24/19 06:15
60319115005	MW-97-201910	Water	10/23/19 09:15	10/24/19 06:15
60319115006	MW-96-201910	Water	10/23/19 10:35	10/24/19 06:15
60319115007	MW-82-201910	Water	10/23/19 12:40	10/24/19 06:15
60319115008	DUP-02-201910	Water	10/23/19 12:40	10/24/19 06:15
60319115009	IW-78-201910	Water	10/23/19 14:05	10/24/19 06:15
60319115010	ITMW-1R-201910	Water	10/23/19 16:00	10/24/19 06:15
60319115011	MW-175-201910	Water	10/23/19 11:45	10/24/19 06:15
60319115012	TMW-30-201910	Water	10/23/19 14:45	10/24/19 06:15
60319115013	MW-182-201910	Water	10/23/19 16:00	10/24/19 06:15
60319115014	MW-29-201910	Water	10/23/19 09:10	10/24/19 06:15
60319115015	TMW-27-201910	Water	10/23/19 10:40	10/24/19 06:15
60319115016	ITMW-20-201910	Water	10/23/19 11:35	10/24/19 06:15
60319115017	DUP-05-201910	Water	10/23/19 11:35	10/24/19 06:15
60319115018	MW-26-201910	Water	10/23/19 12:35	10/24/19 06:15
60319115019	MW-84-201910	Water	10/23/19 14:55	10/24/19 06:15
60319115020	MW-22-201910	Water	10/23/19 16:00	10/24/19 06:15
60319115021	MW-28-201910	Water	10/23/19 17:15	10/24/19 06:15
60319115022	DUP-03-201910	Water	10/23/19 15:00	10/24/19 06:15
60319115023	MW-60R-201910	Water	10/23/19 09:40	10/24/19 06:15
60319115024	MW-196-201910	Water	10/23/19 10:55	10/24/19 06:15
60319115025	MW-55R-201910	Water	10/23/19 12:15	10/24/19 06:15
60319115026	DUP-04-2019110	Water	10/23/19 12:15	10/24/19 06:15
60319115027	TMW-24-2019110	Water	10/23/19 14:25	10/24/19 06:15
60319115028	TMW-23-2019110	Water	10/23/19 16:05	10/24/19 06:15
60319115029	MW-24-2019110	Water	10/23/19 17:20	10/24/19 06:15
60319115030	MW-178-201910	Water	10/23/19 16:45	10/24/19 06:15
60319115031	EB-02-201910	Water	10/23/19 17:05	10/24/19 06:15
60319115032	EB-03-201910	Water	10/23/19 17:05	10/24/19 06:15
60319115033	TB-03-201910	Water	10/23/19 07:30	10/24/19 06:15
60319115034	MW-98-201910	Water	10/23/19 09:50	10/24/19 06:15
60319115035	TB-04-201910	Water	10/23/19 17:50	10/24/19 06:15
60319115036	TB-05-201910	Water	10/23/19 17:55	10/24/19 06:15
60319115037	VP-10-201910	Water	10/23/19 10:00	10/24/19 06:15

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60319115038	**VP-12-201910**	Water	10/23/19 10:15	10/24/19 06:15
60319115039	**VP-7-201910**	Water	10/23/19 10:50	10/24/19 06:15
60319115040	**VP-8-201910**	Water	10/23/19 11:10	10/24/19 06:15
60319115041	**VP-14-201910**	Water	10/23/19 12:35	10/24/19 06:15
60319115042	**MW-194-201910**	Water	10/23/19 10:40	10/24/19 06:15
60319115043	**MW-61R-201910**	Water	10/23/19 09:10	10/24/19 06:15
60319115044	**TMW-26-201910**	Water	10/23/19 17:00	10/24/19 06:15
60319115045	**MW-46R-201910**	Water	10/23/19 15:00	10/24/19 06:15
60319115046	**MW-184-201910**	Water	10/23/19 13:40	10/24/19 06:15
60319115047	**MW-183R-201910**	Water	10/23/19 11:02	10/24/19 06:15
60319115048	**MW-99-201910**	Water	10/23/19 12:35	10/24/19 06:15
60319115049	**I W-77-201910**	Water	10/23/19 16:10	10/24/19 06:15
60319115050	**TMW-12-201910**	Water	10/23/19 09:30	10/24/19 06:15
60319115051	**TMW-14-201910**	Water	10/23/19 11:00	10/24/19 06:15
60319115052	**MW -50R-201910**	Water	10/23/19 09:35	10/24/19 06:15
60319115053	**RW -69-201910**	Water	10/23/19 11:25	10/24/19 06:15
60319115054	**ITMW -9-201910**	Water	10/23/19 13:05	10/24/19 06:15
60319115055	**MW -87-201910**	Water	10/23/19 13:10	10/24/19 06:15
60319115056	**MW -58R-201910**	Water	10/23/19 15:15	10/24/19 06:15
60319115057	**MW -38-201910**	Water	10/23/19 17:00	10/24/19 06:15
60319115058	**DUP -01-201910**	Water	10/23/19 15:15	10/24/19 06:15
60319115059	**DUP -07-201910**	Water	10/23/19 13:05	10/24/19 06:15
60319115060	**TMW -16-201910**	Water	10/23/19 15:15	10/24/19 06:15
60319115061	**TMW -22R-201910**	Water	10/23/19 12:30	10/24/19 06:15

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60319115001	MW-56R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115002	MW-57R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115003	TMW-19-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115004	DUP-06-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115005	MW-97-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115006	MW-96-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115007	MW-82-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115008	DUP-02-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115009	IW-78-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115010	ITMW-1R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115011	MW-175-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115012	TMW-30-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115013	MW-182-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115014	MW-29-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115015	TMW-27-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115016	ITMW-20-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115017	DUP-05-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115018	MW-26-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115019	MW-84-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115020	MW-22-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115021	MW-28-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115022	DUP-03-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115023	MW-60R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115024	MW-196-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115025	MW-55R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115026	DUP-04-2019110	EPA 5030B/8260	PGH	38	PASI-K
60319115027	TMW-24-2019110	EPA 5030B/8260	PGH	38	PASI-K
60319115028	TMW-23-2019110	EPA 5030B/8260	PGH	38	PASI-K
60319115029	MW-24-2019110	EPA 5030B/8260	PGH	38	PASI-K
60319115030	MW-178-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115031	EB-02-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115032	EB-03-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115033	TB-03-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115034	MW-98-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115035	TB-04-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115036	TB-05-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115037	VP-10-201910	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60319115038	**VP-12-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115039	**VP-7-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115040	**VP-8-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115041	**VP-14-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115042	**MW-194-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS, MJK	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115043	**MW-61R-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS, MJK	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115044	**TMW-26-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS, MJK	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115045	**MW-46R-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115046	**MW-184-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115047	**MW-183R-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115048	**MW-99-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115049	**I W-77-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115050	**TMW-12-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115051	**TMW-14-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115052	**MW -50R-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115053	**RW -69-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115054	**ITMW -9-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115055	**MW -87-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115056	**MW -58R-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115057	**MW -38-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MJK	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115058	**DUP -01-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115059	**DUP -07-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115060	**TMW -16-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115061	**TMW -22R-201910**	EPA 6010	LRS	1	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS, MJK	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
11 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
61 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

pH: Post-analysis pH measurement indicates insufficient VOA sample preservation.
- TMW-30-201910 (Lab ID: 60319115012)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 618529

B: Analyte was detected in the associated method blank.
- BLANK for HBN 618529 [MSV/1015 (Lab ID: 2524157)
  - 1,2-Dichloroethane
  - Tetrachloroethene

QC Batch: 618530

B: Analyte was detected in the associated method blank.
- BLANK for HBN 618530 [MSV/1015 (Lab ID: 2524159)
  - Carbon disulfide

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 618526

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 06, 2019

QC Batch: 618529
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 618530
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 618858
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 619234
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 619489
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 620343
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
6 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
11 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 unpres
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
11 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 618075

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60319115043,60319115057

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2521955)
  - Nitrogen, Nitrite

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **SM 5310C**
Description: 5310C TOC
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
11 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **SM 5310C**
Description: 5310C Diss. Organic Carbon LF
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
5 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 619520

B: Analyte was detected in the associated method blank.

- BLANK for HBN 619520 [WETA/631 (Lab ID: 2526889)
  - Dissolved Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-56R-201910 **Lab ID: 60319115001** Collected: 10/23/19 11:29 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 12:38	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 12:38	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 12:38	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 12:38	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 12:38	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 12:38	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 12:38	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 12:38	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 12:38	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 12:38	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 12:38	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 12:38	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 12:38	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 12:38	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 12:38	107-06-2	
1,1-Dichloroethene	**2.0**	ug/L	1.0	0.22	1		11/01/19 12:38	75-35-4	
cis-1,2-Dichloroethene	**16.9**	ug/L	1.0	0.17	1		11/01/19 12:38	156-59-2	
trans-1,2-Dichloroethene	**0.30J**	ug/L	1.0	0.17	1		11/01/19 12:38	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 12:38	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 12:38	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 12:38	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 12:38	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 12:38	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 12:38	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 12:38	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 12:38	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 12:38	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 12:38	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 12:38	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 12:38	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 12:38	79-00-5	
Trichloroethene	**649**	ug/L	20.0	3.4	20		11/05/19 15:53	79-01-6	
Vinyl chloride	**0.32J**	ug/L	1.0	0.11	1		11/01/19 12:38	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 12:38	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		11/01/19 12:38	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/01/19 12:38	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		11/01/19 12:38	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 12:38		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-57R-201910 **Lab ID: 60319115002** Collected: 10/23/19 13:32 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 12:23	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 12:23	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 12:23	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 12:23	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 12:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 12:23	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 12:23	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 12:23	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 12:23	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 12:23	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 12:23	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 12:23	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 12:23	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 12:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 12:23	107-06-2	
1,1-Dichloroethene	**1.6**	ug/L	1.0	0.22	1		11/01/19 12:23	75-35-4	
cis-1,2-Dichloroethene	**12.4**	ug/L	1.0	0.17	1		11/01/19 12:23	156-59-2	
trans-1,2-Dichloroethene	**0.24J**	ug/L	1.0	0.17	1		11/01/19 12:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 12:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 12:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 12:23	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 12:23	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 12:23	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 12:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 12:23	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 12:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 12:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 12:23	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 12:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 12:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 12:23	79-00-5	
Trichloroethene	**317**	ug/L	10.0	1.7	10		11/05/19 16:08	79-01-6	
Vinyl chloride	**0.39J**	ug/L	1.0	0.11	1		11/01/19 12:23	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 12:23	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/01/19 12:23	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		11/01/19 12:23	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 12:23	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 12:23		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-19-201910 **Lab ID: 60319115003** Collected: 10/23/19 16:06 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 10:43	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 10:43	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 10:43	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 10:43	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 10:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 10:43	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 10:43	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 10:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 10:43	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 10:43	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 10:43	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 10:43	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 10:43	124-48-1	
1,1-Dichloroethane	**0.25J**	ug/L	1.0	0.097	1		11/01/19 10:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 10:43	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 10:43	75-35-4	
cis-1,2-Dichloroethene	**1.6**	ug/L	1.0	0.17	1		11/01/19 10:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 10:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 10:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 10:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 10:43	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 10:43	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 10:43	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 10:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 10:43	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 10:43	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 10:43	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 10:43	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 10:43	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 10:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 10:43	79-00-5	
Trichloroethene	**13.6**	ug/L	1.0	0.17	1		11/01/19 10:43	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 10:43	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 10:43	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/01/19 10:43	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		11/01/19 10:43	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 10:43	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 10:43		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: DUP-06-201910 **Lab ID: 60319115004** Collected: 10/23/19 16:06 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 10:57	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 10:57	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 10:57	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 10:57	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 10:57	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 10:57	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 10:57	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 10:57	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 10:57	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 10:57	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 10:57	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 10:57	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 10:57	124-48-1	
1,1-Dichloroethane	**0.21J**	ug/L	1.0	0.097	1		11/01/19 10:57	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 10:57	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 10:57	75-35-4	
cis-1,2-Dichloroethene	**1.5**	ug/L	1.0	0.17	1		11/01/19 10:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 10:57	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 10:57	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 10:57	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 10:57	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 10:57	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 10:57	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 10:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 10:57	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 10:57	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 10:57	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 10:57	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 10:57	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 10:57	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 10:57	79-00-5	
Trichloroethene	**12.2**	ug/L	1.0	0.17	1		11/01/19 10:57	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 10:57	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 10:57	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		11/01/19 10:57	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/01/19 10:57	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 10:57	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 10:57		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-97-201910 **Lab ID: 60319115005** Collected: 10/23/19 09:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 11:12	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 11:12	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 11:12	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 11:12	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 11:12	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 11:12	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 11:12	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 11:12	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 11:12	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 11:12	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 11:12	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 11:12	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 11:12	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 11:12	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 11:12	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:12	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:12	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:12	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 11:12	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 11:12	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 11:12	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 11:12	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 11:12	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 11:12	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 11:12	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 11:12	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 11:12	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:12	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 11:12	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 11:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 11:12	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:12	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 11:12	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 11:12	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		11/01/19 11:12	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/01/19 11:12	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 11:12	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 11:12		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-96-201910 **Lab ID: 60319115006** Collected: 10/23/19 10:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 11:26	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 11:26	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 11:26	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 11:26	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 11:26	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 11:26	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 11:26	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 11:26	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 11:26	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 11:26	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 11:26	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 11:26	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 11:26	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 11:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 11:26	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 11:26	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 11:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 11:26	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 11:26	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 11:26	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 11:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 11:26	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 11:26	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 11:26	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:26	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 11:26	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 11:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 11:26	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:26	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 11:26	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 11:26	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		11/01/19 11:26	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		11/01/19 11:26	17060-07-0	
Toluene-d8 (S)	103	%	80-120		1		11/01/19 11:26	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 11:26		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-82-201910 **Lab ID: 60319115007** Collected: 10/23/19 12:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 11:54	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 11:54	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 11:54	75-27-4	
Bromoform	**0.79J**	ug/L	1.0	0.21	1		11/01/19 11:54	75-25-2	
Bromomethane	**0.40J**	ug/L	5.0	0.32	1		11/01/19 11:54	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 11:54	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 11:54	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 11:54	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 11:54	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 11:54	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 11:54	67-66-3	
Chloromethane	**0.39J**	ug/L	1.0	0.16	1		11/01/19 11:54	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 11:54	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 11:54	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 11:54	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:54	75-35-4	
cis-1,2-Dichloroethene	**1.1**	ug/L	1.0	0.17	1		11/01/19 11:54	156-59-2	
trans-1,2-Dichloroethene	**0.17J**	ug/L	1.0	0.17	1		11/01/19 11:54	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 11:54	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 11:54	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 11:54	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 11:54	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 11:54	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 11:54	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 11:54	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 11:54	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 11:54	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:54	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 11:54	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 11:54	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 11:54	79-00-5	
Trichloroethene	**55.6**	ug/L	1.0	0.17	1		11/01/19 11:54	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 11:54	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 11:54	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/01/19 11:54	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/01/19 11:54	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 11:54	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 11:54		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: DUP-02-201910 **Lab ID: 60319115008** Collected: 10/23/19 12:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 12:09	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 12:09	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 12:09	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 12:09	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 12:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 12:09	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 12:09	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 12:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 12:09	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 12:09	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 12:09	67-66-3	
Chloromethane	**0.50J**	ug/L	1.0	0.16	1		11/01/19 12:09	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 12:09	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 12:09	75-34-3	
1,2-Dichloroethane	**0.14J**	ug/L	1.0	0.14	1		11/01/19 12:09	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 12:09	75-35-4	
cis-1,2-Dichloroethene	**0.99J**	ug/L	1.0	0.17	1		11/01/19 12:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 12:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 12:09	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 12:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 12:09	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 12:09	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 12:09	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 12:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 12:09	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 12:09	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 12:09	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 12:09	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 12:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 12:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 12:09	79-00-5	
Trichloroethene	**55.9**	ug/L	1.0	0.17	1		11/01/19 12:09	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 12:09	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 12:09	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/01/19 12:09	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/01/19 12:09	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		11/01/19 12:09	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 12:09		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: IW-78-201910 **Lab ID: 60319115009** Collected: 10/23/19 14:05 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**5.3J**	ug/L	10.0	3.3	1		11/01/19 11:40	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 11:40	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 11:40	75-27-4	
Bromoform	**95.6**	ug/L	1.0	0.21	1		11/01/19 11:40	75-25-2	
Bromomethane	**0.82J**	ug/L	5.0	0.32	1		11/01/19 11:40	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 11:40	78-93-3	
Carbon disulfide	**0.21J**	ug/L	5.0	0.16	1		11/01/19 11:40	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 11:40	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 11:40	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 11:40	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 11:40	67-66-3	
Chloromethane	**1.1**	ug/L	1.0	0.16	1		11/01/19 11:40	74-87-3	
Dibromochloromethane	**2.8**	ug/L	1.0	0.15	1		11/01/19 11:40	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 11:40	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 11:40	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:40	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:40	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 11:40	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 11:40	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 11:40	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 11:40	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 11:40	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 11:40	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 11:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 11:40	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 11:40	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 11:40	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 11:40	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 11:40	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 11:40	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 11:40	79-00-5	
Trichloroethene	**2.4**	ug/L	1.0	0.17	1		11/01/19 11:40	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 11:40	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 11:40	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		11/01/19 11:40	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		11/01/19 11:40	17060-07-0	
Toluene-d8 (S)	96	%	80-120		1		11/01/19 11:40	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 11:40		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: ITMW-1R-201910 **Lab ID: 60319115010** Collected: 10/23/19 16:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 19:49	67-64-1	
Benzene	**0.18J**	ug/L	1.0	0.079	1		10/28/19 19:49	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 19:49	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 19:49	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 19:49	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 19:49	78-93-3	
Carbon disulfide	**1.2J**	ug/L	5.0	0.16	1		10/28/19 19:49	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 19:49	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 19:49	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 19:49	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 19:49	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 19:49	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 19:49	124-48-1	
1,1-Dichloroethane	**2.7**	ug/L	1.0	0.097	1		10/28/19 19:49	75-34-3	
1,2-Dichloroethane	**0.17J**	ug/L	1.0	0.14	1		10/28/19 19:49	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 19:49	75-35-4	
cis-1,2-Dichloroethene	**8.9**	ug/L	1.0	0.17	1		10/28/19 19:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 19:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 19:49	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 19:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 19:49	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 19:49	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 19:49	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 19:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 19:49	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 19:49	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 19:49	79-34-5	
Tetrachloroethene	**0.29J**	ug/L	1.0	0.22	1		10/28/19 19:49	127-18-4	B
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 19:49	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 19:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 19:49	79-00-5	
Trichloroethene	**11.4**	ug/L	1.0	0.17	1		10/28/19 19:49	79-01-6	
Vinyl chloride	**0.14J**	ug/L	1.0	0.11	1		10/28/19 19:49	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 19:49	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	80-120		1		10/28/19 19:49	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/28/19 19:49	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/28/19 19:49	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 19:49		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-175-201910 **Lab ID: 60319115011** Collected: 10/23/19 11:45 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 20:03	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 20:03	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 20:03	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 20:03	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 20:03	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 20:03	78-93-3	
Carbon disulfide	**0.40J**	ug/L	5.0	0.16	1		10/28/19 20:03	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 20:03	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 20:03	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 20:03	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 20:03	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 20:03	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 20:03	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 20:03	75-34-3	
1,2-Dichloroethane	**0.19J**	ug/L	1.0	0.14	1		10/28/19 20:03	107-06-2	B
1,1-Dichloroethene	**0.59J**	ug/L	1.0	0.22	1		10/28/19 20:03	75-35-4	
cis-1,2-Dichloroethene	**2.2**	ug/L	1.0	0.17	1		10/28/19 20:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 20:03	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 20:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 20:03	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 20:03	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 20:03	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 20:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 20:03	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 20:03	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 20:03	79-34-5	
Tetrachloroethene	**0.24J**	ug/L	1.0	0.22	1		10/28/19 20:03	127-18-4	B
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 20:03	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 20:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 20:03	79-00-5	
Trichloroethene	**138**	ug/L	1.0	0.17	1		10/28/19 20:03	79-01-6	
Vinyl chloride	**0.16J**	ug/L	1.0	0.11	1		10/28/19 20:03	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 20:03	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	80-120		1		10/28/19 20:03	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/28/19 20:03	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/28/19 20:03	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 20:03		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-30-201910 **Lab ID: 60319115012** Collected: 10/23/19 14:45 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**419**	ug/L	10.0	3.3	1		10/28/19 20:17	67-64-1	
Benzene	**0.31J**	ug/L	1.0	0.079	1		10/28/19 20:17	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 20:17	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 20:17	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 20:17	74-83-9	
2-Butanone (MEK)	**2600**	ug/L	200	14.0	20		10/31/19 14:56	78-93-3	
Carbon disulfide	**4.1J**	ug/L	5.0	0.16	1		10/28/19 20:17	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 20:17	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 20:17	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 20:17	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 20:17	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 20:17	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 20:17	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 20:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/28/19 20:17	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 20:17	75-35-4	
cis-1,2-Dichloroethene	**2.3**	ug/L	1.0	0.17	1		10/28/19 20:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 20:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 20:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 20:17	10061-02-6	
Ethylbenzene	**3.2**	ug/L	1.0	0.12	1		10/28/19 20:17	100-41-4	
2-Hexanone	**6.0J**	ug/L	10.0	1.0	1		10/28/19 20:17	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 20:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.3J**	ug/L	10.0	0.56	1		10/28/19 20:17	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 20:17	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 20:17	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 20:17	127-18-4	
Toluene	**1.0**	ug/L	1.0	0.14	1		10/28/19 20:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 20:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 20:17	79-00-5	
Trichloroethene	**2.5**	ug/L	1.0	0.17	1		10/28/19 20:17	79-01-6	
Vinyl chloride	**0.12J**	ug/L	1.0	0.11	1		10/28/19 20:17	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 20:17	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/28/19 20:17	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/28/19 20:17	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		10/28/19 20:17	2037-26-5	
Preservation pH	**4.0**		0.10	0.10	1		10/28/19 20:17		pH

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-182-201910 **Lab ID: 60319115013** Collected: 10/23/19 16:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 22:53	67-64-1	
Benzene	**0.16J**	ug/L	1.0	0.079	1		10/28/19 22:53	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 22:53	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 22:53	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 22:53	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 22:53	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 22:53	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 22:53	56-23-5	
Chlorobenzene	**6.7**	ug/L	1.0	0.13	1		10/28/19 22:53	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 22:53	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 22:53	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 22:53	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 22:53	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 22:53	75-34-3	
1,2-Dichloroethane	**0.18J**	ug/L	1.0	0.14	1		10/28/19 22:53	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 22:53	75-35-4	
cis-1,2-Dichloroethene	**1.8**	ug/L	1.0	0.17	1		10/28/19 22:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:53	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 22:53	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 22:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 22:53	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 22:53	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 22:53	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 22:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 22:53	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 22:53	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 22:53	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 22:53	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 22:53	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 22:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 22:53	79-00-5	
Trichloroethene	**26.3**	ug/L	1.0	0.17	1		10/28/19 22:53	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 22:53	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 22:53	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	80-120		1		10/28/19 22:53	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		10/28/19 22:53	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		10/28/19 22:53	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 22:53		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-29-201910 **Lab ID: 60319115014** Collected: 10/23/19 09:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 09:29	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 20:31	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 20:31	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 20:31	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 20:31	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 09:29	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 20:31	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 20:31	56-23-5	
Chlorobenzene	**4.6**	ug/L	1.0	0.13	1		10/28/19 20:31	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 20:31	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 20:31	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 20:31	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 20:31	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 20:31	75-34-3	
1,2-Dichloroethane	**0.16J**	ug/L	1.0	0.14	1		10/28/19 20:31	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 20:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 20:31	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 20:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 20:31	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 20:31	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 20:31	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 20:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 20:31	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 20:31	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 20:31	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 20:31	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 20:31	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 20:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 20:31	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:31	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 20:31	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 20:31	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/28/19 20:31	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	77-122		1		10/28/19 20:31	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/28/19 20:31	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 20:31		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-27-201910 **Lab ID: 60319115015** Collected: 10/23/19 10:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 20:46	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 20:46	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 20:46	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 20:46	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 20:46	74-83-9	
2-Butanone (MEK)	**1.7J**	ug/L	10.0	0.70	1		10/28/19 20:46	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 20:46	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 20:46	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 20:46	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 20:46	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 20:46	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 20:46	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 20:46	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 20:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/28/19 20:46	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 20:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 20:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 20:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 20:46	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 20:46	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 20:46	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 20:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 20:46	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 20:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 20:46	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 20:46	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 20:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 20:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 20:46	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 20:46	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 20:46	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 20:46	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	105	%	80-120		1		10/28/19 20:46	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	77-122		1		10/28/19 20:46	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/28/19 20:46	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 20:46		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: ITMW-20-201910 **Lab ID: 60319115016** Collected: 10/23/19 11:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 21:00	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 21:00	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 21:00	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 21:00	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 21:00	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 21:00	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 21:00	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 21:00	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 21:00	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 21:00	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 21:00	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 21:00	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 21:00	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 21:00	75-34-3	
1,2-Dichloroethane	**0.16J**	ug/L	1.0	0.14	1		10/28/19 21:00	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:00	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:00	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:00	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 21:00	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 21:00	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 21:00	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 21:00	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 21:00	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 21:00	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 21:00	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 21:00	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 21:00	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:00	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 21:00	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 21:00	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 21:00	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:00	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 21:00	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 21:00	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	105	%	80-120		1		10/28/19 21:00	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/28/19 21:00	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/28/19 21:00	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 21:00		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: DUP-05-201910 **Lab ID: 60319115017** Collected: 10/23/19 11:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 23:07	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 23:07	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 23:07	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 23:07	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 23:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 23:07	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 23:07	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 23:07	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 23:07	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 23:07	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 23:07	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 23:07	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 23:07	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 23:07	75-34-3	
1,2-Dichloroethane	**0.14J**	ug/L	1.0	0.14	1		10/28/19 23:07	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 23:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 23:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 23:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 23:07	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 23:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 23:07	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 23:07	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 23:07	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 23:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 23:07	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 23:07	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 23:07	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 23:07	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 23:07	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 23:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 23:07	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 23:07	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 23:07	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 23:07	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	80-120		1		10/28/19 23:07	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	77-122		1		10/28/19 23:07	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/28/19 23:07	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 23:07		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-26-201910 **Lab ID: 60319115018** Collected: 10/23/19 12:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 21:14	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 21:14	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 21:14	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 21:14	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 21:14	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 21:14	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 21:14	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 21:14	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 21:14	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 21:14	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 21:14	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 21:14	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 21:14	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 21:14	75-34-3	
1,2-Dichloroethane	**0.20J**	ug/L	1.0	0.14	1		10/28/19 21:14	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:14	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 21:14	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 21:14	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 21:14	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 21:14	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 21:14	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 21:14	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 21:14	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 21:14	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 21:14	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:14	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 21:14	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 21:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 21:14	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:14	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 21:14	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 21:14	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	80-120		1		10/28/19 21:14	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	77-122		1		10/28/19 21:14	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		10/28/19 21:14	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 21:14		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-84-201910 **Lab ID: 60319115019** Collected: 10/23/19 14:55 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**5.5J**	ug/L	10.0	3.3	1		10/28/19 21:28	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 21:28	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 21:28	75-27-4	
Bromoform	**3.7**	ug/L	1.0	0.21	1		10/28/19 21:28	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 21:28	74-83-9	
2-Butanone (MEK)	**0.97J**	ug/L	10.0	0.70	1		10/28/19 21:28	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 21:28	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 21:28	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 21:28	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 21:28	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 21:28	67-66-3	
Chloromethane	**0.94J**	ug/L	1.0	0.16	1		10/28/19 21:28	74-87-3	
Dibromochloromethane	**0.24J**	ug/L	1.0	0.15	1		10/28/19 21:28	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 21:28	75-34-3	
1,2-Dichloroethane	**0.17J**	ug/L	1.0	0.14	1		10/28/19 21:28	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 21:28	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 21:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 21:28	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 21:28	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 21:28	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 21:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 21:28	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 21:28	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 21:28	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:28	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 21:28	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 21:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 21:28	79-00-5	
Trichloroethene	**2.4**	ug/L	1.0	0.17	1		10/28/19 21:28	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 21:28	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 21:28	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	80-120		1		10/28/19 21:28	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	77-122		1		10/28/19 21:28	17060-07-0	
Toluene-d8 (S)	96	%	80-120		1		10/28/19 21:28	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 21:28		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-22-201910 **Lab ID: 60319115020** Collected: 10/23/19 16:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 21:42	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 21:42	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 21:42	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 21:42	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 21:42	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 21:42	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 21:42	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 21:42	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 21:42	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 21:42	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 21:42	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 21:42	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 21:42	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 21:42	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/28/19 21:42	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:42	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:42	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:42	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 21:42	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 21:42	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 21:42	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 21:42	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 21:42	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 21:42	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 21:42	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 21:42	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 21:42	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:42	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 21:42	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 21:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 21:42	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:42	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 21:42	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 21:42	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/28/19 21:42	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/28/19 21:42	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/28/19 21:42	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 21:42		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-28-201910 **Lab ID: 60319115021** Collected: 10/23/19 17:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 21:57	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 21:57	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 21:57	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 21:57	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 21:57	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 21:57	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 21:57	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 21:57	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 21:57	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 21:57	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 21:57	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 21:57	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 21:57	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 21:57	75-34-3	
1,2-Dichloroethane	**0.15J**	ug/L	1.0	0.14	1		10/28/19 21:57	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:57	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:57	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 21:57	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 21:57	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 21:57	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 21:57	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 21:57	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 21:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 21:57	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 21:57	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 21:57	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 21:57	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 21:57	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 21:57	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 21:57	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 21:57	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 21:57	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 21:57	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/28/19 21:57	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	77-122		1		10/28/19 21:57	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		10/28/19 21:57	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 21:57		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: DUP-03-201910 **Lab ID: 60319115022** Collected: 10/23/19 15:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 23:21	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 23:21	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 23:21	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 23:21	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 23:21	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 23:21	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 23:21	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 23:21	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 23:21	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 23:21	75-00-3	
Chloroform	**0.12J**	ug/L	1.0	0.10	1		10/28/19 23:21	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 23:21	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 23:21	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 23:21	75-34-3	
1,2-Dichloroethane	**0.18J**	ug/L	1.0	0.14	1		10/28/19 23:21	107-06-2	B
1,1-Dichloroethene	**1.9**	ug/L	1.0	0.22	1		10/28/19 23:21	75-35-4	
cis-1,2-Dichloroethene	**16.5**	ug/L	1.0	0.17	1		10/28/19 23:21	156-59-2	
trans-1,2-Dichloroethene	**0.49J**	ug/L	1.0	0.17	1		10/28/19 23:21	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 23:21	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 23:21	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 23:21	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 23:21	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 23:21	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 23:21	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 23:21	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 23:21	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 23:21	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 23:21	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 23:21	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 23:21	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 23:21	79-00-5	
Trichloroethene	**560**	ug/L	10.0	1.7	10		10/31/19 15:11	79-01-6	
Vinyl chloride	**0.56J**	ug/L	1.0	0.11	1		10/28/19 23:21	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 23:21	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	80-120		1		10/28/19 23:21	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	77-122		1		10/28/19 23:21	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/28/19 23:21	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 23:21		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-60R-201910 **Lab ID: 60319115023** Collected: 10/23/19 09:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 22:11	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 22:11	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 22:11	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 22:11	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 22:11	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 22:11	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 22:11	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 22:11	56-23-5	
Chlorobenzene	**0.17J**	ug/L	1.0	0.13	1		10/28/19 22:11	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 22:11	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 22:11	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 22:11	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 22:11	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 22:11	75-34-3	
1,2-Dichloroethane	**0.14J**	ug/L	1.0	0.14	1		10/28/19 22:11	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 22:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:11	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 22:11	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 22:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 22:11	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 22:11	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 22:11	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 22:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 22:11	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 22:11	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 22:11	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 22:11	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 22:11	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 22:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 22:11	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:11	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 22:11	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 22:11	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	80-120		1		10/28/19 22:11	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		10/28/19 22:11	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		10/28/19 22:11	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 22:11		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-196-201910 **Lab ID: 60319115024** Collected: 10/23/19 10:55 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 22:25	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 22:25	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 22:25	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 22:25	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 22:25	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 22:25	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 22:25	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 22:25	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 22:25	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 22:25	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 22:25	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 22:25	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 22:25	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 22:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/28/19 22:25	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/28/19 22:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:25	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 22:25	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 22:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 22:25	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 22:25	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 22:25	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 22:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 22:25	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 22:25	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 22:25	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 22:25	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 22:25	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 22:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 22:25	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:25	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 22:25	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 22:25	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/28/19 22:25	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/28/19 22:25	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/28/19 22:25	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 22:25		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-55R-201910 **Lab ID: 60319115025** Collected: 10/23/19 12:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 22:39	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 22:39	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 22:39	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 22:39	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 22:39	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 22:39	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 22:39	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 22:39	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 22:39	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 22:39	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 22:39	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 22:39	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 22:39	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 22:39	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/28/19 22:39	107-06-2	
1,1-Dichloroethene	**0.39J**	ug/L	1.0	0.22	1		10/28/19 22:39	75-35-4	
cis-1,2-Dichloroethene	**0.98J**	ug/L	1.0	0.17	1		10/28/19 22:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 22:39	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 22:39	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 22:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 22:39	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 22:39	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 22:39	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 22:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 22:39	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 22:39	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 22:39	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 22:39	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 22:39	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 22:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 22:39	79-00-5	
Trichloroethene	**26.4**	ug/L	1.0	0.17	1		10/28/19 22:39	79-01-6	
Vinyl chloride	**0.16J**	ug/L	1.0	0.11	1		10/28/19 22:39	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 22:39	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	80-120		1		10/28/19 22:39	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	77-122		1		10/28/19 22:39	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		10/28/19 22:39	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 22:39		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: DUP-04-2019110 **Lab ID: 60319115026** Collected: 10/23/19 12:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 23:36	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 23:36	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 23:36	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 23:36	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 23:36	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 23:36	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 23:36	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 23:36	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 23:36	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 23:36	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 23:36	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 23:36	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 23:36	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 23:36	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/28/19 23:36	107-06-2	B
1,1-Dichloroethene	**0.34J**	ug/L	1.0	0.22	1		10/28/19 23:36	75-35-4	
cis-1,2-Dichloroethene	**1.2**	ug/L	1.0	0.17	1		10/28/19 23:36	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 23:36	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 23:36	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 23:36	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 23:36	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 23:36	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 23:36	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 23:36	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 23:36	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 23:36	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 23:36	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 23:36	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 23:36	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 23:36	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 23:36	79-00-5	
Trichloroethene	**27.7**	ug/L	1.0	0.17	1		10/28/19 23:36	79-01-6	
Vinyl chloride	**0.18J**	ug/L	1.0	0.11	1		10/28/19 23:36	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 23:36	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/28/19 23:36	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		10/28/19 23:36	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/28/19 23:36	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 23:36		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-24-2019110 **Lab ID: 60319115027** Collected: 10/23/19 14:25 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 00:18	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 00:18	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 00:18	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 00:18	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 00:18	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 00:18	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 00:18	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 00:18	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 00:18	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 00:18	75-00-3	
Chloroform	**0.13J**	ug/L	1.0	0.10	1		10/29/19 00:18	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 00:18	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 00:18	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 00:18	75-34-3	
1,2-Dichloroethane	**0.17J**	ug/L	1.0	0.14	1		10/29/19 00:18	107-06-2	B
1,1-Dichloroethene	**1.5**	ug/L	1.0	0.22	1		10/29/19 00:18	75-35-4	
cis-1,2-Dichloroethene	**11.8**	ug/L	1.0	0.17	1		10/29/19 00:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 00:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 00:18	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 00:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 00:18	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 00:18	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 00:18	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 00:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 00:18	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 00:18	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 00:18	79-34-5	
Tetrachloroethene	**0.23J**	ug/L	1.0	0.22	1		10/29/19 00:18	127-18-4	B
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 00:18	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 00:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 00:18	79-00-5	
Trichloroethene	**575**	ug/L	10.0	1.7	10		10/31/19 15:25	79-01-6	
Vinyl chloride	**0.20J**	ug/L	1.0	0.11	1		10/29/19 00:18	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 00:18	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/29/19 00:18	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		10/29/19 00:18	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 00:18	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 00:18		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-23-2019110 **Lab ID: 60319115028** Collected: 10/23/19 16:05 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/28/19 23:50	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/28/19 23:50	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/28/19 23:50	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/28/19 23:50	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/28/19 23:50	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/28/19 23:50	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/28/19 23:50	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/28/19 23:50	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/28/19 23:50	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/28/19 23:50	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/28/19 23:50	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/28/19 23:50	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/28/19 23:50	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/28/19 23:50	75-34-3	
1,2-Dichloroethane	**0.18J**	ug/L	1.0	0.14	1		10/28/19 23:50	107-06-2	B
1,1-Dichloroethene	**0.36J**	ug/L	1.0	0.22	1		10/28/19 23:50	75-35-4	
cis-1,2-Dichloroethene	**2.5**	ug/L	1.0	0.17	1		10/28/19 23:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/28/19 23:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/28/19 23:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/28/19 23:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/28/19 23:50	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/28/19 23:50	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/28/19 23:50	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/28/19 23:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/28/19 23:50	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/28/19 23:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/28/19 23:50	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/28/19 23:50	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/28/19 23:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/28/19 23:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/28/19 23:50	79-00-5	
Trichloroethene	**189**	ug/L	1.0	0.17	1		10/28/19 23:50	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/28/19 23:50	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/28/19 23:50	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/28/19 23:50	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	77-122		1		10/28/19 23:50	17060-07-0	
Toluene-d8 (S)	96	%	80-120		1		10/28/19 23:50	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/28/19 23:50		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-24-2019110 **Lab ID: 60319115029** Collected: 10/23/19 17:20 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 00:04	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 00:04	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 00:04	75-27-4	
Bromoform	**3.1**	ug/L	1.0	0.21	1		10/29/19 00:04	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 00:04	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 00:04	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 00:04	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 00:04	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 00:04	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 00:04	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 00:04	67-66-3	
Chloromethane	**0.48J**	ug/L	1.0	0.16	1		10/29/19 00:04	74-87-3	
Dibromochloromethane	**0.25J**	ug/L	1.0	0.15	1		10/29/19 00:04	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 00:04	75-34-3	
1,2-Dichloroethane	**0.18J**	ug/L	1.0	0.14	1		10/29/19 00:04	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 00:04	75-35-4	
cis-1,2-Dichloroethene	**0.24J**	ug/L	1.0	0.17	1		10/29/19 00:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 00:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 00:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 00:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 00:04	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 00:04	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 00:04	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 00:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 00:04	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 00:04	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 00:04	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 00:04	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 00:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 00:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 00:04	79-00-5	
Trichloroethene	**19.0**	ug/L	1.0	0.17	1		10/29/19 00:04	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 00:04	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 00:04	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	80-120		1		10/29/19 00:04	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/29/19 00:04	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		10/29/19 00:04	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 00:04		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-178-201910 **Lab ID: 60319115030** Collected: 10/23/19 16:45 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 14:39	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 14:39	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 14:39	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 14:39	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 14:39	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 14:39	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 14:39	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 14:39	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 14:39	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 14:39	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 14:39	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 14:39	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 14:39	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 14:39	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 14:39	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:39	75-35-4	
cis-1,2-Dichloroethene	**1.2**	ug/L	1.0	0.17	1		10/29/19 14:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:39	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 14:39	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 14:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 14:39	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 14:39	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 14:39	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 14:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 14:39	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 14:39	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 14:39	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:39	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 14:39	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 14:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 14:39	79-00-5	
Trichloroethene	**4.1**	ug/L	1.0	0.17	1		10/29/19 14:39	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 14:39	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 14:39	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/29/19 14:39	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	77-122		1		10/29/19 14:39	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/29/19 14:39	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 14:39		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: EB-02-201910 **Lab ID: 60319115031** Collected: 10/23/19 17:05 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 14:11	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 14:11	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 14:11	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 14:11	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 14:11	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 14:11	78-93-3	
Carbon disulfide	**0.27J**	ug/L	5.0	0.16	1		10/29/19 14:11	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 14:11	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 14:11	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 14:11	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 14:11	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 14:11	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 14:11	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 14:11	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 14:11	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:11	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 14:11	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 14:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 14:11	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 14:11	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 14:11	591-78-6	
Methylene Chloride	**0.53J**	ug/L	1.0	0.27	1		10/29/19 14:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 14:11	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 14:11	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 14:11	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:11	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 14:11	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 14:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 14:11	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:11	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 14:11	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 14:11	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/29/19 14:11	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/29/19 14:11	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/29/19 14:11	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 14:11		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: EB-03-201910 **Lab ID: 60319115032** Collected: 10/23/19 17:05 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 14:25	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 14:25	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 14:25	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 14:25	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 14:25	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 14:25	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 14:25	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 14:25	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 14:25	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 14:25	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 14:25	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 14:25	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 14:25	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 14:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 14:25	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:25	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 14:25	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 14:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 14:25	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 14:25	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 14:25	591-78-6	
Methylene Chloride	**0.52J**	ug/L	1.0	0.27	1		10/29/19 14:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 14:25	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 14:25	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 14:25	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:25	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 14:25	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 14:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 14:25	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:25	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 14:25	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 14:25	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/29/19 14:25	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/29/19 14:25	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/29/19 14:25	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 14:25		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TB-03-201910 **Lab ID: 60319115033** Collected: 10/23/19 07:30 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 12:55	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 12:55	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 12:55	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 12:55	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 12:55	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 12:55	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 12:55	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 12:55	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 12:55	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 12:55	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 12:55	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 12:55	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 12:55	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 12:55	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 12:55	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 12:55	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 12:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 12:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 12:55	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 12:55	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 12:55	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 12:55	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 12:55	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 12:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 12:55	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 12:55	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 12:55	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 12:55	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 12:55	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 12:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 12:55	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 12:55	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 12:55	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 12:55	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/29/19 12:55	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		10/29/19 12:55	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 12:55	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 12:55		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-98-201910 **Lab ID: 60319115034** Collected: 10/23/19 09:50 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 14:53	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 14:53	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 14:53	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 14:53	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 14:53	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 14:53	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 14:53	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 14:53	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 14:53	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 14:53	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 14:53	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 14:53	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 14:53	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 14:53	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 14:53	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 14:53	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 14:53	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 14:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 14:53	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 14:53	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 14:53	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 14:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 14:53	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 14:53	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 14:53	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 14:53	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 14:53	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 14:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 14:53	79-00-5	
Trichloroethene	**0.38J**	ug/L	1.0	0.17	1		10/29/19 14:53	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 14:53	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 14:53	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		10/29/19 14:53	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		10/29/19 14:53	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/29/19 14:53	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 14:53		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TB-04-201910 **Lab ID: 60319115035** Collected: 10/23/19 17:50 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 13:09	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 13:09	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 13:09	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 13:09	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 13:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 13:09	78-93-3	
Carbon disulfide	**0.17J**	ug/L	5.0	0.16	1		10/29/19 13:09	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 13:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 13:09	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 13:09	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 13:09	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 13:09	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 13:09	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 13:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 13:09	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 13:09	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 13:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 13:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 13:09	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 13:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 13:09	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 13:09	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 13:09	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 13:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 13:09	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 13:09	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 13:09	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 13:09	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 13:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 13:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 13:09	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 13:09	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 13:09	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 13:09	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/29/19 13:09	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		10/29/19 13:09	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 13:09	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 13:09		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TB-05-201910 **Lab ID: 60319115036** Collected: 10/23/19 17:55 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 13:23	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 13:23	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 13:23	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 13:23	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 13:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 13:23	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 13:23	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 13:23	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 13:23	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 13:23	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 13:23	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 13:23	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 13:23	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 13:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 13:23	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 13:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 13:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 13:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 13:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 13:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 13:23	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 13:23	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 13:23	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 13:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 13:23	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 13:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 13:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 13:23	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 13:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 13:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 13:23	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 13:23	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 13:23	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 13:23	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/29/19 13:23	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/29/19 13:23	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 13:23	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 13:23		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: VP-10-201910 **Lab ID: 60319115037** Collected: 10/23/19 10:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**15.1**	ug/L	10.0	3.3	1		10/29/19 17:29	67-64-1	
Benzene	**0.50J**	ug/L	1.0	0.079	1		10/29/19 17:29	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 17:29	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 17:29	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 17:29	74-83-9	
2-Butanone (MEK)	**5.4J**	ug/L	10.0	0.70	1		10/29/19 17:29	78-93-3	
Carbon disulfide	**0.67J**	ug/L	5.0	0.16	1		10/29/19 17:29	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 17:29	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 17:29	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 17:29	75-00-3	
Chloroform	**2.9**	ug/L	1.0	0.10	1		10/29/19 17:29	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 17:29	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 17:29	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 17:29	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 17:29	107-06-2	
1,1-Dichloroethene	**1.4**	ug/L	1.0	0.22	1		10/29/19 17:29	75-35-4	
cis-1,2-Dichloroethene	**11.9**	ug/L	1.0	0.17	1		10/29/19 17:29	156-59-2	
trans-1,2-Dichloroethene	**0.30J**	ug/L	1.0	0.17	1		10/29/19 17:29	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 17:29	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 17:29	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 17:29	10061-02-6	
Ethylbenzene	**0.15J**	ug/L	1.0	0.12	1		10/29/19 17:29	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 17:29	591-78-6	
Methylene Chloride	**0.31J**	ug/L	1.0	0.27	1		10/29/19 17:29	75-09-2	
4-Methyl-2-pentanone (MIBK)	**0.83J**	ug/L	10.0	0.56	1		10/29/19 17:29	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 17:29	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 17:29	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 17:29	127-18-4	
Toluene	**1.1**	ug/L	1.0	0.14	1		10/29/19 17:29	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 17:29	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 17:29	79-00-5	
Trichloroethene	**3.3J**	ug/L	5.0	0.85	5		10/30/19 19:28	79-01-6	
Vinyl chloride	**0.52J**	ug/L	1.0	0.11	1		10/29/19 17:29	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 17:29	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/29/19 17:29	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/29/19 17:29	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 17:29	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 17:29		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: VP-12-201910 **Lab ID: 60319115038** Collected: 10/23/19 10:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 15:08	67-64-1	
Benzene	**0.21J**	ug/L	1.0	0.079	1		10/29/19 15:08	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 15:08	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 15:08	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 15:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 15:08	78-93-3	
Carbon disulfide	**0.34J**	ug/L	5.0	0.16	1		10/29/19 15:08	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 15:08	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 15:08	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 15:08	75-00-3	
Chloroform	**0.23J**	ug/L	1.0	0.10	1		10/29/19 15:08	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 15:08	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 15:08	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 15:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 15:08	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:08	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 15:08	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 15:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 15:08	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 15:08	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 15:08	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 15:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 15:08	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 15:08	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 15:08	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:08	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 15:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 15:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 15:08	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:08	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 15:08	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 15:08	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/29/19 15:08	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/29/19 15:08	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/29/19 15:08	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 15:08		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: VP-7-201910 **Lab ID: 60319115039** Collected: 10/23/19 10:50 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**143**	ug/L	10.0	3.3	1		10/29/19 15:50	67-64-1	
Benzene	**1.0**	ug/L	1.0	0.079	1		10/29/19 15:50	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 15:50	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 15:50	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 15:50	74-83-9	
2-Butanone (MEK)	**14.7**	ug/L	10.0	0.70	1		10/29/19 15:50	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 15:50	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 15:50	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 15:50	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 15:50	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 15:50	67-66-3	
Chloromethane	**0.40J**	ug/L	1.0	0.16	1		10/29/19 15:50	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 15:50	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 15:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 15:50	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 15:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 15:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 15:50	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 15:50	100-41-4	
2-Hexanone	**1.6J**	ug/L	10.0	1.0	1		10/29/19 15:50	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 15:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.8J**	ug/L	10.0	0.56	1		10/29/19 15:50	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 15:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 15:50	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:50	127-18-4	
Toluene	**0.28J**	ug/L	1.0	0.14	1		10/29/19 15:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 15:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 15:50	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:50	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 15:50	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 15:50	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/29/19 15:50	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/29/19 15:50	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 15:50	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 15:50		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: VP-8-201910 **Lab ID: 60319115040** Collected: 10/23/19 11:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**162**	ug/L	10.0	3.3	1		10/29/19 16:04	67-64-1	
Benzene	**0.90J**	ug/L	1.0	0.079	1		10/29/19 16:04	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 16:04	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 16:04	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 16:04	74-83-9	
2-Butanone (MEK)	**18.6**	ug/L	10.0	0.70	1		10/29/19 16:04	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 16:04	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 16:04	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 16:04	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 16:04	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 16:04	67-66-3	
Chloromethane	**0.66J**	ug/L	1.0	0.16	1		10/29/19 16:04	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 16:04	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 16:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 16:04	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:04	75-35-4	
cis-1,2-Dichloroethene	**0.23J**	ug/L	1.0	0.17	1		10/29/19 16:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 16:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 16:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 16:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 16:04	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 16:04	100-41-4	
2-Hexanone	**3.4J**	ug/L	10.0	1.0	1		10/29/19 16:04	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 16:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.5J**	ug/L	10.0	0.56	1		10/29/19 16:04	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 16:04	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 16:04	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:04	127-18-4	
Toluene	**0.50J**	ug/L	1.0	0.14	1		10/29/19 16:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 16:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 16:04	79-00-5	
Trichloroethene	**5.8**	ug/L	1.0	0.17	1		10/29/19 16:04	79-01-6	
Vinyl chloride	**0.26J**	ug/L	1.0	0.11	1		10/29/19 16:04	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 16:04	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		10/29/19 16:04	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/29/19 16:04	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 16:04	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 16:04		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: VP-14-201910 **Lab ID: 60319115041** Collected: 10/23/19 12:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 17:01	67-64-1	
Benzene	**0.25J**	ug/L	1.0	0.079	1		10/29/19 17:01	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 17:01	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 17:01	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 17:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 17:01	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 17:01	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 17:01	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 17:01	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 17:01	75-00-3	
Chloroform	**0.40J**	ug/L	1.0	0.10	1		10/29/19 17:01	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 17:01	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 17:01	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 17:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 17:01	107-06-2	
1,1-Dichloroethene	**1.1**	ug/L	1.0	0.22	1		10/29/19 17:01	75-35-4	
cis-1,2-Dichloroethene	**3.9**	ug/L	1.0	0.17	1		10/29/19 17:01	156-59-2	
trans-1,2-Dichloroethene	**0.36J**	ug/L	1.0	0.17	1		10/29/19 17:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 17:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 17:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 17:01	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 17:01	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 17:01	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 17:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 17:01	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 17:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 17:01	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 17:01	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 17:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 17:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 17:01	79-00-5	
Trichloroethene	**87.9**	ug/L	1.0	0.17	1		10/29/19 17:01	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 17:01	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 17:01	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		10/29/19 17:01	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/29/19 17:01	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/29/19 17:01	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 17:01		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-194-201910 **Lab ID: 60319115042** Collected: 10/23/19 10:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**6940**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:14	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**4.2J**	ug/L	10.0	3.3	1		10/29/19 16:18	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 16:18	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 16:18	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 16:18	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 16:18	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 16:18	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 16:18	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 16:18	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 16:18	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 16:18	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 16:18	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 16:18	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 16:18	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 16:18	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 16:18	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:18	75-35-4	
cis-1,2-Dichloroethene	**0.97J**	ug/L	1.0	0.17	1		10/29/19 16:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 16:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 16:18	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 16:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 16:18	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 16:18	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 16:18	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 16:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 16:18	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 16:18	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 16:18	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:18	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 16:18	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 16:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 16:18	79-00-5	
Trichloroethene	**10.8**	ug/L	1.0	0.17	1		10/29/19 16:18	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 16:18	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 16:18	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/29/19 16:18	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/29/19 16:18	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		10/29/19 16:18	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 16:18		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**155**	mg/L	20.0	4.4	20		11/02/19 14:36	16887-00-6	
Sulfate	**10.2**	mg/L	1.0	0.23	1		11/05/19 00:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-194-201910 **Lab ID: 60319115042** Collected: 10/23/19 10:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.053J**	mg/L	0.10	0.038	1		10/24/19 16:04		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:04	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:04	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.63J**	mg/L	1.0	0.29	1		10/29/19 15:36	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**0.58J**	mg/L	1.0	0.29	1		10/30/19 17:24		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-61R-201910 **Lab ID: 60319115043** Collected: 10/23/19 09:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**9690**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:22	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 16:32	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 16:32	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 16:32	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 16:32	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 16:32	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 16:32	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 16:32	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 16:32	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 16:32	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 16:32	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 16:32	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 16:32	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 16:32	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 16:32	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 16:32	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:32	75-35-4	
cis-1,2-Dichloroethene	**1.7**	ug/L	1.0	0.17	1		10/29/19 16:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 16:32	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 16:32	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 16:32	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 16:32	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 16:32	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 16:32	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 16:32	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 16:32	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 16:32	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 16:32	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:32	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 16:32	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 16:32	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 16:32	79-00-5	
Trichloroethene	**20.8**	ug/L	1.0	0.17	1		10/29/19 16:32	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 16:32	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 16:32	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/29/19 16:32	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/29/19 16:32	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/29/19 16:32	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 16:32		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**109**	mg/L	20.0	4.4	20		11/02/19 15:26	16887-00-6	
Sulfate	**12.1**	mg/L	1.0	0.23	1		11/05/19 01:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-61R-201910 **Lab ID: 60319115043** Collected: 10/23/19 09:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.069J**	mg/L	0.10	0.038	1		10/24/19 16:01		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:01	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:01	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.38J**	mg/L	1.0	0.29	1		10/29/19 16:30	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**0.57J**	mg/L	1.0	0.29	1		10/30/19 17:50		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-26-201910 **Lab ID: 60319115044** Collected: 10/23/19 17:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**34800**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:49	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**38.2**	ug/L	10.0	3.3	1		10/29/19 17:15	67-64-1	
Benzene	**0.12J**	ug/L	1.0	0.079	1		10/29/19 17:15	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 17:15	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 17:15	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 17:15	74-83-9	
2-Butanone (MEK)	**113**	ug/L	10.0	0.70	1		10/29/19 17:15	78-93-3	
Carbon disulfide	**1.2J**	ug/L	5.0	0.16	1		10/29/19 17:15	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 17:15	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 17:15	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 17:15	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 17:15	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 17:15	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 17:15	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 17:15	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 17:15	107-06-2	
1,1-Dichloroethene	**0.29J**	ug/L	1.0	0.22	1		10/29/19 17:15	75-35-4	
cis-1,2-Dichloroethene	**53.3**	ug/L	1.0	0.17	1		10/29/19 17:15	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 17:15	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 17:15	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 17:15	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 17:15	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 17:15	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 17:15	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 17:15	75-09-2	
4-Methyl-2-pentanone (MIBK)	**2.6J**	ug/L	10.0	0.56	1		10/29/19 17:15	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 17:15	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 17:15	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 17:15	127-18-4	
Toluene	**0.37J**	ug/L	1.0	0.14	1		10/29/19 17:15	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 17:15	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 17:15	79-00-5	
Trichloroethene	**42.9**	ug/L	1.0	0.17	1		10/29/19 17:15	79-01-6	
Vinyl chloride	**2.9**	ug/L	1.0	0.11	1		10/29/19 17:15	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 17:15	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/29/19 17:15	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/29/19 17:15	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		10/29/19 17:15	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 17:15		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**206**	mg/L	20.0	4.4	20		11/02/19 15:43	16887-00-6	
Sulfate	**33.9**	mg/L	2.0	0.46	2		11/05/19 02:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-26-201910 **Lab ID: 60319115044** Collected: 10/23/19 17:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**3.5**	mg/L	0.10	0.038	1		10/24/19 16:12		
Nitrogen, Nitrate	**3.4**	mg/L	0.10	0.067	1		10/24/19 16:12	14797-55-8	
Nitrogen, Nitrite	**0.14**	mg/L	0.10	0.067	1		10/24/19 16:12	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**212**	mg/L	25.0	7.2	25		10/31/19 16:44	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**203**	mg/L	25.0	7.2	25		10/31/19 23:12		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-46R-201910 **Lab ID: 60319115045** Collected: 10/23/19 15:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 17:43	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 17:43	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 17:43	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 17:43	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 17:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 17:43	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 17:43	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 17:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 17:43	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 17:43	75-00-3	
Chloroform	**0.13J**	ug/L	1.0	0.10	1		10/29/19 17:43	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 17:43	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 17:43	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 17:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 17:43	107-06-2	
1,1-Dichloroethene	**2.4**	ug/L	1.0	0.22	1		10/29/19 17:43	75-35-4	
cis-1,2-Dichloroethene	**22.1**	ug/L	1.0	0.17	1		10/29/19 17:43	156-59-2	
trans-1,2-Dichloroethene	**0.72J**	ug/L	1.0	0.17	1		10/29/19 17:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 17:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 17:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 17:43	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 17:43	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 17:43	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 17:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 17:43	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 17:43	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 17:43	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 17:43	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 17:43	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 17:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 17:43	79-00-5	
Trichloroethene	**555**	ug/L	10.0	1.7	10		10/30/19 19:42	79-01-6	
Vinyl chloride	**0.69J**	ug/L	1.0	0.11	1		10/29/19 17:43	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 17:43	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/29/19 17:43	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/29/19 17:43	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 17:43	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 17:43		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-184-201910 **Lab ID: 60319115046** Collected: 10/23/19 13:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 15:22	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 15:22	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 15:22	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 15:22	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 15:22	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 15:22	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 15:22	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 15:22	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 15:22	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 15:22	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 15:22	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 15:22	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 15:22	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 15:22	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 15:22	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:22	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:22	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 15:22	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 15:22	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 15:22	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 15:22	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 15:22	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 15:22	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 15:22	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 15:22	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 15:22	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:22	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 15:22	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 15:22	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 15:22	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:22	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 15:22	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 15:22	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/29/19 15:22	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/29/19 15:22	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/29/19 15:22	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 15:22		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-183R-201910 **Lab ID: 60319115047** Collected: 10/23/19 11:02 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 15:36	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 15:36	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 15:36	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 15:36	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 15:36	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 15:36	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 15:36	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 15:36	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 15:36	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 15:36	75-00-3	
Chloroform	**0.14J**	ug/L	1.0	0.10	1		10/29/19 15:36	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 15:36	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 15:36	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 15:36	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 15:36	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:36	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:36	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 15:36	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 15:36	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 15:36	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 15:36	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 15:36	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 15:36	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 15:36	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 15:36	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 15:36	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 15:36	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 15:36	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 15:36	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 15:36	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 15:36	79-00-5	
Trichloroethene	**1.2**	ug/L	1.0	0.17	1		10/29/19 15:36	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 15:36	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 15:36	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/29/19 15:36	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/29/19 15:36	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/29/19 15:36	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 15:36		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-99-201910 **Lab ID: 60319115048** Collected: 10/23/19 12:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 16:46	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 16:46	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 16:46	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 16:46	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 16:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 16:46	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 16:46	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 16:46	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 16:46	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 16:46	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 16:46	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 16:46	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 16:46	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 16:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 16:46	107-06-2	
1,1-Dichloroethene	**0.56J**	ug/L	1.0	0.22	1		10/29/19 16:46	75-35-4	
cis-1,2-Dichloroethene	**4.8**	ug/L	1.0	0.17	1		10/29/19 16:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 16:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 16:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 16:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 16:46	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 16:46	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 16:46	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 16:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 16:46	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 16:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 16:46	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:46	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 16:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 16:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 16:46	79-00-5	
Trichloroethene	**72.6**	ug/L	1.0	0.17	1		10/29/19 16:46	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 16:46	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 16:46	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	80-120		1		10/29/19 16:46	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/29/19 16:46	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/29/19 16:46	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 16:46		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: I W-77-201910 **Lab ID: 60319115049** Collected: 10/23/19 16:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**3.4J**	ug/L	10.0	3.3	1		10/29/19 17:57	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 17:57	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 17:57	75-27-4	
Bromoform	**0.74J**	ug/L	1.0	0.21	1		10/29/19 17:57	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 17:57	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 17:57	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 17:57	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 17:57	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 17:57	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 17:57	75-00-3	
Chloroform	**0.18J**	ug/L	1.0	0.10	1		10/29/19 17:57	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 17:57	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 17:57	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 17:57	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 17:57	107-06-2	
1,1-Dichloroethene	**0.70J**	ug/L	1.0	0.22	1		10/29/19 17:57	75-35-4	
cis-1,2-Dichloroethene	**6.8**	ug/L	1.0	0.17	1		10/29/19 17:57	156-59-2	
trans-1,2-Dichloroethene	**0.48J**	ug/L	1.0	0.17	1		10/29/19 17:57	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 17:57	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 17:57	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 17:57	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 17:57	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 17:57	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 17:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 17:57	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 17:57	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 17:57	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 17:57	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 17:57	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 17:57	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 17:57	79-00-5	
Trichloroethene	**180**	ug/L	10.0	1.7	10		10/31/19 18:15	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 17:57	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 17:57	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/29/19 17:57	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/29/19 17:57	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/29/19 17:57	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 17:57		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-12-201910 **Lab ID: 60319115050** Collected: 10/23/19 09:30 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 13:02	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 13:02	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 13:02	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 13:02	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 13:02	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 13:02	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 13:02	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 13:02	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 13:02	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 13:02	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 13:02	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 13:02	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 13:02	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 13:02	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 13:02	107-06-2	
1,1-Dichloroethene	**1.4**	ug/L	1.0	0.22	1		10/31/19 13:02	75-35-4	
cis-1,2-Dichloroethene	**10.1**	ug/L	1.0	0.17	1		10/31/19 13:02	156-59-2	
trans-1,2-Dichloroethene	**0.21J**	ug/L	1.0	0.17	1		10/31/19 13:02	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 13:02	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 13:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 13:02	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 13:02	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 13:02	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 13:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 13:02	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 13:02	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 13:02	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 13:02	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 13:02	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 13:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 13:02	79-00-5	
Trichloroethene	**471**	ug/L	10.0	1.7	10		10/31/19 13:17	79-01-6	
Vinyl chloride	**0.26J**	ug/L	1.0	0.11	1		10/31/19 13:02	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 13:02	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/31/19 13:02	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		10/31/19 13:02	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 13:02	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 13:02		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW-14-201910 **Lab ID: 60319115051** Collected: 10/23/19 11:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 09:43	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 09:43	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 09:43	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 09:43	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 09:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 09:43	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 09:43	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 09:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 09:43	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 09:43	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 09:43	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 09:43	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 09:43	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 09:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 09:43	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 09:43	75-35-4	
cis-1,2-Dichloroethene	**0.60J**	ug/L	1.0	0.17	1		10/31/19 09:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 09:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 09:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 09:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 09:43	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 09:43	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 09:43	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 09:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 09:43	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 09:43	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 09:43	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 09:43	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 09:43	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 09:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 09:43	79-00-5	
Trichloroethene	**2.6**	ug/L	1.0	0.17	1		10/31/19 09:43	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 09:43	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 09:43	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 09:43	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	77-122		1		10/31/19 09:43	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		10/31/19 09:43	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 09:43		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -50R-201910 **Lab ID: 60319115052** Collected: 10/23/19 09:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**728**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:24	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 09:58	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 09:58	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 09:58	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 09:58	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 09:58	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 09:58	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 09:58	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 09:58	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 09:58	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 09:58	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 09:58	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 09:58	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 09:58	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 09:58	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 09:58	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 09:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 09:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 09:58	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 09:58	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 09:58	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 09:58	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 09:58	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 09:58	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 09:58	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 09:58	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 09:58	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 09:58	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 09:58	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 09:58	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 09:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 09:58	79-00-5	
Trichloroethene	**0.61J**	ug/L	1.0	0.17	1		10/31/19 09:58	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/31/19 09:58	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 09:58	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/31/19 09:58	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		10/31/19 09:58	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 09:58	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 09:58		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 11:02	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -50R-201910 **Lab ID: 60319115052** Collected: 10/23/19 09:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**17.1**	mg/L	1.0	0.23	1		11/05/19 02:17	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.043J**	mg/L	0.10	0.038	1		10/24/19 16:03		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:03	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:03	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.8**	mg/L	1.0	0.29	1		10/29/19 16:57	7440-44-0	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: RW -69-201910 **Lab ID: 60319115053** Collected: 10/23/19 11:25 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**638**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:32	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 10:40	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 10:40	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 10:40	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 10:40	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 10:40	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 10:40	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 10:40	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 10:40	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 10:40	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 10:40	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 10:40	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 10:40	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 10:40	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 10:40	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 10:40	107-06-2	
1,1-Dichloroethene	**1.5**	ug/L	1.0	0.22	1		10/31/19 10:40	75-35-4	
cis-1,2-Dichloroethene	**5.6**	ug/L	1.0	0.17	1		10/31/19 10:40	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 10:40	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 10:40	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 10:40	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 10:40	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 10:40	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 10:40	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 10:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 10:40	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 10:40	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 10:40	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 10:40	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 10:40	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 10:40	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 10:40	79-00-5	
Trichloroethene	**150**	ug/L	1.0	0.17	1		10/31/19 10:40	79-01-6	
Vinyl chloride	**0.53J**	ug/L	1.0	0.11	1		10/31/19 10:40	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 10:40	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/31/19 10:40	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		10/31/19 10:40	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		10/31/19 10:40	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 10:40		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 11:03	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: RW -69-201910 **Lab ID: 60319115053** Collected: 10/23/19 11:25 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**1.6**	mg/L	1.0	0.23	1		11/05/19 03:08	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		10/24/19 16:05		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:05	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:05	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.88J**	mg/L	1.0	0.29	1		10/29/19 17:10	7440-44-0	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: ITMW -9-201910 **Lab ID: 60319115054** Collected: 10/23/19 13:05 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**24.0J**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:34	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 11:37	67-64-1	
Benzene	**1.6**	ug/L	1.0	0.079	1		10/31/19 11:37	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 11:37	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 11:37	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 11:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 11:37	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 11:37	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 11:37	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 11:37	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 11:37	75-00-3	
Chloroform	**0.59J**	ug/L	1.0	0.10	1		10/31/19 11:37	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 11:37	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 11:37	124-48-1	
1,1-Dichloroethane	**4.6**	ug/L	1.0	0.097	1		10/31/19 11:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 11:37	107-06-2	
1,1-Dichloroethene	**13.8**	ug/L	1.0	0.22	1		10/31/19 11:37	75-35-4	
cis-1,2-Dichloroethene	**96.3**	ug/L	1.0	0.17	1		10/31/19 11:37	156-59-2	
trans-1,2-Dichloroethene	**3.0**	ug/L	1.0	0.17	1		10/31/19 11:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 11:37	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 11:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 11:37	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 11:37	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 11:37	591-78-6	
Methylene Chloride	**0.28J**	ug/L	1.0	0.27	1		10/31/19 11:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 11:37	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 11:37	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 11:37	79-34-5	
Tetrachloroethene	**2.9**	ug/L	1.0	0.22	1		10/31/19 11:37	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 11:37	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 11:37	71-55-6	
1,1,2-Trichloroethane	**0.15J**	ug/L	1.0	0.10	1		10/31/19 11:37	79-00-5	
Trichloroethene	**2720**	ug/L	50.0	8.5	50		10/31/19 11:51	79-01-6	
Vinyl chloride	**2.0**	ug/L	1.0	0.11	1		10/31/19 11:37	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 11:37	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/31/19 11:37	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	77-122		1		10/31/19 11:37	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 11:37	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 11:37		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 11:03	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: ITMW -9-201910 **Lab ID: 60319115054** Collected: 10/23/19 13:05 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**25.1**	mg/L	2.0	0.46	2		11/05/19 03:24	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**6.5**	mg/L	0.20	0.076	2		10/24/19 16:42		
Nitrogen, Nitrate	**6.5**	mg/L	0.20	0.13	2		10/24/19 16:42	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.20	0.13	2		10/24/19 16:42	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.8**	mg/L	1.0	0.29	1		10/29/19 17:23	7440-44-0	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -87-201910 **Lab ID: 60319115055** Collected: 10/23/19 13:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**82.8**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:37	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 13:31	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 13:31	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 13:31	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 13:31	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 13:31	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 13:31	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 13:31	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 13:31	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 13:31	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 13:31	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 13:31	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 13:31	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 13:31	124-48-1	
1,1-Dichloroethane	**1.1**	ug/L	1.0	0.097	1		10/31/19 13:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 13:31	107-06-2	
1,1-Dichloroethene	**2.9**	ug/L	1.0	0.22	1		10/31/19 13:31	75-35-4	
cis-1,2-Dichloroethene	**22.4**	ug/L	1.0	0.17	1		10/31/19 13:31	156-59-2	
trans-1,2-Dichloroethene	**0.89J**	ug/L	1.0	0.17	1		10/31/19 13:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 13:31	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 13:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 13:31	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 13:31	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 13:31	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 13:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 13:31	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 13:31	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 13:31	79-34-5	
Tetrachloroethene	**3.9**	ug/L	1.0	0.22	1		10/31/19 13:31	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 13:31	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 13:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 13:31	79-00-5	
Trichloroethene	**315**	ug/L	10.0	1.7	10		10/31/19 13:45	79-01-6	
Vinyl chloride	**0.21J**	ug/L	1.0	0.11	1		10/31/19 13:31	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 13:31	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 13:31	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/31/19 13:31	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 13:31	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 13:31		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 11:03	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -87-201910 **Lab ID: 60319115055** Collected: 10/23/19 13:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**13.6**	mg/L	1.0	0.23	1		11/05/19 03:41	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**2.4**	mg/L	0.10	0.038	1		10/24/19 16:10		
Nitrogen, Nitrate	**2.4**	mg/L	0.10	0.067	1		10/24/19 16:10	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:10	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.65J**	mg/L	1.0	0.29	1		10/29/19 17:36	7440-44-0	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -58R-201910 **Lab ID: 60319115056** Collected: 10/23/19 15:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**732**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:39	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 13:59	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 13:59	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 13:59	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 13:59	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 13:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 13:59	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 13:59	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 13:59	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 13:59	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 13:59	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 13:59	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 13:59	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 13:59	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 13:59	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 13:59	107-06-2	
1,1-Dichloroethene	**1.8**	ug/L	1.0	0.22	1		10/31/19 13:59	75-35-4	
cis-1,2-Dichloroethene	**9.1**	ug/L	1.0	0.17	1		10/31/19 13:59	156-59-2	
trans-1,2-Dichloroethene	**0.19J**	ug/L	1.0	0.17	1		10/31/19 13:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 13:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 13:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 13:59	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 13:59	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 13:59	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 13:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 13:59	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 13:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 13:59	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 13:59	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 13:59	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 13:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 13:59	79-00-5	
Trichloroethene	**299**	ug/L	10.0	1.7	10		10/31/19 14:14	79-01-6	
Vinyl chloride	**0.51J**	ug/L	1.0	0.11	1		10/31/19 13:59	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 13:59	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/31/19 13:59	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/31/19 13:59	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 13:59	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 13:59		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 11:04	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -58R-201910 **Lab ID: 60319115056** Collected: 10/23/19 15:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**1.7**	mg/L	1.0	0.23	1		11/05/19 03:58	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		10/24/19 16:11		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:11	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:11	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.40J**	mg/L	1.0	0.29	1		10/29/19 17:50	7440-44-0	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -38-201910 **Lab ID: 60319115057** Collected: 10/23/19 17:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**4060**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:42	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 12:06	67-64-1	
Benzene	**0.15J**	ug/L	1.0	0.079	1		10/31/19 12:06	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 12:06	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 12:06	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 12:06	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 12:06	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 12:06	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 12:06	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 12:06	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 12:06	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 12:06	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 12:06	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 12:06	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 12:06	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 12:06	107-06-2	
1,1-Dichloroethene	**8.1**	ug/L	1.0	0.22	1		10/31/19 12:06	75-35-4	
cis-1,2-Dichloroethene	**542**	ug/L	50.0	8.5	50		10/31/19 12:20	156-59-2	
trans-1,2-Dichloroethene	**3.4**	ug/L	1.0	0.17	1		10/31/19 12:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 12:06	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 12:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 12:06	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 12:06	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 12:06	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 12:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 12:06	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 12:06	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 12:06	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 12:06	127-18-4	
Toluene	**0.20J**	ug/L	1.0	0.14	1		10/31/19 12:06	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 12:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 12:06	79-00-5	
Trichloroethene	**2180**	ug/L	50.0	8.5	50		10/31/19 12:20	79-01-6	
Vinyl chloride	**307**	ug/L	50.0	5.5	50		10/31/19 12:20	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 12:06	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 12:06	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/31/19 12:06	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		10/31/19 12:06	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 12:06		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 11:04	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW -38-201910 **Lab ID: 60319115057** Collected: 10/23/19 17:00 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**94.4**	mg/L	20.0	4.6	20		11/02/19 17:58	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.086J**	mg/L	0.10	0.038	1		10/24/19 16:13		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:13	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:13	14797-65-0	M1
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.3**	mg/L	1.0	0.29	1		10/29/19 18:03	7440-44-0	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: DUP -01-201910 **Lab ID: 60319115058** Collected: 10/23/19 15:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 14:28	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 14:28	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 14:28	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 14:28	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 14:28	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 14:28	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 14:28	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 14:28	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 14:28	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 14:28	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 14:28	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 14:28	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 14:28	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 14:28	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 14:28	107-06-2	
1,1-Dichloroethene	**1.8**	ug/L	1.0	0.22	1		10/31/19 14:28	75-35-4	
cis-1,2-Dichloroethene	**9.6**	ug/L	1.0	0.17	1		10/31/19 14:28	156-59-2	
trans-1,2-Dichloroethene	**0.25J**	ug/L	1.0	0.17	1		10/31/19 14:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 14:28	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 14:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 14:28	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 14:28	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 14:28	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 14:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 14:28	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 14:28	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 14:28	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 14:28	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 14:28	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 14:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 14:28	79-00-5	
Trichloroethene	**311**	ug/L	10.0	1.7	10		10/31/19 14:42	79-01-6	
Vinyl chloride	**0.55J**	ug/L	1.0	0.11	1		10/31/19 14:28	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 14:28	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 14:28	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		10/31/19 14:28	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 14:28	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 14:28		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: DUP -07-201910 **Lab ID: 60319115059** Collected: 10/23/19 13:05 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 12:34	67-64-1	
Benzene	**1.6**	ug/L	1.0	0.079	1		10/31/19 12:34	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 12:34	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 12:34	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 12:34	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 12:34	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 12:34	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 12:34	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 12:34	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 12:34	75-00-3	
Chloroform	**0.57J**	ug/L	1.0	0.10	1		10/31/19 12:34	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 12:34	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 12:34	124-48-1	
1,1-Dichloroethane	**4.5**	ug/L	1.0	0.097	1		10/31/19 12:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 12:34	107-06-2	
1,1-Dichloroethene	**13.8**	ug/L	1.0	0.22	1		10/31/19 12:34	75-35-4	
cis-1,2-Dichloroethene	**95.0**	ug/L	1.0	0.17	1		10/31/19 12:34	156-59-2	
trans-1,2-Dichloroethene	**3.0**	ug/L	1.0	0.17	1		10/31/19 12:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 12:34	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 12:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 12:34	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 12:34	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 12:34	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 12:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 12:34	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 12:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 12:34	79-34-5	
Tetrachloroethene	**3.0**	ug/L	1.0	0.22	1		10/31/19 12:34	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 12:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 12:34	71-55-6	
1,1,2-Trichloroethane	**0.12J**	ug/L	1.0	0.10	1		10/31/19 12:34	79-00-5	
Trichloroethene	**2810**	ug/L	50.0	8.5	50		10/31/19 12:48	79-01-6	
Vinyl chloride	**2.0**	ug/L	1.0	0.11	1		10/31/19 12:34	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 12:34	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		10/31/19 12:34	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/31/19 12:34	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		10/31/19 12:34	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 12:34		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW -16-201910 **Lab ID: 60319115060** Collected: 10/23/19 15:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**53400**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:52	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**73.7**	ug/L	10.0	3.3	1		10/31/19 10:12	67-64-1	
Benzene	**0.18J**	ug/L	1.0	0.079	1		10/31/19 10:12	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 10:12	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 10:12	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 10:12	74-83-9	
2-Butanone (MEK)	**325**	ug/L	10.0	0.70	1		10/31/19 10:12	78-93-3	
Carbon disulfide	**1.6J**	ug/L	5.0	0.16	1		10/31/19 10:12	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 10:12	56-23-5	
Chlorobenzene	**0.14J**	ug/L	1.0	0.13	1		10/31/19 10:12	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 10:12	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 10:12	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 10:12	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 10:12	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 10:12	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 10:12	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 10:12	75-35-4	
cis-1,2-Dichloroethene	**8.8**	ug/L	1.0	0.17	1		10/31/19 10:12	156-59-2	
trans-1,2-Dichloroethene	**0.39J**	ug/L	1.0	0.17	1		10/31/19 10:12	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 10:12	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 10:12	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 10:12	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 10:12	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 10:12	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 10:12	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.9J**	ug/L	10.0	0.56	1		10/31/19 10:12	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 10:12	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 10:12	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 10:12	127-18-4	
Toluene	**0.21J**	ug/L	1.0	0.14	1		10/31/19 10:12	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 10:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 10:12	79-00-5	
Trichloroethene	**6.0**	ug/L	1.0	0.17	1		10/31/19 10:12	79-01-6	
Vinyl chloride	**2.4**	ug/L	1.0	0.11	1		10/31/19 10:12	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 10:12	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 10:12	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/31/19 10:12	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 10:12	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 10:12		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**498**	mg/L	50.0	11.0	50		11/05/19 04:49	16887-00-6	
Sulfate	**3.9**	mg/L	1.0	0.23	1		11/05/19 04:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW -16-201910 **Lab ID: 60319115060** Collected: 10/23/19 15:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.081J**	mg/L	0.10	0.038	1		10/24/19 16:11		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:11	14797-55-8	
Nitrogen, Nitrite	**0.085J**	mg/L	0.10	0.067	1		10/24/19 16:11	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**449**	mg/L	50.0	14.5	50		10/31/19 17:10	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**469**	mg/L	50.0	14.5	50		10/31/19 23:38		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW -22R-201910 **Lab ID: 60319115061** Collected: 10/23/19 12:30 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**21200**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:44	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 11:09	67-64-1	
Benzene	**0.15J**	ug/L	1.0	0.079	1		10/31/19 11:09	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 11:09	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 11:09	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 11:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 11:09	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 11:09	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 11:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 11:09	108-90-7	
Chloroethane	**1.5**	ug/L	1.0	0.42	1		10/31/19 11:09	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 11:09	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 11:09	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 11:09	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 11:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 11:09	107-06-2	
1,1-Dichloroethene	**0.72J**	ug/L	1.0	0.22	1		10/31/19 11:09	75-35-4	
cis-1,2-Dichloroethene	**126**	ug/L	1.0	0.17	1		10/31/19 11:09	156-59-2	
trans-1,2-Dichloroethene	**1.1**	ug/L	1.0	0.17	1		10/31/19 11:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 11:09	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 11:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 11:09	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 11:09	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 11:09	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 11:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 11:09	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 11:09	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 11:09	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 11:09	127-18-4	
Toluene	**0.23J**	ug/L	1.0	0.14	1		10/31/19 11:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 11:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 11:09	79-00-5	
Trichloroethene	**146**	ug/L	1.0	0.17	1		10/31/19 11:09	79-01-6	
Vinyl chloride	**7.9**	ug/L	1.0	0.11	1		10/31/19 11:09	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 11:09	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/31/19 11:09	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		10/31/19 11:09	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 11:09	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 11:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**189**	mg/L	20.0	4.4	20		11/02/19 18:48	16887-00-6	
Sulfate	**2.8**	mg/L	1.0	0.23	1		11/05/19 05:22	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW -22R-201910 **Lab ID: 60319115061** Collected: 10/23/19 12:30 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.075J**	mg/L	0.10	0.038	1		10/24/19 16:08		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:08	14797-55-8	
Nitrogen, Nitrite	**0.069J**	mg/L	0.10	0.067	1		10/24/19 16:08	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.9**	mg/L	1.0	0.29	1		10/29/19 18:30	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**0.81J**	mg/L	1.0	0.29	1		11/01/19 00:19		B

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618327 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

METHOD BLANK: 2523009 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	14.0	10/28/19 12:12	

LABORATORY CONTROL SAMPLE: 2523010

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	9930	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2523011 2523012

Parameter	Units	60319115042 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	6940	10000	10000	16700	16800	98	98	75-125	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618526 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115001, 60319115002, 60319115003, 60319115004, 60319115005, 60319115006, 60319115007, 60319115008, 60319115009

METHOD BLANK: 2524149 Matrix: Water
Associated Lab Samples: 60319115001, 60319115002, 60319115003, 60319115004, 60319115005, 60319115006, 60319115007, 60319115008, 60319115009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/01/19 08:35	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/01/19 08:35	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/01/19 08:35	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/01/19 08:35	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/01/19 08:35	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/01/19 08:35	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/01/19 08:35	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/01/19 08:35	
2-Hexanone	ug/L	ND	10.0	1.0	11/01/19 08:35	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/01/19 08:35	
Acetone	ug/L	ND	10.0	3.3	11/01/19 08:35	
Benzene	ug/L	ND	1.0	0.079	11/01/19 08:35	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/01/19 08:35	
Bromoform	ug/L	ND	1.0	0.21	11/01/19 08:35	
Bromomethane	ug/L	ND	5.0	0.32	11/01/19 08:35	
Carbon disulfide	ug/L	ND	5.0	0.16	11/01/19 08:35	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/01/19 08:35	
Chlorobenzene	ug/L	ND	1.0	0.13	11/01/19 08:35	
Chloroethane	ug/L	ND	1.0	0.42	11/01/19 08:35	
Chloroform	ug/L	ND	1.0	0.10	11/01/19 08:35	
Chloromethane	ug/L	ND	1.0	0.16	11/01/19 08:35	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/01/19 08:35	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/01/19 08:35	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/01/19 08:35	
Ethylbenzene	ug/L	ND	1.0	0.12	11/01/19 08:35	
Methylene Chloride	ug/L	ND	1.0	0.27	11/01/19 08:35	
Styrene	ug/L	ND	1.0	0.15	11/01/19 08:35	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/01/19 08:35	
Toluene	ug/L	ND	1.0	0.14	11/01/19 08:35	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/01/19 08:35	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/01/19 08:35	
Trichloroethene	ug/L	ND	1.0	0.17	11/01/19 08:35	
Vinyl chloride	ug/L	ND	1.0	0.11	11/01/19 08:35	
Xylene (Total)	ug/L	ND	3.0	0.34	11/01/19 08:35	
1,2-Dichloroethane-d4 (S)	%	105	77-122		11/01/19 08:35	
4-Bromofluorobenzene (S)	%	100	80-120		11/01/19 08:35	
Toluene-d8 (S)	%	100	80-120		11/01/19 08:35	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

LABORATORY CONTROL SAMPLE: 2524150

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.7	103	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	20.0	100	71-122	
1,1,2-Trichloroethane	ug/L	20	20.4	102	76-123	
1,1-Dichloroethane	ug/L	20	20.5	103	78-117	
1,1-Dichloroethene	ug/L	20	23.0	115	74-122	
1,2-Dichloroethane	ug/L	20	19.9	100	73-120	
1,2-Dichloropropane	ug/L	20	20.7	103	78-115	
2-Butanone (MEK)	ug/L	100	96.8	97	54-133	
2-Hexanone	ug/L	100	94.9	95	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	97.2	97	62-130	
Acetone	ug/L	100	97.5	98	54-130	
Benzene	ug/L	20	20.3	102	80-120	
Bromodichloromethane	ug/L	20	18.8	94	78-121	
Bromoform	ug/L	20	16.6	83	62-137	
Bromomethane	ug/L	20	23.4	117	41-145	
Carbon disulfide	ug/L	20	20.3	102	64-119	
Carbon tetrachloride	ug/L	20	20.5	103	77-122	
Chlorobenzene	ug/L	20	20.3	101	80-123	
Chloroethane	ug/L	20	21.7	108	60-146	
Chloroform	ug/L	20	21.1	106	81-116	
Chloromethane	ug/L	20	21.4	107	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.2	101	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.3	101	78-118	
Dibromochloromethane	ug/L	20	17.6	88	73-128	
Ethylbenzene	ug/L	20	20.3	102	80-120	
Methylene Chloride	ug/L	20	22.1	110	80-126	
Styrene	ug/L	20	20.2	101	85-120	
Tetrachloroethene	ug/L	20	19.9	100	77-121	
Toluene	ug/L	20	20.1	101	80-120	
trans-1,2-Dichloroethene	ug/L	20	20.3	101	80-120	
trans-1,3-Dichloropropene	ug/L	20	17.9	90	76-123	
Trichloroethene	ug/L	20	22.5	112	80-121	
Vinyl chloride	ug/L	20	21.2	106	46-162	
Xylene (Total)	ug/L	60	61.0	102	80-120	
1,2-Dichloroethane-d4 (S)	%			103	77-122	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618529 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115010, 60319115011, 60319115012, 60319115013, 60319115014, 60319115015, 60319115016, 60319115017, 60319115018, 60319115019, 60319115020, 60319115021, 60319115022, 60319115023, 60319115024, 60319115025, 60319115026, 60319115027, 60319115028, 60319115029

METHOD BLANK: 2524157 Matrix: Water
Associated Lab Samples: 60319115010, 60319115011, 60319115012, 60319115013, 60319115014, 60319115015, 60319115016, 60319115017, 60319115018, 60319115019, 60319115020, 60319115021, 60319115022, 60319115023, 60319115024, 60319115025, 60319115026, 60319115027, 60319115028, 60319115029

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	10/28/19 19:34	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	10/28/19 19:34	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	10/28/19 19:34	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	10/28/19 19:34	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	10/28/19 19:34	
1,2-Dichloroethane	ug/L	0.15J	1.0	0.14	10/28/19 19:34	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	10/28/19 19:34	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	10/28/19 19:34	
2-Hexanone	ug/L	ND	10.0	1.0	10/28/19 19:34	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	10/28/19 19:34	
Acetone	ug/L	ND	10.0	3.3	10/28/19 19:34	
Benzene	ug/L	ND	1.0	0.079	10/28/19 19:34	
Bromodichloromethane	ug/L	ND	1.0	0.17	10/28/19 19:34	
Bromoform	ug/L	ND	1.0	0.21	10/28/19 19:34	
Bromomethane	ug/L	ND	5.0	0.32	10/28/19 19:34	
Carbon disulfide	ug/L	ND	5.0	0.16	10/28/19 19:34	
Carbon tetrachloride	ug/L	ND	1.0	0.084	10/28/19 19:34	
Chlorobenzene	ug/L	ND	1.0	0.13	10/28/19 19:34	
Chloroethane	ug/L	ND	1.0	0.42	10/28/19 19:34	
Chloroform	ug/L	ND	1.0	0.10	10/28/19 19:34	
Chloromethane	ug/L	ND	1.0	0.16	10/28/19 19:34	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/28/19 19:34	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	10/28/19 19:34	
Dibromochloromethane	ug/L	ND	1.0	0.15	10/28/19 19:34	
Ethylbenzene	ug/L	ND	1.0	0.12	10/28/19 19:34	
Methylene Chloride	ug/L	ND	1.0	0.27	10/28/19 19:34	
Styrene	ug/L	ND	1.0	0.15	10/28/19 19:34	
Tetrachloroethene	ug/L	0.30J	1.0	0.22	10/28/19 19:34	
Toluene	ug/L	ND	1.0	0.14	10/28/19 19:34	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/28/19 19:34	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	10/28/19 19:34	
Trichloroethene	ug/L	ND	1.0	0.17	10/28/19 19:34	
Vinyl chloride	ug/L	ND	1.0	0.11	10/28/19 19:34	
Xylene (Total)	ug/L	ND	3.0	0.34	10/28/19 19:34	
1,2-Dichloroethane-d4 (S)	%	102	77-122		10/28/19 19:34	
4-Bromofluorobenzene (S)	%	102	80-120		10/28/19 19:34	
Toluene-d8 (S)	%	98	80-120		10/28/19 19:34	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

LABORATORY CONTROL SAMPLE: 2524158

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	22.0	110	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.7	99	71-122	
1,1,2-Trichloroethane	ug/L	20	21.8	109	76-123	
1,1-Dichloroethane	ug/L	20	21.9	109	78-117	
1,1-Dichloroethene	ug/L	20	23.4	117	74-122	
1,2-Dichloroethane	ug/L	20	20.5	103	73-120	
1,2-Dichloropropane	ug/L	20	21.7	108	78-115	
2-Butanone (MEK)	ug/L	100	99.2	99	54-133	
2-Hexanone	ug/L	100	101	101	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	118	118	62-130	
Acetone	ug/L	100	102	102	54-130	
Benzene	ug/L	20	22.0	110	80-120	
Bromodichloromethane	ug/L	20	21.1	105	78-121	
Bromoform	ug/L	20	16.5	83	62-137	
Bromomethane	ug/L	20	15.0	75	41-145	
Carbon disulfide	ug/L	20	21.3	107	64-119	
Carbon tetrachloride	ug/L	20	20.3	102	77-122	
Chlorobenzene	ug/L	20	21.0	105	80-123	
Chloroethane	ug/L	20	20.4	102	60-146	
Chloroform	ug/L	20	21.1	105	81-116	
Chloromethane	ug/L	20	13.1	65	29-154	
cis-1,2-Dichloroethene	ug/L	20	22.0	110	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.7	103	78-118	
Dibromochloromethane	ug/L	20	19.3	96	73-128	
Ethylbenzene	ug/L	20	21.2	106	80-120	
Methylene Chloride	ug/L	20	21.8	109	80-126	
Styrene	ug/L	20	21.2	106	85-120	
Tetrachloroethene	ug/L	20	21.4	107	77-121	
Toluene	ug/L	20	21.4	107	80-120	
trans-1,2-Dichloroethene	ug/L	20	21.8	109	80-120	
trans-1,3-Dichloropropene	ug/L	20	18.8	94	76-123	
Trichloroethene	ug/L	20	22.6	113	80-121	
Vinyl chloride	ug/L	20	20.6	103	46-162	
Xylene (Total)	ug/L	60	65.6	109	80-120	
1,2-Dichloroethane-d4 (S)	%			102	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618530 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115030, 60319115031, 60319115032, 60319115033, 60319115034, 60319115035, 60319115036, 60319115037, 60319115038, 60319115039, 60319115040, 60319115041, 60319115042, 60319115043, 60319115044, 60319115045, 60319115046, 60319115047, 60319115048, 60319115049

METHOD BLANK: 2524159 Matrix: Water
Associated Lab Samples: 60319115030, 60319115031, 60319115032, 60319115033, 60319115034, 60319115035, 60319115036, 60319115037, 60319115038, 60319115039, 60319115040, 60319115041, 60319115042, 60319115043, 60319115044, 60319115045, 60319115046, 60319115047, 60319115048, 60319115049

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	10/29/19 12:40	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	10/29/19 12:40	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	10/29/19 12:40	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	10/29/19 12:40	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	10/29/19 12:40	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	10/29/19 12:40	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	10/29/19 12:40	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	10/29/19 12:40	
2-Hexanone	ug/L	ND	10.0	1.0	10/29/19 12:40	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	10/29/19 12:40	
Acetone	ug/L	ND	10.0	3.3	10/29/19 12:40	
Benzene	ug/L	ND	1.0	0.079	10/29/19 12:40	
Bromodichloromethane	ug/L	ND	1.0	0.17	10/29/19 12:40	
Bromoform	ug/L	ND	1.0	0.21	10/29/19 12:40	
Bromomethane	ug/L	ND	5.0	0.32	10/29/19 12:40	
Carbon disulfide	ug/L	0.19J	5.0	0.16	10/29/19 12:40	
Carbon tetrachloride	ug/L	ND	1.0	0.084	10/29/19 12:40	
Chlorobenzene	ug/L	ND	1.0	0.13	10/29/19 12:40	
Chloroethane	ug/L	ND	1.0	0.42	10/29/19 12:40	
Chloroform	ug/L	ND	1.0	0.10	10/29/19 12:40	
Chloromethane	ug/L	ND	1.0	0.16	10/29/19 12:40	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/29/19 12:40	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	10/29/19 12:40	
Dibromochloromethane	ug/L	ND	1.0	0.15	10/29/19 12:40	
Ethylbenzene	ug/L	ND	1.0	0.12	10/29/19 12:40	
Methylene Chloride	ug/L	ND	1.0	0.27	10/29/19 12:40	
Styrene	ug/L	ND	1.0	0.15	10/29/19 12:40	
Tetrachloroethene	ug/L	ND	1.0	0.22	10/29/19 12:40	
Toluene	ug/L	ND	1.0	0.14	10/29/19 12:40	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/29/19 12:40	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	10/29/19 12:40	
Trichloroethene	ug/L	ND	1.0	0.17	10/29/19 12:40	
Vinyl chloride	ug/L	ND	1.0	0.11	10/29/19 12:40	
Xylene (Total)	ug/L	ND	3.0	0.34	10/29/19 12:40	
1,2-Dichloroethane-d4 (S)	%	99	77-122		10/29/19 12:40	
4-Bromofluorobenzene (S)	%	103	80-120		10/29/19 12:40	
Toluene-d8 (S)	%	98	80-120		10/29/19 12:40	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

LABORATORY CONTROL SAMPLE: 2524160

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.1	100	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.7	99	71-122	
1,1,2-Trichloroethane	ug/L	20	18.1	91	76-123	
1,1-Dichloroethane	ug/L	20	20.5	102	78-117	
1,1-Dichloroethene	ug/L	20	20.3	102	74-122	
1,2-Dichloroethane	ug/L	20	20.1	101	73-120	
1,2-Dichloropropane	ug/L	20	20.7	104	78-115	
2-Butanone (MEK)	ug/L	100	94.7	95	54-133	
2-Hexanone	ug/L	100	98.8	99	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	108	108	62-130	
Acetone	ug/L	100	102	102	54-130	
Benzene	ug/L	20	20.0	100	80-120	
Bromodichloromethane	ug/L	20	20.0	100	78-121	
Bromoform	ug/L	20	17.3	86	62-137	
Bromomethane	ug/L	20	21.1	106	41-145	
Carbon disulfide	ug/L	20	20.5	102	64-119	
Carbon tetrachloride	ug/L	20	20.0	100	77-122	
Chlorobenzene	ug/L	20	19.4	97	80-123	
Chloroethane	ug/L	20	19.8	99	60-146	
Chloroform	ug/L	20	20.7	103	81-116	
Chloromethane	ug/L	20	17.9	89	29-154	
cis-1,2-Dichloroethene	ug/L	20	21.0	105	80-120	
cis-1,3-Dichloropropene	ug/L	20	21.2	106	78-118	
Dibromochloromethane	ug/L	20	19.6	98	73-128	
Ethylbenzene	ug/L	20	19.2	96	80-120	
Methylene Chloride	ug/L	20	22.2	111	80-126	
Styrene	ug/L	20	19.7	99	85-120	
Tetrachloroethene	ug/L	20	18.6	93	77-121	
Toluene	ug/L	20	19.0	95	80-120	
trans-1,2-Dichloroethene	ug/L	20	20.8	104	80-120	
trans-1,3-Dichloropropene	ug/L	20	19.0	95	76-123	
Trichloroethene	ug/L	20	20.6	103	80-121	
Vinyl chloride	ug/L	20	20.5	102	46-162	
Xylene (Total)	ug/L	60	59.1	98	80-120	
1,2-Dichloroethane-d4 (S)	%			105	77-122	
4-Bromofluorobenzene (S)	%			98	80-120	
Toluene-d8 (S)	%			97	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618858 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115012, 60319115014, 60319115022, 60319115027, 60319115050, 60319115051, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115058, 60319115059, 60319115060, 60319115061

METHOD BLANK: 2524826 Matrix: Water
Associated Lab Samples: 60319115012, 60319115014, 60319115022, 60319115027, 60319115050, 60319115051, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115058, 60319115059, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	10/31/19 08:47	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	10/31/19 08:47	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	10/31/19 08:47	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	10/31/19 08:47	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	10/31/19 08:47	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	10/31/19 08:47	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	10/31/19 08:47	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	10/31/19 08:47	
2-Hexanone	ug/L	ND	10.0	1.0	10/31/19 08:47	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	10/31/19 08:47	
Acetone	ug/L	ND	10.0	3.3	10/31/19 08:47	
Benzene	ug/L	ND	1.0	0.079	10/31/19 08:47	
Bromodichloromethane	ug/L	ND	1.0	0.17	10/31/19 08:47	
Bromoform	ug/L	ND	1.0	0.21	10/31/19 08:47	
Bromomethane	ug/L	ND	5.0	0.32	10/31/19 08:47	
Carbon disulfide	ug/L	ND	5.0	0.16	10/31/19 08:47	
Carbon tetrachloride	ug/L	ND	1.0	0.084	10/31/19 08:47	
Chlorobenzene	ug/L	ND	1.0	0.13	10/31/19 08:47	
Chloroethane	ug/L	ND	1.0	0.42	10/31/19 08:47	
Chloroform	ug/L	ND	1.0	0.10	10/31/19 08:47	
Chloromethane	ug/L	ND	1.0	0.16	10/31/19 08:47	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 08:47	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	10/31/19 08:47	
Dibromochloromethane	ug/L	ND	1.0	0.15	10/31/19 08:47	
Ethylbenzene	ug/L	ND	1.0	0.12	10/31/19 08:47	
Methylene Chloride	ug/L	ND	1.0	0.27	10/31/19 08:47	
Styrene	ug/L	ND	1.0	0.15	10/31/19 08:47	
Tetrachloroethene	ug/L	ND	1.0	0.22	10/31/19 08:47	
Toluene	ug/L	ND	1.0	0.14	10/31/19 08:47	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 08:47	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	10/31/19 08:47	
Trichloroethene	ug/L	ND	1.0	0.17	10/31/19 08:47	
Vinyl chloride	ug/L	ND	1.0	0.11	10/31/19 08:47	
Xylene (Total)	ug/L	ND	3.0	0.34	10/31/19 08:47	
1,2-Dichloroethane-d4 (S)	%	99	77-122		10/31/19 08:47	
4-Bromofluorobenzene (S)	%	98	80-120		10/31/19 08:47	
Toluene-d8 (S)	%	100	80-120		10/31/19 08:47	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

LABORATORY CONTROL SAMPLE: 2524827

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.0	95	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.3	96	71-122	
1,1,2-Trichloroethane	ug/L	20	19.5	97	76-123	
1,1-Dichloroethane	ug/L	20	19.6	98	78-117	
1,1-Dichloroethene	ug/L	20	21.4	107	74-122	
1,2-Dichloroethane	ug/L	20	18.8	94	73-120	
1,2-Dichloropropane	ug/L	20	19.2	96	78-115	
2-Butanone (MEK)	ug/L	100	89.8	90	54-133	
2-Hexanone	ug/L	100	93.2	93	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	96.5	96	62-130	
Acetone	ug/L	100	86.8	87	54-130	
Benzene	ug/L	20	19.3	96	80-120	
Bromodichloromethane	ug/L	20	18.3	91	78-121	
Bromoform	ug/L	20	17.1	86	62-137	
Bromomethane	ug/L	20	21.8	109	41-145	
Carbon disulfide	ug/L	20	19.6	98	64-119	
Carbon tetrachloride	ug/L	20	19.6	98	77-122	
Chlorobenzene	ug/L	20	19.3	97	80-123	
Chloroethane	ug/L	20	19.8	99	60-146	
Chloroform	ug/L	20	19.8	99	81-116	
Chloromethane	ug/L	20	17.8	89	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.0	95	80-120	
cis-1,3-Dichloropropene	ug/L	20	18.7	94	78-118	
Dibromochloromethane	ug/L	20	17.9	90	73-128	
Ethylbenzene	ug/L	20	19.3	96	80-120	
Methylene Chloride	ug/L	20	21.2	106	80-126	
Styrene	ug/L	20	19.3	96	85-120	
Tetrachloroethene	ug/L	20	18.9	94	77-121	
Toluene	ug/L	20	18.9	94	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.0	95	80-120	
trans-1,3-Dichloropropene	ug/L	20	17.4	87	76-123	
Trichloroethene	ug/L	20	21.3	106	80-121	
Vinyl chloride	ug/L	20	19.8	99	46-162	
Xylene (Total)	ug/L	60	58.4	97	80-120	
1,2-Dichloroethane-d4 (S)	%			99	77-122	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 619234
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115037, 60319115045

METHOD BLANK: 2526076 Matrix: Water
Associated Lab Samples: 60319115037, 60319115045

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Trichloroethene	ug/L	ND	1.0	0.17	10/30/19 14:59	
1,2-Dichloroethane-d4 (S)	%	99	77-122		10/30/19 14:59	
4-Bromofluorobenzene (S)	%	102	80-120		10/30/19 14:59	
Toluene-d8 (S)	%	100	80-120		10/30/19 14:59	

LABORATORY CONTROL SAMPLE: 2526077

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichloroethene	ug/L	20	22.2	111	80-121	
1,2-Dichloroethane-d4 (S)	%			99	77-122	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			101	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 619489
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115049

METHOD BLANK: 2526812 Matrix: Water
Associated Lab Samples: 60319115049

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Trichloroethene	ug/L	ND	1.0	0.17	10/31/19 16:21	
1,2-Dichloroethane-d4 (S)	%	100	77-122		10/31/19 16:21	
4-Bromofluorobenzene (S)	%	99	80-120		10/31/19 16:21	
Toluene-d8 (S)	%	101	80-120		10/31/19 16:21	

LABORATORY CONTROL SAMPLE: 2526813

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichloroethene	ug/L	20	23.5	118	80-121	
1,2-Dichloroethane-d4 (S)	%			105	77-122	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 620343 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115001, 60319115002

METHOD BLANK: 2529674 Matrix: Water
Associated Lab Samples: 60319115001, 60319115002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Trichloroethene	ug/L	ND	1.0	0.17	11/05/19 14:42	
1,2-Dichloroethane-d4 (S)	%	99	77-122		11/05/19 14:42	
4-Bromofluorobenzene (S)	%	99	80-120		11/05/19 14:42	
Toluene-d8 (S)	%	101	80-120		11/05/19 14:42	

LABORATORY CONTROL SAMPLE: 2529675

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichloroethene	ug/L	20	21.8	109	80-121	
1,2-Dichloroethane-d4 (S)	%			100	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618515 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057

METHOD BLANK: 2524109 Matrix: Water
Associated Lab Samples: 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	0.039	10/28/19 10:58	

LABORATORY CONTROL SAMPLE: 2524110

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.49	99	80-120	

MATRIX SPIKE SAMPLE: 2524111

Parameter	Units	60319063002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.5	0.51	101	75-125	

SAMPLE DUPLICATE: 2524112

Parameter	Units	60319116002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

SAMPLE DUPLICATE: 2524113

Parameter	Units	60319146002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 620025 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

METHOD BLANK: 2528885 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	11/02/19 14:02	
Sulfate	mg/L	ND	1.0	0.23	11/02/19 14:02	

METHOD BLANK: 2529453 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	11/05/19 08:38	
Sulfate	mg/L	ND	1.0	0.23	11/05/19 08:38	

LABORATORY CONTROL SAMPLE: 2528886

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	101	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

LABORATORY CONTROL SAMPLE: 2529454

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	
Sulfate	mg/L	5	5.3	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2528887 2528888

Parameter	Units	60319115042 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	155	100	100	260	258	105	103	80-120	1	15	
Sulfate	mg/L	10.2	5	5	15.6	15.5	109	108	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

MATRIX SPIKE SAMPLE: 2528889

Parameter	Units	60319115060 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	498	250	748	100	80-120	
Sulfate	mg/L	3.9	5	8.9	100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618075 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

METHOD BLANK: 2521951 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	0.067	10/24/19 15:59	
Nitrogen, Nitrite	mg/L	ND	0.10	0.067	10/24/19 15:59	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	10/24/19 15:59	

LABORATORY CONTROL SAMPLE: 2521952

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	0.90	90	70-130	
Nitrogen, Nitrite	mg/L	1	1.0	102	90-110	
Nitrogen, NO2 plus NO3	mg/L	2	1.9	96	90-110	

MATRIX SPIKE SAMPLE: 2521953

Parameter	Units	60319115043 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	1	0.95	95	70-130	
Nitrogen, Nitrite	mg/L	ND	1	1.1	110	90-110	
Nitrogen, NO2 plus NO3	mg/L	0.069J	2	2.0	99	90-110	

MATRIX SPIKE SAMPLE: 2521955

Parameter	Units	60319115057 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	1	1.0	101	70-130	
Nitrogen, Nitrite	mg/L	ND	1	1.1	111	90-110	M1
Nitrogen, NO2 plus NO3	mg/L	0.086J	2	2.1	102	90-110	

SAMPLE DUPLICATE: 2521954

Parameter	Units	60319115042 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	ND	ND		20	
Nitrogen, Nitrite	mg/L	ND	ND		20	
Nitrogen, NO2 plus NO3	mg/L	0.053J	0.051J		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618924 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60319115042, 60319115043, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115061

METHOD BLANK: 2525011 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	10/29/19 13:49	

LABORATORY CONTROL SAMPLE: 2525012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.5	110	80-120	

MATRIX SPIKE SAMPLE: 2525013

Parameter	Units	60318535007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	17.1	25	44.6	110	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 619519 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60319115044, 60319115060

METHOD BLANK: 2526884 Matrix: Water
Associated Lab Samples: 60319115044, 60319115060

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	10/31/19 16:17	

LABORATORY CONTROL SAMPLE: 2526885

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.5	110	80-120	

MATRIX SPIKE SAMPLE: 2526886

Parameter	Units	60319115044 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	212	125	345	106	80-120	

SAMPLE DUPLICATE: 2526887

Parameter	Units	60318969020 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	1130	1130	0	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 619152 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60319115042, 60319115043

METHOD BLANK: 2525777 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.29	10/30/19 16:57	

LABORATORY CONTROL SAMPLE: 2525778

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.6	112	80-120	

MATRIX SPIKE SAMPLE: 2525779

Parameter	Units	60319115042 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	0.58J	5	4.8	84	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 619520 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60319115044, 60319115060, 60319115061

METHOD BLANK: 2526889 Matrix: Water
Associated Lab Samples: 60319115044, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	0.30J	1.0	0.29	10/31/19 22:45	

LABORATORY CONTROL SAMPLE: 2526890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.5	111	80-120	

MATRIX SPIKE SAMPLE: 2526891

Parameter	Units	60319115044 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	203	125	329	101	80-120	

SAMPLE DUPLICATE: 2526892

Parameter	Units	60319115061 Result	Dup Result	RPD	Max RPD	Qualifiers
Dissolved Organic Carbon	mg/L	0.81J	0.78J		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 618526
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 618529
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 618530
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 618858
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 619234
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 619489
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 620343
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
pH	Post-analysis pH measurement indicates insufficient VOA sample preservation.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319115042	**MW-194-201910**	EPA 3010	618327	EPA 6010	618369
60319115043	**MW-61R-201910**	EPA 3010	618327	EPA 6010	618369
60319115044	**TMW-26-201910**	EPA 3010	618327	EPA 6010	618369
60319115052	**MW -50R-201910**	EPA 3010	618327	EPA 6010	618369
60319115053	**RW -69-201910**	EPA 3010	618327	EPA 6010	618369
60319115054	**ITMW -9-201910**	EPA 3010	618327	EPA 6010	618369
60319115055	**MW -87-201910**	EPA 3010	618327	EPA 6010	618369
60319115056	**MW -58R-201910**	EPA 3010	618327	EPA 6010	618369
60319115057	**MW -38-201910**	EPA 3010	618327	EPA 6010	618369
60319115060	**TMW -16-201910**	EPA 3010	618327	EPA 6010	618369
60319115061	**TMW -22R-201910**	EPA 3010	618327	EPA 6010	618369
60319115001	**MW-56R-201910**	EPA 5030B/8260	618526		
60319115001	**MW-56R-201910**	EPA 5030B/8260	620343		
60319115002	**MW-57R-201910**	EPA 5030B/8260	618526		
60319115002	**MW-57R-201910**	EPA 5030B/8260	620343		
60319115003	**TMW-19-201910**	EPA 5030B/8260	618526		
60319115004	**DUP-06-201910**	EPA 5030B/8260	618526		
60319115005	**MW-97-201910**	EPA 5030B/8260	618526		
60319115006	**MW-96-201910**	EPA 5030B/8260	618526		
60319115007	**MW-82-201910**	EPA 5030B/8260	618526		
60319115008	**DUP-02-201910**	EPA 5030B/8260	618526		
60319115009	**IW-78-201910**	EPA 5030B/8260	618526		
60319115010	**ITMW-1R-201910**	EPA 5030B/8260	618529		
60319115011	**MW-175-201910**	EPA 5030B/8260	618529		
60319115012	**TMW-30-201910**	EPA 5030B/8260	618529		
60319115012	**TMW-30-201910**	EPA 5030B/8260	618858		
60319115013	**MW-182-201910**	EPA 5030B/8260	618529		
60319115014	**MW-29-201910**	EPA 5030B/8260	618529		
60319115014	**MW-29-201910**	EPA 5030B/8260	618858		
60319115015	**TMW-27-201910**	EPA 5030B/8260	618529		
60319115016	**ITMW-20-201910**	EPA 5030B/8260	618529		
60319115017	**DUP-05-201910**	EPA 5030B/8260	618529		
60319115018	**MW-26-201910**	EPA 5030B/8260	618529		
60319115019	**MW-84-201910**	EPA 5030B/8260	618529		
60319115020	**MW-22-201910**	EPA 5030B/8260	618529		
60319115021	**MW-28-201910**	EPA 5030B/8260	618529		
60319115022	**DUP-03-201910**	EPA 5030B/8260	618529		
60319115022	**DUP-03-201910**	EPA 5030B/8260	618858		
60319115023	**MW-60R-201910**	EPA 5030B/8260	618529		
60319115024	**MW-196-201910**	EPA 5030B/8260	618529		
60319115025	**MW-55R-201910**	EPA 5030B/8260	618529		
60319115026	**DUP-04-2019110**	EPA 5030B/8260	618529		
60319115027	**TMW-24-2019110**	EPA 5030B/8260	618529		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319115027	TMW-24-2019110	EPA 5030B/8260	618858		
60319115028	TMW-23-2019110	EPA 5030B/8260	618529		
60319115029	MW-24-2019110	EPA 5030B/8260	618529		
60319115030	MW-178-201910	EPA 5030B/8260	618530		
60319115031	EB-02-201910	EPA 5030B/8260	618530		
60319115032	EB-03-201910	EPA 5030B/8260	618530		
60319115033	TB-03-201910	EPA 5030B/8260	618530		
60319115034	MW-98-201910	EPA 5030B/8260	618530		
60319115035	TB-04-201910	EPA 5030B/8260	618530		
60319115036	TB-05-201910	EPA 5030B/8260	618530		
60319115037	VP-10-201910	EPA 5030B/8260	618530		
60319115037	VP-10-201910	EPA 5030B/8260	619234		
60319115038	VP-12-201910	EPA 5030B/8260	618530		
60319115039	VP-7-201910	EPA 5030B/8260	618530		
60319115040	VP-8-201910	EPA 5030B/8260	618530		
60319115041	VP-14-201910	EPA 5030B/8260	618530		
60319115042	MW-194-201910	EPA 5030B/8260	618530		
60319115043	MW-61R-201910	EPA 5030B/8260	618530		
60319115044	TMW-26-201910	EPA 5030B/8260	618530		
60319115045	MW-46R-201910	EPA 5030B/8260	618530		
60319115045	MW-46R-201910	EPA 5030B/8260	619234		
60319115046	MW-184-201910	EPA 5030B/8260	618530		
60319115047	MW-183R-201910	EPA 5030B/8260	618530		
60319115048	MW-99-201910	EPA 5030B/8260	618530		
60319115049	I W-77-201910	EPA 5030B/8260	618530		
60319115049	I W-77-201910	EPA 5030B/8260	619489		
60319115050	TMW-12-201910	EPA 5030B/8260	618858		
60319115051	TMW-14-201910	EPA 5030B/8260	618858		
60319115052	MW -50R-201910	EPA 5030B/8260	618858		
60319115053	RW -69-201910	EPA 5030B/8260	618858		
60319115054	ITMW -9-201910	EPA 5030B/8260	618858		
60319115055	MW -87-201910	EPA 5030B/8260	618858		
60319115056	MW -58R-201910	EPA 5030B/8260	618858		
60319115057	MW -38-201910	EPA 5030B/8260	618858		
60319115058	DUP -01-201910	EPA 5030B/8260	618858		
60319115059	DUP -07-201910	EPA 5030B/8260	618858		
60319115060	TMW -16-201910	EPA 5030B/8260	618858		
60319115061	TMW -22R-201910	EPA 5030B/8260	618858		
60319115052	MW -50R-201910	SM 4500-S-2 D	618515		
60319115053	RW -69-201910	SM 4500-S-2 D	618515		
60319115054	ITMW -9-201910	SM 4500-S-2 D	618515		
60319115055	MW -87-201910	SM 4500-S-2 D	618515		
60319115056	MW -58R-201910	SM 4500-S-2 D	618515		
60319115057	MW -38-201910	SM 4500-S-2 D	618515		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319115042	**MW-194-201910**	EPA 300.0	620025		
60319115043	**MW-61R-201910**	EPA 300.0	620025		
60319115044	**TMW-26-201910**	EPA 300.0	620025		
60319115052	**MW -50R-201910**	EPA 300.0	620025		
60319115053	**RW -69-201910**	EPA 300.0	620025		
60319115054	**ITMW -9-201910**	EPA 300.0	620025		
60319115055	**MW -87-201910**	EPA 300.0	620025		
60319115056	**MW -58R-201910**	EPA 300.0	620025		
60319115057	**MW -38-201910**	EPA 300.0	620025		
60319115060	**TMW -16-201910**	EPA 300.0	620025		
60319115061	**TMW -22R-201910**	EPA 300.0	620025		
60319115042	**MW-194-201910**	EPA 353.2	618075		
60319115043	**MW-61R-201910**	EPA 353.2	618075		
60319115044	**TMW-26-201910**	EPA 353.2	618075		
60319115052	**MW -50R-201910**	EPA 353.2	618075		
60319115053	**RW -69-201910**	EPA 353.2	618075		
60319115054	**ITMW -9-201910**	EPA 353.2	618075		
60319115055	**MW -87-201910**	EPA 353.2	618075		
60319115056	**MW -58R-201910**	EPA 353.2	618075		
60319115057	**MW -38-201910**	EPA 353.2	618075		
60319115060	**TMW -16-201910**	EPA 353.2	618075		
60319115061	**TMW -22R-201910**	EPA 353.2	618075		
60319115042	**MW-194-201910**	SM 5310C	618924		
60319115043	**MW-61R-201910**	SM 5310C	618924		
60319115044	**TMW-26-201910**	SM 5310C	619519		
60319115052	**MW -50R-201910**	SM 5310C	618924		
60319115053	**RW -69-201910**	SM 5310C	618924		
60319115054	**ITMW -9-201910**	SM 5310C	618924		
60319115055	**MW -87-201910**	SM 5310C	618924		
60319115056	**MW -58R-201910**	SM 5310C	618924		
60319115057	**MW -38-201910**	SM 5310C	618924		
60319115060	**TMW -16-201910**	SM 5310C	619519		
60319115061	**TMW -22R-201910**	SM 5310C	618924		
60319115042	**MW-194-201910**	SM 5310C	619152		
60319115043	**MW-61R-201910**	SM 5310C	619152		
60319115044	**TMW-26-201910**	SM 5310C	619520		
60319115060	**TMW -16-201910**	SM 5310C	619520		
60319115061	**TMW -22R-201910**	SM 5310C	619520		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- WO# : 60319115 (60319115) or MTJL Log-in 1

ALL LY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: Email:	Site/Facility ID #
Collected by (print):	Purchase Order # / Quote #
Collected by (signature):	Turnaround Date Required:
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Compliance Monitoring? [ ] Yes [ ] No

DW PWS ID #:

DW Location Code #:

Immediately Packed on Ice? [ ] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses: 8260 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	(Y)	N	NA
Custody Signatures Present	(Y)	N	NA
Collector Signature Present	(Y)	N	NA
Bottles Intact	(Y)	N	NA
Correct Bottles	(Y)	N	NA
Sufficient Volume	(Y)	N	NA
Samples received on ice	(Y)	N	NA
VOA - Headspace Acceptable	Y	(N)	NA
USDA Regulated Soils	Y	N	(NA)
Samples in holding time	(Y)	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips: _____			
Sample pH Acceptable	(Y)	N	NA
pH Strips: _____			
Sulfide Present	Y	N	(NA)
Lead Acetate Strips: _____			

(6031 9115)

	Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	LAB USE ONLY Lab Sample # / Comments
1	MW-54R - 201910	GW	G	10/23/19	1129				3	001
2	MW-57R - 201910				1332					002
3	TMW-19 - 201910				1606					003
4	DUP-06 - 201910				1606					004
5	MW-97 - 201910				0915					005
6	MW-96 - 201910				1035					006
7	MW-82 - 201910				1240					007
8	DUP-02 - 201910				1240					008
9	IW-78 - 201910				1405					009
10	ITMW-1R - 201910				1600					010

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [✓] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y (N) N/A

Packing Material Used: Bubble bag Blk

LAB Tracking #: N/A

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [✓] N/A

Samples received via: FEDEX [ ] UPS [ ] Client [✓] Courier [ ] Pace Courier [ ] VIA

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
(see page 1)		E Brackett/Pace	10/24/19 0700
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID#: I-301

Cooler Temp Upon Receipt 1.7, 2.3, 1.3 oC

Cooler Therm Corr. Factor 0.0 oC

Cooler Temp Corrected 1.7, 2.3, 1.3 oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 3 of 10

F-ALL-C-010-rev.00, 05Jul2018

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 2

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected: PT MT CT ET
Phone: / Email:	Site/Facility ID #:
Collected by (print):	Purchase Order #:
Collected by (signature):	Quote #: / Turnaround Date Required:
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)
	Compliance Monitoring? [ ] Yes [ ] No
	DW PWS ID #:
	DW Location Code #:
	Immediately Packed on Ice? [ ] Yes [ ] No
	Field Filtered (if applicable): [ ] Yes [ ] No
	Analysis: _____

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: 8240 VOC Full List	LAB USE ONLY: Lab Sample # / Comments
MW-175-201910	GW	G	10/23/19	1145				3	X	011
TMW-30-201910				1445						012
MW-182-201910				1600						013
MW-29-201910				0910						014
TMW-27-201910				1040						015
ITMW-20-201910				1135						016
DUP-05-201910				1135						017
MW-26-201910				1235						018
MW-84-201910				1455						019
MW-22-201910				1600						020

60319115

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s)

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
(See page 1)		E Brackett / Pace	10/24/19 0200
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 3

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected by (print):	Purchase Order #: DW PWS ID #:
	Quote #: DW Location Code #:
Collected by (signature):	Turnaround Date Required: Immediately Packed on Ice? [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:_____

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses: 8260 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:_____			
Sample pH Acceptable	Y	N	NA
pH Strips:_____			
Sulfide Present	Y	N	NA
Lead Acetate Strips:_____			

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8260 VOC Full List	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
MW-28-201910	GW	G	10/23/19	1715				3	X	021
DUP-03-201910				1500						022
MW-60R-201910				0940						023
MW-196-201910				1055						024
MW-55R-201910				1215						025
DUP-04-201910				1215						026
TMW-24-201910				1425						027
TMW-25TA23-201910				1605						028
MW-24-201910				1720						029
MW-178-201910				1645						030

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #:

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments:

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature) E Brackett / Pace	Date/Time: 10/24/19 0200
Relinquished by/Company : (Signature) (see page 1)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

Page 5 of 10

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: Email:	Site/Facility ID #
Collected by (print):	Purchase Order #
	Quote #
Collected by (signature):	Turnaround Date Required:
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Compliance Monitoring? [ ] Yes [ ] No

DW PWS ID #:

DW Location Code #:

Immediately Packed on ice? [ ] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: 8260 VOC Full List	LAB USE ONLY: Lab Sample # / Comments
EB-02-201910	GW	G	10/23/19	1705				3	X	031
EB-03-201910	GW	G	10/23/19	1705						032
TB-03-201910				0730						033
MW-98-201910				0950						034
TB-04-201910				1750						035
TB-05-201910				1755						036

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature) (see page 1)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60319115

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurwelier	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: Email:	Site/Facility ID #
Collected by (print): Haley Ahlers	Purchase Order #
Collected by (signature): Haley Ahlers	Quote #
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	Turnaround Date Required: Std
	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)
	Compliance Monitoring? [ ] Yes [ ] No
	DW PWS ID #:
	DW Location Code #:
	Immediately Packed on Ice? [ ] Yes [ ] No
	Field Filtered (if applicable): [ ] Yes [X] No
	Analysis: _____

Container Preservative Type **: 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: 8240 VOC Full List	LAB USE ONLY: Lab Sample # / Comments
VP-10 - 201910	GW	G	10/23/19	1000				3	X	037
VP-12 - 201910	↓	↓	↓	1015				↓	↓	038
VP-7 - 201910				1050						039
VP-8 - 201910				1110						040
VP-14 - 201910	↓	↓	↓	1235				↓	↓	041

N/A

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60319155

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page _____ of _____

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Haley Ahlers / Ramboll	10/23/19 1800		
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: Email:	Site/Facility ID #
Collected by (print):	Purchase Order #
	Quote #
Collected by (signature):	Turnaround Date Required:
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Compliance Monitoring? [ ] Yes [ ] No

DW PWS ID #:

DW Location Code #:

Immediately Packed on Ice? [ ] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

Container Preservative Type **: 3 D 7 U 2 U O

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other BAK

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	8260 VOC Full List	Methane, Ethane, Ethene (RSK-MEE)	Metals, Total Iron	Sulfate, Nitrate, Chloride	Total Organic Carbon	Dissolved Organic Carbon	Volatile Fatty Acids (VFA)	LAB USE ONLY: Lab Sample # / Comments
MW-194-201910	GW	G	10/23/19	1040				12	X	X	X	X	X	X	X	042
MW-61R-201910				0910				↓	↓	↓	↓	↓	↓	↓	↓	043
TMW-26-201910				1700				↓		↓	↓	↓	↓	↓	↓	044
MW-46R-201910				1500				3								045
MW-184-201910				1340												046
MW-183R-201910				1102												047
MW-99-201910				1235												048
IW-77-201910				1610												049
TMW-12-201910				0930												050
TMW-14-201910	↓	↓	↓	1100				↓	↓							051

Analyses

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60319115

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 2 of 2

Relinquished by/Company : (Signature) (see page 1)	Date/Time:	Received by/Company : (Signature) / Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature) / Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature) / Date/Time:

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-In Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address: 6400 Jenny Lind Rd, Fort Smith
Customer Project Name/Number:	State: AR County/City: Sebastian Time Zone Collected: PT MT CT ET
Phone: Email: nzurweller@ramboll.com	Site/Facility ID #: — Compliance Monitoring? [ ] Yes [ ] No
Collected by (print): JD Pavlowsky	Purchase Order #: — DW PWS ID #: —
Collected by (signature): JD Pavlowsky	Quote #: — DW Location Code #: —
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold	Turnaround Date Required: Std — Immediately Packed on Ice? [X] Yes [ ] No — Field Filtered (if applicable): [ ] Yes [X] No — Analysis:
	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Container Preservative Type **: 3 D D 1 U U 2 U O 4/5 U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other Benzyl Alkonium chloride

Lab Project Manager:

Lab Profile/Line: 7444 Line 1

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	8260 VOC Full List	Methane, Ethane, Ethene (MEE)	Methane, Ethane, Ethene, Acetylene (MEEA)	Metals, Total Iron	Sulfate, Nitrate	Sulfate, Nitrate, Chloride	Total Organic Carbon	Dissolved Organic Carbon	Volatile Fatty Acids (VFA)	Sulfide	Hydrogen	LAB USE ONLY Lab Sample # / Comments
MW-50R-201910	GW	G	10/23/19	0935				11	X		X	X	X		X			X	X	052
RW-69-201910				1125																053
ITMW-9-201910				1305																054
MW-87-201910				1310																055
MW-58R-201910				1515																056
MW-38-201910				1700																057
DUP-01-201910				1515				3												058
DUP-07-201910				1305				3												059
TMW-16-201910				1515				12		X		X		X	X	X	X			060
TMW-22R-201910				1230																061

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier []

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
JD Pavlowsky / REH	10/23/19 @ 1800		
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

6031915

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #:

Cooler Temp Upon Receipt oC

Cooler Therm Corr. Factor oC

Cooler Temp Corrected oC

Comments:

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 6, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60319115 WHIRLPOOL**
Pace Workorder: 31905

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, October 25, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/06/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 16

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31905 60319115 WHIRLPOOL

Lab ID	Sample ID	Matrix	Date Collected	Date Received
319050001	MW-194-201910	Water	10/23/2019 10:40	10/25/2019 09:50
319050002	MW-61R-201910	Water	10/23/2019 09:10	10/25/2019 09:50
319050003	TMW-26-201910	Water	10/23/2019 17:00	10/25/2019 09:50
319050004	TMW-16-201910	Water	10/23/2019 15:15	10/25/2019 09:50
319050005	TMW-22R-201910	Water	10/23/2019 12:30	10/25/2019 09:50

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31905 60319115 WHIRLPOOL

Sample Comments

Lab ID: 319050004 **Sample ID:** TMW-16-201910 **Sample Type:** N

The analysis for volatile fatty acids, method AM23G, was reported at dilution for sample due to the measured chloride concentration within the sample; matrix interfering compound.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31905 60319115 WHIRLPOOL

Lab ID: **319050001** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-194-201910** Date Collected: 10/23/2019 10:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	10/31/2019 11:29	KB	
Acetic Acid	**1.8**	mg/l	0.10	0.028	1	10/31/2019 11:29	KB	
Propionic Acid	**0.26**	mg/l	0.10	0.0040	1	10/31/2019 11:29	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	10/31/2019 11:29	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	10/31/2019 11:29	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	10/31/2019 11:29	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 11:29	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	10/31/2019 11:29	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 11:29	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	10/31/2019 11:29	KB	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31905 60319115 WHIRLPOOL

Lab ID: **319050002** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-61R-201910** Date Collected: 10/23/2019 09:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	10/31/2019 12:23	KB	
Acetic Acid	**0.34**	mg/l	0.10	0.028	1	10/31/2019 12:23	KB	
Propionic Acid	**0.22**	mg/l	0.10	0.0040	1	10/31/2019 12:23	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	10/31/2019 12:23	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	10/31/2019 12:23	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	10/31/2019 12:23	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 12:23	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	10/31/2019 12:23	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 12:23	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	10/31/2019 12:23	KB	

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31905 60319115 WHIRLPOOL

Lab ID: **319050003** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-26-201910** Date Collected: 10/23/2019 17:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<2.0**	mg/l	2.0	0.43	10	11/2/2019 05:27	KB	d
Acetic Acid	**16**	mg/l	1.0	0.28	10	11/2/2019 05:27	KB	d
Propionic Acid	**110**	mg/l	10	0.40	100	11/2/2019 06:20	KB	d
Formic Acid	**<5.0**	mg/l	5.0	0.86	10	11/2/2019 05:27	KB	d,B
Butyric Acid	**2.7**	mg/l	1.0	0.11	10	11/2/2019 05:27	KB	d
Pyruvic Acid	**0.81**	mg/l	0.10	0.0050	1	10/31/2019 13:16	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 13:16	KB	
Pentanoic Acid	**6.4**	mg/l	0.10	0.0070	1	10/31/2019 13:16	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 13:16	KB	
Hexanoic Acid	**0.36**	mg/l	0.20	0.010	1	10/31/2019 13:16	KB	

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31905 60319115 WHIRLPOOL

Lab ID: **319050004** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-16-201910** Date Collected: 10/23/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<2.0**	mg/l	2.0	0.43	10	10/31/2019 14:09	KB	d
Acetic Acid	**60**	mg/l	10	2.8	100	11/2/2019 07:14	KB	d
Propionic Acid	**560**	mg/l	10	0.40	100	11/2/2019 07:14	KB	d
Formic Acid	**6.7**	mg/l	5.0	0.86	10	10/31/2019 14:09	KB	d
Butyric Acid	**28**	mg/l	1.0	0.11	10	10/31/2019 14:09	KB	d
Pyruvic Acid	**3.1**	mg/l	1.0	0.050	10	10/31/2019 14:09	KB	d
i-Pentanoic Acid	**1.7**	mg/l	1.0	0.060	10	10/31/2019 14:09	KB	d
Pentanoic Acid	**29**	mg/l	1.0	0.070	10	10/31/2019 14:09	KB	d
i-Hexanoic Acid	**<2.0**	mg/l	2.0	0.29	10	10/31/2019 14:09	KB	d
Hexanoic Acid	**<2.0**	mg/l	2.0	0.10	10	10/31/2019 14:09	KB	d

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31905 60319115 WHIRLPOOL

Lab ID: **319050005** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-22R-201910** Date Collected: 10/23/2019 12:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	10/31/2019 15:03	KB	
Acetic Acid	**0.18**	mg/l	0.10	0.028	1	10/31/2019 15:03	KB	
Propionic Acid	**0.10**	mg/l	0.10	0.0040	1	10/31/2019 15:03	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	10/31/2019 15:03	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	10/31/2019 15:03	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	10/31/2019 15:03	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 15:03	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	10/31/2019 15:03	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 15:03	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	10/31/2019 15:03	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31905 60319115 WHIRLPOOL

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
B	The analyte was detected in the associated blank.
d	The analyte concentration was determined from a dilution.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31905 60319115 WHIRLPOOL

QC Batch: EDON/4247 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 319050001, 319050002, 319050003, 319050004, 319050005

METHOD BLANK: 64054

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	
Formic Acid	mg/l	<0.50	0.50	
Butyric Acid	mg/l	<0.10	0.10	
Pyruvic Acid	mg/l	<0.10	0.10	
i-Pentanoic Acid	mg/l	<0.10	0.10	
Pentanoic Acid	mg/l	<0.10	0.10	
i-Hexanoic Acid	mg/l	<0.20	0.20	
Hexanoic Acid	mg/l	<0.20	0.20	

LABORATORY CONTROL SAMPLE: 64055

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	1.9	97	70-130	
Acetic Acid	mg/l	2	1.9	93	70-130	
Propionic Acid	mg/l	2	1.9	97	70-130	
Formic Acid	mg/l	2	2.2	112	70-130	
Butyric Acid	mg/l	2	2.0	100	70-130	
Pyruvic Acid	mg/l	2	1.8	90	70-130	
i-Pentanoic Acid	mg/l	2	2.0	98	70-130	
Pentanoic Acid	mg/l	2	1.9	97	70-130	
i-Hexanoic Acid	mg/l	2	2.0	99	70-130	
Hexanoic Acid	mg/l	2	1.8	92	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64056 64057 Original: 319080001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
EDonors											
Lactic Acid	mg/l	0.032	2	1.8	1.9	90	92	70-130	1.9	30	
Acetic Acid	mg/l	0.032	2	2.0	1.9	96	95	70-130	1.1	30	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31905 60319115 WHIRLPOOL

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64056 64057 Original: 319080001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Propionic Acid	mg/l	0.0053	2	2.0	1.9	98	97	70-130	1.3	30	
Formic Acid	mg/l	0.085	2	2.3	2.0	110	97	70-130	12	30	
Butyric Acid	mg/l	0.0049	2	2.0	2.0	100	98	70-130	1.7	30	
Pyruvic Acid	mg/l	0	2	1.7	1.7	87	87	70-130	0.46	30	
i-Pentanoic Acid	mg/l	0	2	2.0	2.0	100	98	70-130	2.5	30	
Pentanoic Acid	mg/l	0.036	2	2.0	1.9	98	95	70-130	3.6	30	
i-Hexanoic Acid	mg/l	0	2	2.1	2.0	105	98	70-130	6.9	30	
Hexanoic Acid	mg/l	0.0024	2	1.9	1.8	96	90	70-130	6.5	30	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31905 60319115 WHIRLPOOL

QC Batch: EDON/4257 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 319050003, 319050004

METHOD BLANK: 64154

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	
Formic Acid	mg/l	<0.50	0.50	B
Butyric Acid	mg/l	<0.10	0.10	

LABORATORY CONTROL SAMPLE: 64155

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	2.0	98	70-130	
Acetic Acid	mg/l	2	1.9	97	70-130	
Propionic Acid	mg/l	2	2.0	99	70-130	
Formic Acid	mg/l	2	2.3	117	70-130	B
Butyric Acid	mg/l	2	2.0	100	70-130	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31905 60319115 WHIRLPOOL

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
319050001	MW-194-201910			AM23G	EDON/4247
319050002	MW-61R-201910			AM23G	EDON/4247
319050003	TMW-26-201910			AM23G	EDON/4247
319050004	TMW-16-201910			AM23G	EDON/4247
319050005	TMW-22R-201910			AM23G	EDON/4247
319050003	TMW-26-201910			AM23G	EDON/4257
319050004	TMW-16-201910			AM23G	EDON/4257

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Chain of Custody

PASI Kansas Laboratory

31905

Pace Analytical®
www.pacelabs.com

Workorder: 60319115 **Workorder Name:** WHIRLPOOL FORT SMITH, AR **Results Requested By:** 11/5/2019

Report / Invoice To	Subcontract To	
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy	P.O. SUB-10250

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Requested Analysis: Volatile Fatty Acids	LAB USE ONLY
1	MW-194-201910	10/23/2019 10:40	60319115042	Water	2	X	
2	MW-61R-201910	10/23/2019 09:10	60319115043	Water	2	X	
3	TMW-26-201910	10/23/2019 17:00	60319115044	Water	2	X	
4	TMW -16-201910	10/23/2019 15:15	60319115060	Water	2	X	
5	TMW -22R-201910	10/23/2019 12:30	60319115061	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	Holly Fowler pasi	~~10/24~~ 10/24/19 1800	[illegible] PAS	10.25
2				0950
3				

Comments

Send 2 x 40mL BAK vials

Cooler Temperature on Receipt 1 °C	Custody Seal Y or N	Received on Ice Y or N	Samples Intact Y or N

Cooler Receipt Form

Client Name: Pace **Project:** 60319115 **Lab Work Order:** 31905

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ **Air bill Present:** (Yes) No

Tracking Number: 1219 2981 3213

Custody Seal on Cooler/Box Present: Yes (No) **Seals Intact:** Yes No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None **Ice Intact:** (Yes) Melted

Cooler Temperature: 1°C **Radiation Screened:** Yes (No) **Chain of Custody Present:** (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?			✓	

Comments:_____

_____

Cooler contents examined/received by : LG **Date:** 10.25.19

Project Manager Review : ERJ **Date:** 10/25/19

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 11, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on October 25, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60319241001	**TMW-34-201910**	Water	10/24/19 17:30	10/25/19 02:10
60319241002	**TMW-32-201910**	Water	10/24/19 15:15	10/25/19 02:10
60319241003	**MW-186-201910**	Water	10/24/19 13:15	10/25/19 02:10
60319241004	**TMW-25-201910**	Water	10/24/19 10:55	10/25/19 02:10
60319241005	**IW-147-201910**	Water	10/24/19 10:15	10/25/19 02:10
60319241006	**MW-95-201910**	Water	10/24/19 13:05	10/25/19 02:10
60319241007	**MW-83-201910**	Water	10/24/19 10:00	10/25/19 02:10
60319241008	**ITMW-18-201910**	Water	10/24/19 13:00	10/25/19 02:10
60319241009	**ITMW-19-201910**	Water	10/24/19 11:25	10/25/19 02:10
60319241010	**MW-93-201910**	Water	10/24/19 14:35	10/25/19 02:10
60319241011	**MW-189-201910**	Water	10/24/19 09:32	10/25/19 02:10
60319241012	**TMW-36-201910**	Water	10/24/19 10:46	10/25/19 02:10
60319241013	**MW-185-201910**	Water	10/24/19 14:29	10/25/19 02:10
60319241014	**MW-27-201910**	Water	10/24/19 13:15	10/25/19 02:10
60319241015	**ITMW-2R-201910**	Water	10/24/19 10:05	10/25/19 02:10
60319241016	**ITMW-11-201910**	Water	10/24/19 11:55	10/25/19 02:10
60319241017	**ITMW-12R-201910**	Water	10/24/19 16:05	10/25/19 02:10
60319241018	**MW-91-201910**	Water	10/24/19 14:20	10/25/19 02:10
60319241019	**ITMW-21-201910**	Water	10/24/19 09:25	10/25/19 02:10
60319241020	**MW-85R-201910**	Water	10/24/19 10:45	10/25/19 02:10
60319241021	**IW-134-201910**	Water	10/24/19 12:05	10/25/19 02:10
60319241022	**MW-37-201910**	Water	10/24/19 15:30	10/25/19 02:10
60319241023	**ITMW-16-201910**	Water	10/24/19 09:50	10/25/19 02:10
60319241024	**ITMW-10-201910**	Water	10/24/19 11:35	10/25/19 02:10
60319241025	**ITMW-5-201910**	Water	10/24/19 13:05	10/25/19 02:10
60319241026	**IW-132-201910**	Water	10/24/19 15:30	10/25/19 02:10
60319241027	**DUP-08-201910**	Water	10/24/19 09:32	10/25/19 02:10
60319241028	**DUP-09-201910**	Water	10/24/19 10:45	10/25/19 02:10
60319241029	**DUP-10-201910**	Water	10/24/19 09:50	10/25/19 02:10
60319241030	**EB-04-201910**	Water	10/24/19 16:45	10/25/19 02:10
60319241031	**EB-05-201910**	Water	10/24/19 16:50	10/25/19 02:10
60319241032	**MW-179-201910**	Water	10/24/19 15:50	10/25/19 02:10
60319241033	**TB-06-201910**	Water	10/24/19 17:40	10/25/19 02:10
60319241034	**TB-07-201910**	Water	10/24/19 17:45	10/25/19 02:10
60319241035	**TB-08-201910**	Water	10/24/19 17:50	10/25/19 02:10

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60319241001	TMW-34-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	JDS	1	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241002	TMW-32-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	JDS	1	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241003	MW-186-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	JDS	1	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241004	TMW-25-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	JDS	1	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241005	IW-147-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH, WNM	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241006	MW-95-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH, WNM	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241007	MW-83-201910	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60319241008	ITMW-18-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241009	ITMW-19-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241010	MW-93-201910	EPA 5030B/8260	PGH, WNM	38	PASI-K
60319241011	MW-189-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241012	TMW-36-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241013	MW-185-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241014	MW-27-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241015	ITMW-2R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241016	ITMW-11-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241017	ITMW-12R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241018	MW-91-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241019	ITMW-21-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241020	MW-85R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241021	IW-134-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241022	MW-37-201910	EPA 5030B/8260	PGH, WNM	38	PASI-K
60319241023	ITMW-16-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241024	ITMW-10-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241025	ITMW-5-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241026	IW-132-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241027	DUP-08-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241028	DUP-09-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241029	DUP-10-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241030	EB-04-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241031	EB-05-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241032	MW-179-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241033	TB-06-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241034	TB-07-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241035	TB-08-201910	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
6 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
35 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 619619

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 619753

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 619801

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 620343

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 620685

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 11, 2019

Analyte Comments:

QC Batch: 619619

1e: Sample was analyzed at a 5x dilution which resulted in a non-dection. Sample was re-analyzed at a 1x dilution and the result matched the initial run.

- ITMW-19-201910 (Lab ID: 60319241009)
  - Trichloroethene

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- ITMW-19-201910 (Lab ID: 60319241009)
  - Trichloroethene

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
2 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
6 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 unpres
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
2 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 618401

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60319241005

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2523315)
  - Nitrogen, Nitrite

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 pres.
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
4 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 619108

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60319076002,60319190001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2525615)
  - Nitrogen, NO2 plus NO3

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **SM 5310C**
Description: 5310C TOC
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
6 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **SM 5310C**
Description: 5310C Diss. Organic Carbon LF
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
4 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 619520

B: Analyte was detected in the associated method blank.

- BLANK for HBN 619520 [WETA/631 (Lab ID: 2526889)
  - Dissolved Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-34-201910 **Lab ID: 60319241001** Collected: 10/24/19 17:30 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**2110**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:17	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 17:09	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 17:09	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 17:09	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 17:09	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 17:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 17:09	78-93-3	
Carbon disulfide	**0.27J**	ug/L	5.0	0.16	1		11/01/19 17:09	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 17:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 17:09	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 17:09	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 17:09	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 17:09	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 17:09	124-48-1	
1,1-Dichloroethane	**0.14J**	ug/L	1.0	0.097	1		11/01/19 17:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 17:09	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:09	75-35-4	
cis-1,2-Dichloroethene	**6.9**	ug/L	1.0	0.17	1		11/01/19 17:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 17:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 17:09	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 17:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 17:09	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 17:09	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 17:09	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 17:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 17:09	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 17:09	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 17:09	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:09	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 17:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 17:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 17:09	79-00-5	
Trichloroethene	**17.6**	ug/L	1.0	0.17	1		11/01/19 17:09	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 17:09	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 17:09	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/01/19 17:09	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/01/19 17:09	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/01/19 17:09	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 17:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**26.0**	mg/L	2.0	0.44	2		11/07/19 03:38	16887-00-6	
Sulfate	**10.4**	mg/L	1.0	0.23	1		11/07/19 02:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-34-201910 **Lab ID: 60319241001** Collected: 10/24/19 17:30 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.0**	mg/L	0.10	0.038	1		10/30/19 10:00		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.56J**	mg/L	1.0	0.29	1		11/01/19 17:09	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**6.5**	mg/L	1.0	0.29	1		11/01/19 01:26		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-32-201910 **Lab ID: 60319241002** Collected: 10/24/19 15:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**12500**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:24	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 17:52	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 17:52	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 17:52	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 17:52	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 17:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 17:52	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 17:52	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 17:52	56-23-5	
Chlorobenzene	**2.7**	ug/L	1.0	0.13	1		11/01/19 17:52	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 17:52	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 17:52	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 17:52	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 17:52	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 17:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 17:52	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:52	75-35-4	
cis-1,2-Dichloroethene	**21.0**	ug/L	1.0	0.17	1		11/01/19 17:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 17:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 17:52	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 17:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 17:52	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 17:52	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 17:52	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 17:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 17:52	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 17:52	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 17:52	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:52	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 17:52	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 17:52	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 17:52	79-00-5	
Trichloroethene	**29.2**	ug/L	1.0	0.17	1		11/01/19 17:52	79-01-6	
Vinyl chloride	**0.13J**	ug/L	1.0	0.11	1		11/01/19 17:52	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 17:52	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/01/19 17:52	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/01/19 17:52	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 17:52	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 17:52		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**110**	mg/L	10.0	2.2	10		11/05/19 19:08	16887-00-6	
Sulfate	**27.2**	mg/L	2.0	0.46	2		11/07/19 04:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-32-201910 **Lab ID: 60319241002** Collected: 10/24/19 15:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.056J**	mg/L	0.10	0.038	1		10/30/19 10:01		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.2**	mg/L	1.0	0.29	1		11/01/19 17:35	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**1.3**	mg/L	1.0	0.29	1		11/01/19 01:40		B

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-186-201910 **Lab ID: 60319241003** Collected: 10/24/19 13:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**39400**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:26	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 18:34	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 18:34	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 18:34	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 18:34	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 18:34	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 18:34	78-93-3	
Carbon disulfide	**0.81J**	ug/L	5.0	0.16	1		11/01/19 18:34	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 18:34	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 18:34	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 18:34	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 18:34	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 18:34	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 18:34	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 18:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 18:34	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 18:34	75-35-4	
cis-1,2-Dichloroethene	**3.0**	ug/L	1.0	0.17	1		11/01/19 18:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 18:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 18:34	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 18:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 18:34	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 18:34	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 18:34	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 18:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	**0.68J**	ug/L	10.0	0.56	1		11/01/19 18:34	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 18:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 18:34	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 18:34	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 18:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 18:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 18:34	79-00-5	
Trichloroethene	**2.9**	ug/L	1.0	0.17	1		11/01/19 18:34	79-01-6	
Vinyl chloride	**2.2**	ug/L	1.0	0.11	1		11/01/19 18:34	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 18:34	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/01/19 18:34	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/01/19 18:34	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 18:34	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 18:34		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**155**	mg/L	10.0	2.2	10		11/05/19 19:41	16887-00-6	
Sulfate	**6.5**	mg/L	1.0	0.23	1		11/07/19 04:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-186-201910 **Lab ID: 60319241003** Collected: 10/24/19 13:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.16**	mg/L	0.10	0.038	1		10/30/19 10:03		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**40.1**	mg/L	10.0	2.9	10		11/01/19 17:49	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**34.1**	mg/L	10.0	2.9	10		11/01/19 23:22		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-25-201910 **Lab ID: 60319241004** Collected: 10/24/19 10:55 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**23600**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:29	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 17:23	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 17:23	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 17:23	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 17:23	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 17:23	74-83-9	
2-Butanone (MEK)	**15.8**	ug/L	10.0	0.70	1		11/01/19 17:23	78-93-3	
Carbon disulfide	**0.31J**	ug/L	5.0	0.16	1		11/01/19 17:23	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 17:23	56-23-5	
Chlorobenzene	**5.3**	ug/L	1.0	0.13	1		11/01/19 17:23	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 17:23	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 17:23	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 17:23	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 17:23	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 17:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 17:23	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:23	75-35-4	
cis-1,2-Dichloroethene	**39.9**	ug/L	1.0	0.17	1		11/01/19 17:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 17:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 17:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 17:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 17:23	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 17:23	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 17:23	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 17:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 17:23	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 17:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 17:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:23	127-18-4	
Toluene	**0.15J**	ug/L	1.0	0.14	1		11/01/19 17:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 17:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 17:23	79-00-5	
Trichloroethene	**23.6**	ug/L	1.0	0.17	1		11/01/19 17:23	79-01-6	
Vinyl chloride	**0.41J**	ug/L	1.0	0.11	1		11/01/19 17:23	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 17:23	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/01/19 17:23	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/01/19 17:23	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/01/19 17:23	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 17:23		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**149**	mg/L	10.0	2.2	10		11/05/19 20:14	16887-00-6	
Sulfate	**19.2**	mg/L	2.0	0.46	2		11/07/19 05:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-25-201910 **Lab ID: 60319241004** Collected: 10/24/19 10:55 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.3**	mg/L	0.10	0.038	1		10/30/19 10:04		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**43.4**	mg/L	10.0	2.9	10		11/01/19 18:02	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**39.3**	mg/L	10.0	2.9	10		11/02/19 00:02		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: IW-147-201910 **Lab ID: 60319241005** Collected: 10/24/19 10:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**50.0J**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:31	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	7.4	1		11/06/19 16:29	67-64-1	
Benzene	**0.49J**	ug/L	1.0	0.13	1		11/06/19 16:29	71-43-2	
Bromodichloromethane	**1.5**	ug/L	1.0	0.14	1		11/06/19 16:29	75-27-4	
Bromoform	**4.5**	ug/L	1.0	0.28	1		11/06/19 16:29	75-25-2	
Bromomethane	ND	ug/L	5.0	2.8	1		11/06/19 16:29	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1.8	1		11/06/19 16:29	78-93-3	
Carbon disulfide	**0.69J**	ug/L	5.0	0.086	1		11/06/19 16:29	75-15-0	
Carbon tetrachloride	**1.4**	ug/L	1.0	0.070	1		11/06/19 16:29	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.17	1		11/06/19 16:29	108-90-7	
Chloroethane	ND	ug/L	1.0	0.83	1		11/06/19 16:29	75-00-3	
Chloroform	**20.2**	ug/L	1.0	0.25	1		11/06/19 16:29	67-66-3	
Chloromethane	**2.4**	ug/L	1.0	0.51	1		11/06/19 16:29	74-87-3	
Dibromochloromethane	**0.59J**	ug/L	1.0	0.15	1		11/06/19 16:29	124-48-1	
1,1-Dichloroethane	**2.5**	ug/L	1.0	0.12	1		11/06/19 16:29	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.33	1		11/06/19 16:29	107-06-2	
1,1-Dichloroethene	**90.4**	ug/L	1.0	0.14	1		11/06/19 16:29	75-35-4	
cis-1,2-Dichloroethene	**5420**	ug/L	2000	340	2000		11/01/19 19:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2000	340	2000		11/01/19 19:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		11/06/19 16:29	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 16:29	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 16:29	10061-02-6	
Ethylbenzene	**0.20J**	ug/L	1.0	0.20	1		11/06/19 16:29	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.6	1		11/06/19 16:29	591-78-6	
Methylene Chloride	**4.8**	ug/L	1.0	0.35	1		11/06/19 16:29	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1.3	1		11/06/19 16:29	108-10-1	
Styrene	ND	ug/L	1.0	0.19	1		11/06/19 16:29	100-42-5	
1,1,2,2-Tetrachloroethane	**44.4**	ug/L	1.0	0.23	1		11/06/19 16:29	79-34-5	
Tetrachloroethene	**42.5**	ug/L	1.0	0.14	1		11/06/19 16:29	127-18-4	
Toluene	**5.3**	ug/L	1.0	0.17	1		11/06/19 16:29	108-88-3	
1,1,1-Trichloroethane	**76.8**	ug/L	1.0	0.12	1		11/06/19 16:29	71-55-6	
1,1,2-Trichloroethane	**3.5**	ug/L	1.0	0.10	1		11/06/19 16:29	79-00-5	
Trichloroethene	**95800**	ug/L	2000	340	2000		11/01/19 19:03	79-01-6	
Vinyl chloride	**376J**	ug/L	2000	220	2000		11/01/19 19:03	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		11/06/19 16:29	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	95	%	80-120		1		11/06/19 16:29	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	77-122		1		11/06/19 16:29	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/06/19 16:29	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/06/19 16:29		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/30/19 14:44	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: IW-147-201910 **Lab ID: 60319241005** Collected: 10/24/19 10:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**669**	mg/L	50.0	11.5	50		11/08/19 17:13	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.20**	mg/L	0.10	0.038	1		10/25/19 15:28		
Nitrogen, Nitrate	**0.20**	mg/L	0.10	0.067	1		10/25/19 15:28	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/25/19 15:28	14797-65-0	M1
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.0**	mg/L	1.0	0.29	1		11/01/19 18:42	7440-44-0	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-95-201910 **Lab ID: 60319241006** Collected: 10/24/19 13:05 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**19.1J**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:33	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	7.4	1		11/06/19 16:43	67-64-1	
Benzene	ND	ug/L	1.0	0.13	1		11/06/19 16:43	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.14	1		11/06/19 16:43	75-27-4	
Bromoform	ND	ug/L	1.0	0.28	1		11/06/19 16:43	75-25-2	
Bromomethane	ND	ug/L	5.0	2.8	1		11/06/19 16:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1.8	1		11/06/19 16:43	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.086	1		11/06/19 16:43	75-15-0	
Carbon tetrachloride	**0.26J**	ug/L	1.0	0.070	1		11/06/19 16:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.17	1		11/06/19 16:43	108-90-7	
Chloroethane	ND	ug/L	1.0	0.83	1		11/06/19 16:43	75-00-3	
Chloroform	**5.4**	ug/L	1.0	0.25	1		11/06/19 16:43	67-66-3	
Chloromethane	ND	ug/L	1.0	0.51	1		11/06/19 16:43	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/06/19 16:43	124-48-1	
1,1-Dichloroethane	**0.50J**	ug/L	1.0	0.12	1		11/06/19 16:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.33	1		11/06/19 16:43	107-06-2	
1,1-Dichloroethene	**23.5**	ug/L	1.0	0.14	1		11/06/19 16:43	75-35-4	
cis-1,2-Dichloroethene	**265**	ug/L	200	34.0	200		11/01/19 18:48	156-59-2	
trans-1,2-Dichloroethene	**30.5**	ug/L	1.0	0.082	1		11/06/19 16:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		11/06/19 16:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 16:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 16:43	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.20	1		11/06/19 16:43	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.6	1		11/06/19 16:43	591-78-6	
Methylene Chloride	**2.3**	ug/L	1.0	0.35	1		11/06/19 16:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1.3	1		11/06/19 16:43	108-10-1	
Styrene	ND	ug/L	1.0	0.19	1		11/06/19 16:43	100-42-5	
1,1,2,2-Tetrachloroethane	**1.0**	ug/L	1.0	0.23	1		11/06/19 16:43	79-34-5	
Tetrachloroethene	**8.1**	ug/L	1.0	0.14	1		11/06/19 16:43	127-18-4	
Toluene	ND	ug/L	1.0	0.17	1		11/06/19 16:43	108-88-3	
1,1,1-Trichloroethane	**2.1**	ug/L	1.0	0.12	1		11/06/19 16:43	71-55-6	
1,1,2-Trichloroethane	**1.8**	ug/L	1.0	0.10	1		11/06/19 16:43	79-00-5	
Trichloroethene	**24700**	ug/L	200	34.0	200		11/01/19 18:48	79-01-6	
Vinyl chloride	**25.9**	ug/L	1.0	0.17	1		11/06/19 16:43	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		11/06/19 16:43	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	92	%	80-120		1		11/06/19 16:43	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/06/19 16:43	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/06/19 16:43	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/06/19 16:43		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/30/19 14:45	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-95-201910 **Lab ID: 60319241006** Collected: 10/24/19 13:05 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**24.4**	mg/L	2.0	0.46	2		11/07/19 05:51	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.97**	mg/L	0.10	0.038	1		10/25/19 15:29		
Nitrogen, Nitrate	**0.97**	mg/L	0.10	0.067	1		10/25/19 15:29	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/25/19 15:29	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	ND	mg/L	1.0	0.29	1		11/01/19 18:55	7440-44-0	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-83-201910 **Lab ID: 60319241007** Collected: 10/24/19 10:00 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 17:37	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 17:37	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 17:37	75-27-4	
Bromoform	**2.6**	ug/L	1.0	0.21	1		11/01/19 17:37	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 17:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 17:37	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 17:37	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 17:37	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 17:37	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 17:37	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 17:37	67-66-3	
Chloromethane	**0.18J**	ug/L	1.0	0.16	1		11/01/19 17:37	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 17:37	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 17:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 17:37	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:37	75-35-4	
cis-1,2-Dichloroethene	**0.85J**	ug/L	1.0	0.17	1		11/01/19 17:37	156-59-2	
trans-1,2-Dichloroethene	**0.19J**	ug/L	1.0	0.17	1		11/01/19 17:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 17:37	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 17:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 17:37	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 17:37	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 17:37	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 17:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 17:37	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 17:37	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 17:37	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:37	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 17:37	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 17:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 17:37	79-00-5	
Trichloroethene	**41.9**	ug/L	1.0	0.17	1		11/01/19 17:37	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 17:37	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 17:37	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		11/01/19 17:37	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/01/19 17:37	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		11/01/19 17:37	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 17:37		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-18-201910 **Lab ID: 60319241008** Collected: 10/24/19 13:00 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 18:20	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 18:20	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 18:20	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 18:20	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 18:20	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 18:20	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 18:20	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 18:20	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 18:20	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 18:20	75-00-3	
Chloroform	**0.38J**	ug/L	1.0	0.10	1		11/01/19 18:20	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 18:20	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 18:20	124-48-1	
1,1-Dichloroethane	**0.32J**	ug/L	1.0	0.097	1		11/01/19 18:20	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 18:20	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 18:20	75-35-4	
cis-1,2-Dichloroethene	**68.4**	ug/L	1.0	0.17	1		11/01/19 18:20	156-59-2	
trans-1,2-Dichloroethene	**12.4**	ug/L	1.0	0.17	1		11/01/19 18:20	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 18:20	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 18:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 18:20	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 18:20	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 18:20	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 18:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 18:20	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 18:20	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 18:20	79-34-5	
Tetrachloroethene	**0.30J**	ug/L	1.0	0.22	1		11/01/19 18:20	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 18:20	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 18:20	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 18:20	79-00-5	
Trichloroethene	**769**	ug/L	10.0	1.7	10		11/05/19 16:50	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 18:20	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 18:20	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/01/19 18:20	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	77-122		1		11/01/19 18:20	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		11/01/19 18:20	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 18:20		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-19-201910 **Lab ID: 60319241009** Collected: 10/24/19 11:25 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 18:06	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 18:06	71-43-2	
Bromodichloromethane	**0.49J**	ug/L	1.0	0.17	1		11/01/19 18:06	75-27-4	
Bromoform	**6.3**	ug/L	1.0	0.21	1		11/01/19 18:06	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 18:06	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 18:06	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 18:06	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 18:06	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 18:06	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 18:06	75-00-3	
Chloroform	**1.3**	ug/L	1.0	0.10	1		11/01/19 18:06	67-66-3	
Chloromethane	**1.3**	ug/L	1.0	0.16	1		11/01/19 18:06	74-87-3	
Dibromochloromethane	**0.70J**	ug/L	1.0	0.15	1		11/01/19 18:06	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 18:06	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 18:06	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 18:06	75-35-4	
cis-1,2-Dichloroethene	**1.8**	ug/L	1.0	0.17	1		11/01/19 18:06	156-59-2	
trans-1,2-Dichloroethene	**0.41J**	ug/L	1.0	0.17	1		11/01/19 18:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 18:06	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 18:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 18:06	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 18:06	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 18:06	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 18:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 18:06	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 18:06	100-42-5	
1,1,2,2-Tetrachloroethane	**0.69J**	ug/L	1.0	0.31	1		11/01/19 18:06	79-34-5	
Tetrachloroethene	**0.49J**	ug/L	1.0	0.22	1		11/01/19 18:06	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 18:06	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 18:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 18:06	79-00-5	
Trichloroethene	**240**	ug/L	1.0	0.17	1		11/01/19 18:06	79-01-6	1e,E
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 18:06	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 18:06	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/01/19 18:06	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/01/19 18:06	17060-07-0	
Toluene-d8 (S)	86	%	80-120		1		11/01/19 18:06	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 18:06		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-93-201910 **Lab ID: 60319241010** Collected: 10/24/19 14:35 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	7.4	1		11/06/19 16:57	67-64-1	
Benzene	ND	ug/L	1.0	0.13	1		11/06/19 16:57	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.14	1		11/06/19 16:57	75-27-4	
Bromoform	**0.65J**	ug/L	1.0	0.28	1		11/06/19 16:57	75-25-2	
Bromomethane	ND	ug/L	5.0	2.8	1		11/06/19 16:57	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1.8	1		11/06/19 16:57	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.086	1		11/06/19 16:57	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.070	1		11/06/19 16:57	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.17	1		11/06/19 16:57	108-90-7	
Chloroethane	ND	ug/L	1.0	0.83	1		11/06/19 16:57	75-00-3	
Chloroform	**2.9**	ug/L	1.0	0.25	1		11/06/19 16:57	67-66-3	
Chloromethane	ND	ug/L	1.0	0.51	1		11/06/19 16:57	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/06/19 16:57	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.12	1		11/06/19 16:57	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.33	1		11/06/19 16:57	107-06-2	
1,1-Dichloroethene	**11.9**	ug/L	1.0	0.14	1		11/06/19 16:57	75-35-4	
cis-1,2-Dichloroethene	**93.2**	ug/L	1.0	0.18	1		11/06/19 16:57	156-59-2	
trans-1,2-Dichloroethene	**8.7**	ug/L	1.0	0.082	1		11/06/19 16:57	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		11/06/19 16:57	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 16:57	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 16:57	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.20	1		11/06/19 16:57	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.6	1		11/06/19 16:57	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.35	1		11/06/19 16:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1.3	1		11/06/19 16:57	108-10-1	
Styrene	ND	ug/L	1.0	0.19	1		11/06/19 16:57	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.23	1		11/06/19 16:57	79-34-5	
Tetrachloroethene	**4.2**	ug/L	1.0	0.14	1		11/06/19 16:57	127-18-4	
Toluene	**0.18J**	ug/L	1.0	0.17	1		11/06/19 16:57	108-88-3	
1,1,1-Trichloroethane	**0.39J**	ug/L	1.0	0.12	1		11/06/19 16:57	71-55-6	
1,1,2-Trichloroethane	**0.79J**	ug/L	1.0	0.10	1		11/06/19 16:57	79-00-5	
Trichloroethene	**14700**	ug/L	200	34.0	200		11/04/19 13:50	79-01-6	
Vinyl chloride	**2.1**	ug/L	1.0	0.17	1		11/06/19 16:57	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		11/06/19 16:57	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	90	%	80-120		1		11/06/19 16:57	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	77-122		1		11/06/19 16:57	17060-07-0	
Toluene-d8 (S)	104	%	80-120		1		11/06/19 16:57	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/06/19 16:57		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-189-201910 **Lab ID: 60319241011** Collected: 10/24/19 09:32 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 10:59	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 10:59	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 10:59	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 10:59	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 10:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 10:59	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 10:59	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 10:59	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 10:59	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 10:59	75-00-3	
Chloroform	**0.23J**	ug/L	1.0	0.10	1		11/04/19 10:59	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 10:59	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 10:59	124-48-1	
1,1-Dichloroethane	**0.84J**	ug/L	1.0	0.097	1		11/04/19 10:59	75-34-3	
1,2-Dichloroethane	**0.15J**	ug/L	1.0	0.14	1		11/04/19 10:59	107-06-2	
1,1-Dichloroethene	**1.2**	ug/L	1.0	0.22	1		11/04/19 10:59	75-35-4	
cis-1,2-Dichloroethene	**8.9**	ug/L	1.0	0.17	1		11/04/19 10:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 10:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 10:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 10:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 10:59	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 10:59	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 10:59	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 10:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 10:59	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 10:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 10:59	79-34-5	
Tetrachloroethene	**0.23J**	ug/L	1.0	0.22	1		11/04/19 10:59	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 10:59	108-88-3	
1,1,1-Trichloroethane	**0.18J**	ug/L	1.0	0.12	1		11/04/19 10:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 10:59	79-00-5	
Trichloroethene	**510**	ug/L	10.0	1.7	10		11/05/19 17:05	79-01-6	
Vinyl chloride	**0.47J**	ug/L	1.0	0.11	1		11/04/19 10:59	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 10:59	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/04/19 10:59	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/04/19 10:59	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 10:59	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 10:59		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-36-201910 **Lab ID: 60319241012** Collected: 10/24/19 10:46 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 12:39	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 12:39	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 12:39	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 12:39	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 12:39	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 12:39	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 12:39	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 12:39	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 12:39	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 12:39	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 12:39	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 12:39	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 12:39	124-48-1	
1,1-Dichloroethane	**0.99J**	ug/L	1.0	0.097	1		11/04/19 12:39	75-34-3	
1,2-Dichloroethane	**0.14J**	ug/L	1.0	0.14	1		11/04/19 12:39	107-06-2	
1,1-Dichloroethene	**1.1**	ug/L	1.0	0.22	1		11/04/19 12:39	75-35-4	
cis-1,2-Dichloroethene	**8.4**	ug/L	1.0	0.17	1		11/04/19 12:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 12:39	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 12:39	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 12:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 12:39	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 12:39	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 12:39	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 12:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 12:39	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 12:39	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 12:39	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 12:39	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 12:39	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 12:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 12:39	79-00-5	
Trichloroethene	**389**	ug/L	5.0	0.85	5		11/04/19 12:53	79-01-6	
Vinyl chloride	**0.31J**	ug/L	1.0	0.11	1		11/04/19 12:39	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 12:39	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/04/19 12:39	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/04/19 12:39	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 12:39	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 12:39		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-185-201910 **Lab ID: 60319241013** Collected: 10/24/19 14:29 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 08:08	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 08:08	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 08:08	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 08:08	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 08:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 08:08	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 08:08	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 08:08	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 08:08	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 08:08	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 08:08	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 08:08	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 08:08	124-48-1	
1,1-Dichloroethane	**0.27J**	ug/L	1.0	0.097	1		11/04/19 08:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 08:08	107-06-2	
1,1-Dichloroethene	**0.67J**	ug/L	1.0	0.22	1		11/04/19 08:08	75-35-4	
cis-1,2-Dichloroethene	**6.3**	ug/L	1.0	0.17	1		11/04/19 08:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 08:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 08:08	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 08:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 08:08	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 08:08	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 08:08	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 08:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 08:08	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 08:08	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 08:08	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 08:08	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 08:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 08:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 08:08	79-00-5	
Trichloroethene	**52.7**	ug/L	1.0	0.17	1		11/04/19 08:08	79-01-6	
Vinyl chloride	**0.12J**	ug/L	1.0	0.11	1		11/04/19 08:08	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 08:08	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/04/19 08:08	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/04/19 08:08	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		11/04/19 08:08	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 08:08		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-27-201910 **Lab ID: 60319241014** Collected: 10/24/19 13:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 08:22	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 08:22	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 08:22	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 08:22	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 08:22	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 08:22	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 08:22	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 08:22	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 08:22	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 08:22	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 08:22	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 08:22	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 08:22	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 08:22	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 08:22	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/04/19 08:22	75-35-4	
cis-1,2-Dichloroethene	**0.40J**	ug/L	1.0	0.17	1		11/04/19 08:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 08:22	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 08:22	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 08:22	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 08:22	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 08:22	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 08:22	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 08:22	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 08:22	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 08:22	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 08:22	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 08:22	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 08:22	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 08:22	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 08:22	79-00-5	
Trichloroethene	**1.9**	ug/L	1.0	0.17	1		11/04/19 08:22	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 08:22	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 08:22	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/04/19 08:22	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	77-122		1		11/04/19 08:22	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 08:22	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 08:22		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-2R-201910 **Lab ID: 60319241015** Collected: 10/24/19 10:05 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 09:19	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 09:19	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 09:19	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 09:19	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 09:19	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 09:19	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 09:19	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 09:19	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 09:19	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 09:19	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 09:19	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 09:19	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 09:19	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 09:19	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 09:19	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/04/19 09:19	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 09:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 09:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 09:19	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 09:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 09:19	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 09:19	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 09:19	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 09:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 09:19	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 09:19	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 09:19	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 09:19	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 09:19	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 09:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 09:19	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 09:19	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 09:19	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 09:19	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/04/19 09:19	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	77-122		1		11/04/19 09:19	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/04/19 09:19	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 09:19		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-11-201910 **Lab ID: 60319241016** Collected: 10/24/19 11:55 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**27.4**	ug/L	10.0	3.3	1		11/04/19 11:13	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 11:13	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 11:13	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 11:13	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 11:13	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 11:13	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 11:13	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 11:13	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 11:13	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 11:13	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 11:13	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 11:13	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 11:13	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 11:13	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 11:13	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/04/19 11:13	75-35-4	
cis-1,2-Dichloroethene	**0.39J**	ug/L	1.0	0.17	1		11/04/19 11:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 11:13	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 11:13	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 11:13	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 11:13	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 11:13	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 11:13	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 11:13	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 11:13	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 11:13	100-42-5	
1,1,2,2-Tetrachloroethane	**1.4**	ug/L	1.0	0.31	1		11/04/19 11:13	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 11:13	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 11:13	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 11:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 11:13	79-00-5	
Trichloroethene	**9.9**	ug/L	1.0	0.17	1		11/05/19 15:11	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 11:13	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 11:13	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/04/19 11:13	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/04/19 11:13	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/04/19 11:13	2037-26-5	
Preservation pH	**3.0**		0.10	0.10	1		11/04/19 11:13		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-12R-201910 **Lab ID: 60319241017** Collected: 10/24/19 16:05 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 09:33	67-64-1	
Benzene	**0.27J**	ug/L	1.0	0.079	1		11/04/19 09:33	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 09:33	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 09:33	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 09:33	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 09:33	78-93-3	
Carbon disulfide	**0.44J**	ug/L	5.0	0.16	1		11/04/19 09:33	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 09:33	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 09:33	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 09:33	75-00-3	
Chloroform	**1.9**	ug/L	1.0	0.10	1		11/04/19 09:33	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 09:33	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 09:33	124-48-1	
1,1-Dichloroethane	**1.0**	ug/L	1.0	0.097	1		11/04/19 09:33	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 09:33	107-06-2	
1,1-Dichloroethene	**12.9**	ug/L	1.0	0.22	1		11/04/19 09:33	75-35-4	
cis-1,2-Dichloroethene	**275**	ug/L	100	17.0	100		11/05/19 17:48	156-59-2	
trans-1,2-Dichloroethene	**1.2**	ug/L	1.0	0.17	1		11/04/19 09:33	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 09:33	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 09:33	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 09:33	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 09:33	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 09:33	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 09:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 09:33	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 09:33	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 09:33	79-34-5	
Tetrachloroethene	**2.9**	ug/L	1.0	0.22	1		11/04/19 09:33	127-18-4	
Toluene	**0.15J**	ug/L	1.0	0.14	1		11/04/19 09:33	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 09:33	71-55-6	
1,1,2-Trichloroethane	**0.95J**	ug/L	1.0	0.10	1		11/04/19 09:33	79-00-5	
Trichloroethene	**11800**	ug/L	100	17.0	100		11/05/19 17:48	79-01-6	
Vinyl chloride	**7.1**	ug/L	1.0	0.11	1		11/04/19 09:33	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 09:33	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/04/19 09:33	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/04/19 09:33	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 09:33	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 09:33		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-91-201910 **Lab ID: 60319241018** Collected: 10/24/19 14:20 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 13:07	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 13:07	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 13:07	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 13:07	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 13:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 13:07	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 13:07	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 13:07	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 13:07	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 13:07	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 13:07	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 13:07	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 13:07	124-48-1	
1,1-Dichloroethane	**1.2**	ug/L	1.0	0.097	1		11/04/19 13:07	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 13:07	107-06-2	
1,1-Dichloroethene	**3.4**	ug/L	1.0	0.22	1		11/04/19 13:07	75-35-4	
cis-1,2-Dichloroethene	**26.8**	ug/L	1.0	0.17	1		11/04/19 13:07	156-59-2	
trans-1,2-Dichloroethene	**0.47J**	ug/L	1.0	0.17	1		11/04/19 13:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 13:07	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 13:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 13:07	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 13:07	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 13:07	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 13:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 13:07	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 13:07	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 13:07	79-34-5	
Tetrachloroethene	**3.4**	ug/L	1.0	0.22	1		11/04/19 13:07	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 13:07	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 13:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 13:07	79-00-5	
Trichloroethene	**437**	ug/L	10.0	1.7	10		11/04/19 13:21	79-01-6	
Vinyl chloride	**0.18J**	ug/L	1.0	0.11	1		11/04/19 13:07	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 13:07	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/04/19 13:07	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		11/04/19 13:07	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/04/19 13:07	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 13:07		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-21-201910 **Lab ID: 60319241019** Collected: 10/24/19 09:25 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 08:36	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 08:36	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 08:36	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 08:36	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 08:36	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 08:36	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 08:36	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 08:36	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 08:36	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 08:36	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 08:36	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 08:36	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 08:36	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 08:36	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 08:36	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/04/19 08:36	75-35-4	
cis-1,2-Dichloroethene	**0.30J**	ug/L	1.0	0.17	1		11/04/19 08:36	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 08:36	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 08:36	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 08:36	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 08:36	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 08:36	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 08:36	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 08:36	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 08:36	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 08:36	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 08:36	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 08:36	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 08:36	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 08:36	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 08:36	79-00-5	
Trichloroethene	**6.0**	ug/L	1.0	0.17	1		11/04/19 08:36	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 08:36	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 08:36	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/04/19 08:36	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/04/19 08:36	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/04/19 08:36	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 08:36		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-85R-201910 **Lab ID: 60319241020** Collected: 10/24/19 10:45 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 10:44	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 10:44	71-43-2	
Bromodichloromethane	**0.43J**	ug/L	1.0	0.17	1		11/04/19 10:44	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 10:44	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 10:44	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 10:44	78-93-3	
Carbon disulfide	**10.0**	ug/L	5.0	0.16	1		11/04/19 10:44	75-15-0	
Carbon tetrachloride	**2.1**	ug/L	1.0	0.084	1		11/04/19 10:44	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 10:44	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 10:44	75-00-3	
Chloroform	**12.4**	ug/L	1.0	0.10	1		11/04/19 10:44	67-66-3	
Chloromethane	**0.79J**	ug/L	1.0	0.16	1		11/04/19 10:44	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 10:44	124-48-1	
1,1-Dichloroethane	**7.6**	ug/L	1.0	0.097	1		11/04/19 10:44	75-34-3	
1,2-Dichloroethane	**0.17J**	ug/L	1.0	0.14	1		11/04/19 10:44	107-06-2	
1,1-Dichloroethene	**80.6**	ug/L	1.0	0.22	1		11/04/19 10:44	75-35-4	
cis-1,2-Dichloroethene	**103**	ug/L	1.0	0.17	1		11/04/19 10:44	156-59-2	
trans-1,2-Dichloroethene	**10.9**	ug/L	1.0	0.17	1		11/04/19 10:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 10:44	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 10:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 10:44	10061-02-6	
Ethylbenzene	**0.23J**	ug/L	1.0	0.12	1		11/04/19 10:44	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 10:44	591-78-6	
Methylene Chloride	**1.8**	ug/L	1.0	0.27	1		11/04/19 10:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 10:44	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 10:44	100-42-5	
1,1,2,2-Tetrachloroethane	**4.2**	ug/L	1.0	0.31	1		11/04/19 10:44	79-34-5	
Tetrachloroethene	**8.7**	ug/L	1.0	0.22	1		11/04/19 10:44	127-18-4	
Toluene	**5.3**	ug/L	1.0	0.14	1		11/04/19 10:44	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	2000	240	2000		11/05/19 18:02	71-55-6	
1,1,2-Trichloroethane	**2.9**	ug/L	1.0	0.10	1		11/04/19 10:44	79-00-5	
Trichloroethene	**68300**	ug/L	2000	340	2000		11/05/19 18:02	79-01-6	
Vinyl chloride	**4.5**	ug/L	1.0	0.11	1		11/04/19 10:44	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 10:44	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/04/19 10:44	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		11/04/19 10:44	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/04/19 10:44	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 10:44		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: IW-134-201910 **Lab ID: 60319241021** Collected: 10/24/19 12:05 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 09:47	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 09:47	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 09:47	75-27-4	
Bromoform	**6.0**	ug/L	1.0	0.21	1		11/04/19 09:47	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 09:47	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 09:47	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 09:47	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 09:47	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 09:47	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 09:47	75-00-3	
Chloroform	**0.15J**	ug/L	1.0	0.10	1		11/04/19 09:47	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 09:47	74-87-3	
Dibromochloromethane	**0.26J**	ug/L	1.0	0.15	1		11/04/19 09:47	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 09:47	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 09:47	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/04/19 09:47	75-35-4	
cis-1,2-Dichloroethene	**9.9**	ug/L	1.0	0.17	1		11/04/19 09:47	156-59-2	
trans-1,2-Dichloroethene	**1.5**	ug/L	1.0	0.17	1		11/04/19 09:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 09:47	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 09:47	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 09:47	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 09:47	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 09:47	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 09:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 09:47	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 09:47	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 09:47	79-34-5	
Tetrachloroethene	**0.28J**	ug/L	1.0	0.22	1		11/04/19 09:47	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 09:47	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 09:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 09:47	79-00-5	
Trichloroethene	**1090**	ug/L	20.0	3.4	20		11/05/19 17:33	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 09:47	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 09:47	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/04/19 09:47	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		11/04/19 09:47	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 09:47	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 09:47		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-37-201910 **Lab ID: 60319241022** Collected: 10/24/19 15:30 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	7.4	1		11/06/19 17:11	67-64-1	
Benzene	**0.15J**	ug/L	1.0	0.13	1		11/06/19 17:11	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.14	1		11/06/19 17:11	75-27-4	
Bromoform	**0.64J**	ug/L	1.0	0.28	1		11/06/19 17:11	75-25-2	
Bromomethane	ND	ug/L	5.0	2.8	1		11/06/19 17:11	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1.8	1		11/06/19 17:11	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.086	1		11/06/19 17:11	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.070	1		11/06/19 17:11	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.17	1		11/06/19 17:11	108-90-7	
Chloroethane	ND	ug/L	1.0	0.83	1		11/06/19 17:11	75-00-3	
Chloroform	**2.1**	ug/L	1.0	0.25	1		11/06/19 17:11	67-66-3	
Chloromethane	**0.89J**	ug/L	1.0	0.51	1		11/06/19 17:11	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/06/19 17:11	124-48-1	
1,1-Dichloroethane	**2.2**	ug/L	1.0	0.12	1		11/06/19 17:11	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.33	1		11/06/19 17:11	107-06-2	
1,1-Dichloroethene	**6.2**	ug/L	1.0	0.14	1		11/06/19 17:11	75-35-4	
cis-1,2-Dichloroethene	**1950**	ug/L	100	17.0	100		11/04/19 13:36	156-59-2	
trans-1,2-Dichloroethene	**32.7**	ug/L	1.0	0.082	1		11/06/19 17:11	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		11/06/19 17:11	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 17:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		11/06/19 17:11	10061-02-6	
Ethylbenzene	**0.74J**	ug/L	1.0	0.20	1		11/06/19 17:11	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.6	1		11/06/19 17:11	591-78-6	
Methylene Chloride	**5.8**	ug/L	1.0	0.35	1		11/06/19 17:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1.3	1		11/06/19 17:11	108-10-1	
Styrene	ND	ug/L	1.0	0.19	1		11/06/19 17:11	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.23	1		11/06/19 17:11	79-34-5	
Tetrachloroethene	**6.4**	ug/L	1.0	0.14	1		11/06/19 17:11	127-18-4	
Toluene	**7.0**	ug/L	1.0	0.17	1		11/06/19 17:11	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/06/19 17:11	71-55-6	
1,1,2-Trichloroethane	**0.48J**	ug/L	1.0	0.10	1		11/06/19 17:11	79-00-5	
Trichloroethene	**12100**	ug/L	100	17.0	100		11/04/19 13:36	79-01-6	
Vinyl chloride	**662**	ug/L	100	11.0	100		11/04/19 13:36	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		11/06/19 17:11	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	93	%	80-120		1		11/06/19 17:11	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/06/19 17:11	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/06/19 17:11	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/06/19 17:11		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-16-201910 **Lab ID: 60319241023** Collected: 10/24/19 09:50 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 08:50	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 08:50	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 08:50	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 08:50	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 08:50	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 08:50	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 08:50	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 08:50	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 08:50	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 08:50	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 08:50	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 08:50	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 08:50	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 08:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 08:50	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/04/19 08:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 08:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 08:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 08:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 08:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 08:50	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 08:50	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 08:50	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 08:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 08:50	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 08:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 08:50	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 08:50	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 08:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 08:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 08:50	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 08:50	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 08:50	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 08:50	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/04/19 08:50	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/04/19 08:50	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/04/19 08:50	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 08:50		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-10-201910 **Lab ID: 60319241024** Collected: 10/24/19 11:35 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 09:04	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 09:04	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 09:04	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 09:04	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 09:04	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 09:04	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 09:04	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 09:04	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 09:04	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 09:04	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 09:04	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 09:04	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 09:04	124-48-1	
1,1-Dichloroethane	**0.42J**	ug/L	1.0	0.097	1		11/04/19 09:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 09:04	107-06-2	
1,1-Dichloroethene	**0.44J**	ug/L	1.0	0.22	1		11/04/19 09:04	75-35-4	
cis-1,2-Dichloroethene	**6.3**	ug/L	1.0	0.17	1		11/04/19 09:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 09:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 09:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 09:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 09:04	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 09:04	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 09:04	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 09:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 09:04	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 09:04	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 09:04	79-34-5	
Tetrachloroethene	**0.22J**	ug/L	1.0	0.22	1		11/04/19 09:04	127-18-4	
Toluene	**0.32J**	ug/L	1.0	0.14	1		11/04/19 09:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 09:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 09:04	79-00-5	
Trichloroethene	**127**	ug/L	1.0	0.17	1		11/04/19 09:04	79-01-6	
Vinyl chloride	**0.40J**	ug/L	1.0	0.11	1		11/04/19 09:04	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 09:04	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	97	%	80-120		1		11/04/19 09:04	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/04/19 09:04	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 09:04	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 09:04		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: ITMW-5-201910 **Lab ID: 60319241025** Collected: 10/24/19 13:05 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 11:41	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 11:41	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 11:41	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 11:41	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 11:41	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 11:41	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 11:41	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 11:41	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 11:41	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 11:41	75-00-3	
Chloroform	**0.80J**	ug/L	1.0	0.10	1		11/04/19 11:41	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 11:41	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 11:41	124-48-1	
1,1-Dichloroethane	**1.4**	ug/L	1.0	0.097	1		11/04/19 11:41	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 11:41	107-06-2	
1,1-Dichloroethene	**8.5**	ug/L	1.0	0.22	1		11/04/19 11:41	75-35-4	
cis-1,2-Dichloroethene	**42.1**	ug/L	1.0	0.17	1		11/04/19 11:41	156-59-2	
trans-1,2-Dichloroethene	**0.42J**	ug/L	1.0	0.17	1		11/04/19 11:41	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 11:41	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 11:41	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 11:41	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 11:41	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 11:41	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 11:41	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 11:41	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 11:41	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 11:41	79-34-5	
Tetrachloroethene	**1.8**	ug/L	1.0	0.22	1		11/04/19 11:41	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 11:41	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 11:41	71-55-6	
1,1,2-Trichloroethane	**0.11J**	ug/L	1.0	0.10	1		11/04/19 11:41	79-00-5	
Trichloroethene	**3700**	ug/L	20.0	3.4	20		11/04/19 11:56	79-01-6	
Vinyl chloride	**2.0**	ug/L	1.0	0.11	1		11/04/19 11:41	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 11:41	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/04/19 11:41	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		11/04/19 11:41	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 11:41	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 11:41		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: IW-132-201910 **Lab ID: 60319241026** Collected: 10/24/19 15:30 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 12:10	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 12:10	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 12:10	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 12:10	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 12:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 12:10	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 12:10	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 12:10	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 12:10	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 12:10	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 12:10	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 12:10	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 12:10	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 12:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 12:10	107-06-2	
1,1-Dichloroethene	**0.32J**	ug/L	1.0	0.22	1		11/04/19 12:10	75-35-4	
cis-1,2-Dichloroethene	**0.57J**	ug/L	1.0	0.17	1		11/04/19 12:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 12:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 12:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 12:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 12:10	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 12:10	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 12:10	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 12:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 12:10	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 12:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 12:10	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 12:10	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 12:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 12:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 12:10	79-00-5	
Trichloroethene	**292**	ug/L	20.0	3.4	20		11/04/19 12:24	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 12:10	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 12:10	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/04/19 12:10	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/04/19 12:10	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 12:10	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 12:10		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: DUP-08-201910 **Lab ID: 60319241027** Collected: 10/24/19 09:32 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 10:01	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 10:01	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 10:01	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 10:01	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 10:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 10:01	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 10:01	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 10:01	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 10:01	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 10:01	75-00-3	
Chloroform	**0.23J**	ug/L	1.0	0.10	1		11/04/19 10:01	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 10:01	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 10:01	124-48-1	
1,1-Dichloroethane	**0.79J**	ug/L	1.0	0.097	1		11/04/19 10:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 10:01	107-06-2	
1,1-Dichloroethene	**0.99J**	ug/L	1.0	0.22	1		11/04/19 10:01	75-35-4	
cis-1,2-Dichloroethene	**8.7**	ug/L	1.0	0.17	1		11/04/19 10:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 10:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 10:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 10:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 10:01	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 10:01	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 10:01	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 10:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 10:01	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 10:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 10:01	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 10:01	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 10:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 10:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 10:01	79-00-5	
Trichloroethene	**506**	ug/L	10.0	1.7	10		11/05/19 17:19	79-01-6	
Vinyl chloride	**0.50J**	ug/L	1.0	0.11	1		11/04/19 10:01	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 10:01	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		11/04/19 10:01	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		11/04/19 10:01	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/04/19 10:01	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 10:01		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: DUP-09-201910 **Lab ID: 60319241028** Collected: 10/24/19 10:45 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 10:16	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 10:16	71-43-2	
Bromodichloromethane	**0.46J**	ug/L	1.0	0.17	1		11/04/19 10:16	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 10:16	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 10:16	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 10:16	78-93-3	
Carbon disulfide	**10.1**	ug/L	5.0	0.16	1		11/04/19 10:16	75-15-0	
Carbon tetrachloride	**2.2**	ug/L	1.0	0.084	1		11/04/19 10:16	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 10:16	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 10:16	75-00-3	
Chloroform	**11.9**	ug/L	1.0	0.10	1		11/04/19 10:16	67-66-3	
Chloromethane	**0.83J**	ug/L	1.0	0.16	1		11/04/19 10:16	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 10:16	124-48-1	
1,1-Dichloroethane	**7.7**	ug/L	1.0	0.097	1		11/04/19 10:16	75-34-3	
1,2-Dichloroethane	**0.29J**	ug/L	1.0	0.14	1		11/04/19 10:16	107-06-2	
1,1-Dichloroethene	**77.6**	ug/L	1.0	0.22	1		11/04/19 10:16	75-35-4	
cis-1,2-Dichloroethene	**101**	ug/L	1.0	0.17	1		11/04/19 10:16	156-59-2	
trans-1,2-Dichloroethene	**11.0**	ug/L	1.0	0.17	1		11/04/19 10:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 10:16	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 10:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 10:16	10061-02-6	
Ethylbenzene	**0.19J**	ug/L	1.0	0.12	1		11/04/19 10:16	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 10:16	591-78-6	
Methylene Chloride	**1.8**	ug/L	1.0	0.27	1		11/04/19 10:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 10:16	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 10:16	100-42-5	
1,1,2,2-Tetrachloroethane	**4.3**	ug/L	1.0	0.31	1		11/04/19 10:16	79-34-5	
Tetrachloroethene	**8.5**	ug/L	1.0	0.22	1		11/04/19 10:16	127-18-4	
Toluene	**5.3**	ug/L	1.0	0.14	1		11/04/19 10:16	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	2000	240	2000		11/05/19 18:16	71-55-6	
1,1,2-Trichloroethane	**2.8**	ug/L	1.0	0.10	1		11/04/19 10:16	79-00-5	
Trichloroethene	**74500**	ug/L	2000	340	2000		11/05/19 18:16	79-01-6	
Vinyl chloride	**4.8**	ug/L	1.0	0.11	1		11/04/19 10:16	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 10:16	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		11/04/19 10:16	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/04/19 10:16	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		11/04/19 10:16	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 10:16		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: DUP-10-201910 **Lab ID: 60319241029** Collected: 10/24/19 09:50 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 10:30	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 10:30	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 10:30	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 10:30	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 10:30	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 10:30	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 10:30	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 10:30	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 10:30	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 10:30	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 10:30	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 10:30	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 10:30	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/04/19 10:30	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 10:30	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/04/19 10:30	75-35-4	
cis-1,2-Dichloroethene	**0.31J**	ug/L	1.0	0.17	1		11/04/19 10:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 10:30	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 10:30	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 10:30	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 10:30	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 10:30	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 10:30	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 10:30	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 10:30	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 10:30	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 10:30	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 10:30	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 10:30	108-88-3	
1,1,1-Trichloroethane	**0.20J**	ug/L	1.0	0.12	1		11/04/19 10:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 10:30	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/05/19 15:25	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/04/19 10:30	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 10:30	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/04/19 10:30	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/04/19 10:30	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/04/19 10:30	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 10:30		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: EB-04-201910 **Lab ID: 60319241030** Collected: 10/24/19 16:45 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/02/19 04:49	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/02/19 04:49	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/02/19 04:49	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/02/19 04:49	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/02/19 04:49	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/02/19 04:49	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/02/19 04:49	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/02/19 04:49	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/02/19 04:49	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/02/19 04:49	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/02/19 04:49	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/02/19 04:49	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/02/19 04:49	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/02/19 04:49	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/02/19 04:49	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/02/19 04:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 04:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 04:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/02/19 04:49	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/02/19 04:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/02/19 04:49	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/02/19 04:49	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/02/19 04:49	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/02/19 04:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/02/19 04:49	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/02/19 04:49	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/02/19 04:49	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/02/19 04:49	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/02/19 04:49	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/02/19 04:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/02/19 04:49	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 04:49	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/02/19 04:49	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/02/19 04:49	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/02/19 04:49	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	77-122		1		11/02/19 04:49	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/02/19 04:49	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/02/19 04:49		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: EB-05-201910 **Lab ID: 60319241031** Collected: 10/24/19 16:50 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/02/19 05:03	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/02/19 05:03	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/02/19 05:03	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/02/19 05:03	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/02/19 05:03	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/02/19 05:03	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/02/19 05:03	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/02/19 05:03	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/02/19 05:03	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/02/19 05:03	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/02/19 05:03	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/02/19 05:03	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/02/19 05:03	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/02/19 05:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/02/19 05:03	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/02/19 05:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 05:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 05:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/02/19 05:03	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/02/19 05:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/02/19 05:03	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/02/19 05:03	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/02/19 05:03	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/02/19 05:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/02/19 05:03	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/02/19 05:03	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/02/19 05:03	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/02/19 05:03	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/02/19 05:03	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/02/19 05:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/02/19 05:03	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 05:03	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/02/19 05:03	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/02/19 05:03	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/02/19 05:03	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/02/19 05:03	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		11/02/19 05:03	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/02/19 05:03		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-179-201910 **Lab ID: 60319241032** Collected: 10/24/19 15:50 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/02/19 05:18	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/02/19 05:18	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/02/19 05:18	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/02/19 05:18	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/02/19 05:18	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/02/19 05:18	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/02/19 05:18	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/02/19 05:18	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/02/19 05:18	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/02/19 05:18	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/02/19 05:18	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/02/19 05:18	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/02/19 05:18	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/02/19 05:18	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/02/19 05:18	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/02/19 05:18	75-35-4	
cis-1,2-Dichloroethene	**0.74J**	ug/L	1.0	0.17	1		11/02/19 05:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 05:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/02/19 05:18	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/02/19 05:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/02/19 05:18	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/02/19 05:18	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/02/19 05:18	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/02/19 05:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/02/19 05:18	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/02/19 05:18	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/02/19 05:18	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/02/19 05:18	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/02/19 05:18	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/02/19 05:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/02/19 05:18	79-00-5	
Trichloroethene	**23.7**	ug/L	1.0	0.17	1		11/02/19 05:18	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/02/19 05:18	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/02/19 05:18	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		11/02/19 05:18	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	77-122		1		11/02/19 05:18	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/02/19 05:18	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/02/19 05:18		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TB-06-201910 **Lab ID: 60319241033** Collected: 10/24/19 17:40 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/02/19 02:55	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/02/19 02:55	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/02/19 02:55	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/02/19 02:55	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/02/19 02:55	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/02/19 02:55	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/02/19 02:55	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/02/19 02:55	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/02/19 02:55	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/02/19 02:55	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/02/19 02:55	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/02/19 02:55	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/02/19 02:55	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/02/19 02:55	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/02/19 02:55	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/02/19 02:55	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 02:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 02:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/02/19 02:55	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/02/19 02:55	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/02/19 02:55	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/02/19 02:55	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/02/19 02:55	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/02/19 02:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/02/19 02:55	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/02/19 02:55	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/02/19 02:55	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/02/19 02:55	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/02/19 02:55	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/02/19 02:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/02/19 02:55	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 02:55	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/02/19 02:55	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/02/19 02:55	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/02/19 02:55	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		11/02/19 02:55	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/02/19 02:55	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/02/19 02:55		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TB-07-201910 **Lab ID: 60319241034** Collected: 10/24/19 17:45 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/02/19 03:09	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/02/19 03:09	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/02/19 03:09	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/02/19 03:09	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/02/19 03:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/02/19 03:09	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/02/19 03:09	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/02/19 03:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/02/19 03:09	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/02/19 03:09	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/02/19 03:09	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/02/19 03:09	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/02/19 03:09	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/02/19 03:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/02/19 03:09	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/02/19 03:09	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 03:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 03:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/02/19 03:09	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/02/19 03:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/02/19 03:09	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/02/19 03:09	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/02/19 03:09	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/02/19 03:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/02/19 03:09	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/02/19 03:09	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/02/19 03:09	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/02/19 03:09	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/02/19 03:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/02/19 03:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/02/19 03:09	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 03:09	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/02/19 03:09	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/02/19 03:09	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	97	%	80-120		1		11/02/19 03:09	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/02/19 03:09	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/02/19 03:09	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/02/19 03:09		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TB-08-201910 **Lab ID: 60319241035** Collected: 10/24/19 17:50 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/02/19 03:23	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/02/19 03:23	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/02/19 03:23	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/02/19 03:23	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/02/19 03:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/02/19 03:23	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/02/19 03:23	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/02/19 03:23	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/02/19 03:23	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/02/19 03:23	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/02/19 03:23	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/02/19 03:23	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/02/19 03:23	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/02/19 03:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/02/19 03:23	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/02/19 03:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 03:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 03:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/02/19 03:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/02/19 03:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/02/19 03:23	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/02/19 03:23	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/02/19 03:23	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/02/19 03:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/02/19 03:23	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/02/19 03:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/02/19 03:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/02/19 03:23	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/02/19 03:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/02/19 03:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/02/19 03:23	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 03:23	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/02/19 03:23	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/02/19 03:23	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/02/19 03:23	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	77-122		1		11/02/19 03:23	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/02/19 03:23	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/02/19 03:23		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 618695 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006

METHOD BLANK: 2524474 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	14.0	10/29/19 14:15	

LABORATORY CONTROL SAMPLE: 2524475

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	10100	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2524476 2524477

Parameter	Units	60319292002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	0.11 mg/L	10000	10000	9790	9650	97	95	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619619 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006, 60319241007, 60319241008, 60319241009

METHOD BLANK: 2527137 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006, 60319241007, 60319241008, 60319241009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/01/19 14:17	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/01/19 14:17	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/01/19 14:17	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/01/19 14:17	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/01/19 14:17	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/01/19 14:17	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/01/19 14:17	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/01/19 14:17	
2-Hexanone	ug/L	ND	10.0	1.0	11/01/19 14:17	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/01/19 14:17	
Acetone	ug/L	ND	10.0	3.3	11/01/19 14:17	
Benzene	ug/L	ND	1.0	0.079	11/01/19 14:17	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/01/19 14:17	
Bromoform	ug/L	ND	1.0	0.21	11/01/19 14:17	
Bromomethane	ug/L	ND	5.0	0.32	11/01/19 14:17	
Carbon disulfide	ug/L	ND	5.0	0.16	11/01/19 14:17	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/01/19 14:17	
Chlorobenzene	ug/L	ND	1.0	0.13	11/01/19 14:17	
Chloroethane	ug/L	ND	1.0	0.42	11/01/19 14:17	
Chloroform	ug/L	ND	1.0	0.10	11/01/19 14:17	
Chloromethane	ug/L	ND	1.0	0.16	11/01/19 14:17	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/01/19 14:17	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/01/19 14:17	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/01/19 14:17	
Ethylbenzene	ug/L	ND	1.0	0.12	11/01/19 14:17	
Methylene Chloride	ug/L	ND	1.0	0.27	11/01/19 14:17	
Styrene	ug/L	ND	1.0	0.15	11/01/19 14:17	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/01/19 14:17	
Toluene	ug/L	ND	1.0	0.14	11/01/19 14:17	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/01/19 14:17	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/01/19 14:17	
Trichloroethene	ug/L	ND	1.0	0.17	11/01/19 14:17	
Vinyl chloride	ug/L	ND	1.0	0.11	11/01/19 14:17	
Xylene (Total)	ug/L	ND	3.0	0.34	11/01/19 14:17	
1,2-Dichloroethane-d4 (S)	%	98	77-122		11/01/19 14:17	
4-Bromofluorobenzene (S)	%	101	80-120		11/01/19 14:17	
Toluene-d8 (S)	%	102	80-120		11/01/19 14:17	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

LABORATORY CONTROL SAMPLE: 2527138

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.2	101	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	20.1	100	71-122	
1,1,2-Trichloroethane	ug/L	20	20.1	101	76-123	
1,1-Dichloroethane	ug/L	20	20.9	105	78-117	
1,1-Dichloroethene	ug/L	20	22.7	114	74-122	
1,2-Dichloroethane	ug/L	20	20.3	102	73-120	
1,2-Dichloropropane	ug/L	20	20.3	101	78-115	
2-Butanone (MEK)	ug/L	100	103	103	54-133	
2-Hexanone	ug/L	100	100	100	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	108	108	62-130	
Acetone	ug/L	100	95.6	96	54-130	
Benzene	ug/L	20	19.8	99	80-120	
Bromodichloromethane	ug/L	20	19.1	95	78-121	
Bromoform	ug/L	20	16.1	81	62-137	
Bromomethane	ug/L	20	22.3	112	41-145	
Carbon disulfide	ug/L	20	20.1	101	64-119	
Carbon tetrachloride	ug/L	20	19.9	99	77-122	
Chlorobenzene	ug/L	20	20.2	101	80-123	
Chloroethane	ug/L	20	21.0	105	60-146	
Chloroform	ug/L	20	21.5	107	81-116	
Chloromethane	ug/L	20	22.3	112	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.1	100	80-120	
cis-1,3-Dichloropropene	ug/L	20	19.2	96	78-118	
Dibromochloromethane	ug/L	20	17.5	87	73-128	
Ethylbenzene	ug/L	20	19.9	100	80-120	
Methylene Chloride	ug/L	20	21.6	108	80-126	
Styrene	ug/L	20	19.5	98	85-120	
Tetrachloroethene	ug/L	20	18.7	93	77-121	
Toluene	ug/L	20	19.3	96	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.5	98	80-120	
trans-1,3-Dichloropropene	ug/L	20	16.9	85	76-123	
Trichloroethene	ug/L	20	22.2	111	80-121	
Vinyl chloride	ug/L	20	20.9	105	46-162	
Xylene (Total)	ug/L	60	59.7	100	80-120	
1,2-Dichloroethane-d4 (S)	%			106	77-122	
4-Bromofluorobenzene (S)	%			96	80-120	
Toluene-d8 (S)	%			98	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619753 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319241010, 60319241011, 60319241012, 60319241013, 60319241014, 60319241015, 60319241016, 60319241017, 60319241018, 60319241019, 60319241020, 60319241021, 60319241022, 60319241023, 60319241024, 60319241025, 60319241026, 60319241027, 60319241028, 60319241029

METHOD BLANK: 2527618 Matrix: Water
Associated Lab Samples: 60319241010, 60319241011, 60319241012, 60319241013, 60319241014, 60319241015, 60319241016, 60319241017, 60319241018, 60319241019, 60319241020, 60319241021, 60319241022, 60319241023, 60319241024, 60319241025, 60319241026, 60319241027, 60319241028, 60319241029

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/04/19 07:53	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/04/19 07:53	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/04/19 07:53	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/04/19 07:53	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/04/19 07:53	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/04/19 07:53	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/04/19 07:53	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/04/19 07:53	
2-Hexanone	ug/L	ND	10.0	1.0	11/04/19 07:53	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/04/19 07:53	
Acetone	ug/L	ND	10.0	3.3	11/04/19 07:53	
Benzene	ug/L	ND	1.0	0.079	11/04/19 07:53	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/04/19 07:53	
Bromoform	ug/L	ND	1.0	0.21	11/04/19 07:53	
Bromomethane	ug/L	ND	5.0	0.32	11/04/19 07:53	
Carbon disulfide	ug/L	ND	5.0	0.16	11/04/19 07:53	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/04/19 07:53	
Chlorobenzene	ug/L	ND	1.0	0.13	11/04/19 07:53	
Chloroethane	ug/L	ND	1.0	0.42	11/04/19 07:53	
Chloroform	ug/L	ND	1.0	0.10	11/04/19 07:53	
Chloromethane	ug/L	ND	1.0	0.16	11/04/19 07:53	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/04/19 07:53	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/04/19 07:53	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/04/19 07:53	
Ethylbenzene	ug/L	ND	1.0	0.12	11/04/19 07:53	
Methylene Chloride	ug/L	ND	1.0	0.27	11/04/19 07:53	
Styrene	ug/L	ND	1.0	0.15	11/04/19 07:53	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/04/19 07:53	
Toluene	ug/L	ND	1.0	0.14	11/04/19 07:53	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/04/19 07:53	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/04/19 07:53	
Trichloroethene	ug/L	ND	1.0	0.17	11/04/19 07:53	
Vinyl chloride	ug/L	ND	1.0	0.11	11/04/19 07:53	
Xylene (Total)	ug/L	ND	3.0	0.34	11/04/19 07:53	
1,2-Dichloroethane-d4 (S)	%	101	77-122		11/04/19 07:53	
4-Bromofluorobenzene (S)	%	100	80-120		11/04/19 07:53	
Toluene-d8 (S)	%	100	80-120		11/04/19 07:53	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

LABORATORY CONTROL SAMPLE: 2527619

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.6	103	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	20.4	102	71-122	
1,1,2-Trichloroethane	ug/L	20	20.6	103	76-123	
1,1-Dichloroethane	ug/L	20	21.0	105	78-117	
1,1-Dichloroethene	ug/L	20	22.2	111	74-122	
1,2-Dichloroethane	ug/L	20	19.8	99	73-120	
1,2-Dichloropropane	ug/L	20	21.3	106	78-115	
2-Butanone (MEK)	ug/L	100	99.4	99	54-133	
2-Hexanone	ug/L	100	97.0	97	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	102	102	62-130	
Acetone	ug/L	100	89.3	89	54-130	
Benzene	ug/L	20	20.6	103	80-120	
Bromodichloromethane	ug/L	20	19.2	96	78-121	
Bromoform	ug/L	20	18.0	90	62-137	
Bromomethane	ug/L	20	22.5	112	41-145	
Carbon disulfide	ug/L	20	20.5	103	64-119	
Carbon tetrachloride	ug/L	20	20.9	104	77-122	
Chlorobenzene	ug/L	20	20.2	101	80-123	
Chloroethane	ug/L	20	20.8	104	60-146	
Chloroform	ug/L	20	21.1	106	81-116	
Chloromethane	ug/L	20	21.6	108	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.1	100	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.1	100	78-118	
Dibromochloromethane	ug/L	20	18.0	90	73-128	
Ethylbenzene	ug/L	20	19.8	99	80-120	
Methylene Chloride	ug/L	20	21.2	106	80-126	
Styrene	ug/L	20	19.9	99	85-120	
Tetrachloroethene	ug/L	20	20.0	100	77-121	
Toluene	ug/L	20	19.9	99	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.9	99	80-120	
trans-1,3-Dichloropropene	ug/L	20	17.8	89	76-123	
Trichloroethene	ug/L	20	22.3	112	80-121	
Vinyl chloride	ug/L	20	21.1	106	46-162	
Xylene (Total)	ug/L	60	60.8	101	80-120	
1,2-Dichloroethane-d4 (S)	%			98	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619801 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319241030, 60319241031, 60319241032, 60319241033, 60319241034, 60319241035

METHOD BLANK: 2527747 Matrix: Water
Associated Lab Samples: 60319241030, 60319241031, 60319241032, 60319241033, 60319241034, 60319241035

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/02/19 02:12	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/02/19 02:12	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/02/19 02:12	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/02/19 02:12	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/02/19 02:12	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/02/19 02:12	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/02/19 02:12	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/02/19 02:12	
2-Hexanone	ug/L	ND	10.0	1.0	11/02/19 02:12	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/02/19 02:12	
Acetone	ug/L	ND	10.0	3.3	11/02/19 02:12	
Benzene	ug/L	ND	1.0	0.079	11/02/19 02:12	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/02/19 02:12	
Bromoform	ug/L	ND	1.0	0.21	11/02/19 02:12	
Bromomethane	ug/L	ND	5.0	0.32	11/02/19 02:12	
Carbon disulfide	ug/L	ND	5.0	0.16	11/02/19 02:12	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/02/19 02:12	
Chlorobenzene	ug/L	ND	1.0	0.13	11/02/19 02:12	
Chloroethane	ug/L	ND	1.0	0.42	11/02/19 02:12	
Chloroform	ug/L	ND	1.0	0.10	11/02/19 02:12	
Chloromethane	ug/L	ND	1.0	0.16	11/02/19 02:12	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/02/19 02:12	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/02/19 02:12	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/02/19 02:12	
Ethylbenzene	ug/L	ND	1.0	0.12	11/02/19 02:12	
Methylene Chloride	ug/L	ND	1.0	0.27	11/02/19 02:12	
Styrene	ug/L	ND	1.0	0.15	11/02/19 02:12	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/02/19 02:12	
Toluene	ug/L	ND	1.0	0.14	11/02/19 02:12	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/02/19 02:12	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/02/19 02:12	
Trichloroethene	ug/L	ND	1.0	0.17	11/02/19 02:12	
Vinyl chloride	ug/L	ND	1.0	0.11	11/02/19 02:12	
Xylene (Total)	ug/L	ND	3.0	0.34	11/02/19 02:12	
1,2-Dichloroethane-d4 (S)	%	101	77-122		11/02/19 02:12	
4-Bromofluorobenzene (S)	%	100	80-120		11/02/19 02:12	
Toluene-d8 (S)	%	100	80-120		11/02/19 02:12	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

LABORATORY CONTROL SAMPLE: 2527748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.6	98	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	18.7	94	71-122	
1,1,2-Trichloroethane	ug/L	20	20.3	102	76-123	
1,1-Dichloroethane	ug/L	20	20.3	102	78-117	
1,1-Dichloroethene	ug/L	20	22.8	114	74-122	
1,2-Dichloroethane	ug/L	20	19.6	98	73-120	
1,2-Dichloropropane	ug/L	20	20.7	104	78-115	
2-Butanone (MEK)	ug/L	100	100	100	54-133	
2-Hexanone	ug/L	100	94.8	95	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	103	103	62-130	
Acetone	ug/L	100	84.1	84	54-130	
Benzene	ug/L	20	20.2	101	80-120	
Bromodichloromethane	ug/L	20	18.3	92	78-121	
Bromoform	ug/L	20	15.6	78	62-137	
Bromomethane	ug/L	20	21.2	106	41-145	
Carbon disulfide	ug/L	20	19.7	99	64-119	
Carbon tetrachloride	ug/L	20	19.5	98	77-122	
Chlorobenzene	ug/L	20	20.1	101	80-123	
Chloroethane	ug/L	20	20.5	103	60-146	
Chloroform	ug/L	20	21.0	105	81-116	
Chloromethane	ug/L	20	21.2	106	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.3	96	80-120	
cis-1,3-Dichloropropene	ug/L	20	18.4	92	78-118	
Dibromochloromethane	ug/L	20	17.4	87	73-128	
Ethylbenzene	ug/L	20	19.4	97	80-120	
Methylene Chloride	ug/L	20	21.7	108	80-126	
Styrene	ug/L	20	19.4	97	85-120	
Tetrachloroethene	ug/L	20	19.1	95	77-121	
Toluene	ug/L	20	19.5	98	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.1	96	80-120	
trans-1,3-Dichloropropene	ug/L	20	16.6	83	76-123	
Trichloroethene	ug/L	20	24.0	120	80-121	
Vinyl chloride	ug/L	20	20.8	104	46-162	
Xylene (Total)	ug/L	60	58.1	97	80-120	
1,2-Dichloroethane-d4 (S)	%			101	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			98	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 620343 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319241008, 60319241011, 60319241016, 60319241017, 60319241020, 60319241021, 60319241027, 60319241028, 60319241029

METHOD BLANK: 2529674 Matrix: Water
Associated Lab Samples: 60319241008, 60319241011, 60319241016, 60319241017, 60319241020, 60319241021, 60319241027, 60319241028, 60319241029

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/05/19 14:42	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/05/19 14:42	
Trichloroethene	ug/L	ND	1.0	0.17	11/05/19 14:42	
1,2-Dichloroethane-d4 (S)	%	99	77-122		11/05/19 14:42	
4-Bromofluorobenzene (S)	%	99	80-120		11/05/19 14:42	
Toluene-d8 (S)	%	101	80-120		11/05/19 14:42	

LABORATORY CONTROL SAMPLE: 2529675

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.5	97	79-120	
cis-1,2-Dichloroethene	ug/L	20	18.8	94	80-120	
Trichloroethene	ug/L	20	21.8	109	80-121	
1,2-Dichloroethane-d4 (S)	%			100	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 620685 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319241005, 60319241006, 60319241010, 60319241022

METHOD BLANK: 2530997 Matrix: Water
Associated Lab Samples: 60319241005, 60319241006, 60319241010, 60319241022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/06/19 12:12	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.23	11/06/19 12:12	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/06/19 12:12	
1,1-Dichloroethane	ug/L	ND	1.0	0.12	11/06/19 12:12	
1,1-Dichloroethene	ug/L	ND	1.0	0.14	11/06/19 12:12	
1,2-Dichloroethane	ug/L	ND	1.0	0.33	11/06/19 12:12	
1,2-Dichloropropane	ug/L	ND	1.0	0.14	11/06/19 12:12	
2-Butanone (MEK)	ug/L	ND	10.0	1.8	11/06/19 12:12	
2-Hexanone	ug/L	ND	10.0	1.6	11/06/19 12:12	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	1.3	11/06/19 12:12	
Acetone	ug/L	ND	10.0	7.4	11/06/19 12:12	
Benzene	ug/L	ND	1.0	0.13	11/06/19 12:12	
Bromodichloromethane	ug/L	ND	1.0	0.14	11/06/19 12:12	
Bromoform	ug/L	ND	1.0	0.28	11/06/19 12:12	
Bromomethane	ug/L	ND	5.0	2.8	11/06/19 12:12	
Carbon disulfide	ug/L	ND	5.0	0.086	11/06/19 12:12	
Carbon tetrachloride	ug/L	ND	1.0	0.070	11/06/19 12:12	
Chlorobenzene	ug/L	ND	1.0	0.17	11/06/19 12:12	
Chloroethane	ug/L	ND	1.0	0.83	11/06/19 12:12	
Chloroform	ug/L	ND	1.0	0.25	11/06/19 12:12	
Chloromethane	ug/L	ND	1.0	0.51	11/06/19 12:12	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.18	11/06/19 12:12	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.18	11/06/19 12:12	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/06/19 12:12	
Ethylbenzene	ug/L	ND	1.0	0.20	11/06/19 12:12	
Methylene Chloride	ug/L	ND	1.0	0.35	11/06/19 12:12	
Styrene	ug/L	ND	1.0	0.19	11/06/19 12:12	
Tetrachloroethene	ug/L	ND	1.0	0.14	11/06/19 12:12	
Toluene	ug/L	ND	1.0	0.17	11/06/19 12:12	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.082	11/06/19 12:12	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.18	11/06/19 12:12	
Vinyl chloride	ug/L	ND	1.0	0.17	11/06/19 12:12	
Xylene (Total)	ug/L	ND	3.0	0.42	11/06/19 12:12	
1,2-Dichloroethane-d4 (S)	%	100	77-122		11/06/19 12:12	
4-Bromofluorobenzene (S)	%	89	80-120		11/06/19 12:12	
Toluene-d8 (S)	%	100	80-120		11/06/19 12:12	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

LABORATORY CONTROL SAMPLE: 2530998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.4	102	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.2	96	71-122	
1,1,2-Trichloroethane	ug/L	20	22.3	112	76-123	
1,1-Dichloroethane	ug/L	20	20.7	104	78-117	
1,1-Dichloroethene	ug/L	20	21.2	106	74-122	
1,2-Dichloroethane	ug/L	20	20.5	102	73-120	
1,2-Dichloropropane	ug/L	20	20.8	104	78-115	
2-Butanone (MEK)	ug/L	100	104	104	54-133	
2-Hexanone	ug/L	100	108	108	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	110	110	62-130	
Acetone	ug/L	100	105	105	54-130	
Benzene	ug/L	20	20.4	102	80-120	
Bromodichloromethane	ug/L	20	20.7	104	78-121	
Bromoform	ug/L	20	22.9	114	62-137	
Bromomethane	ug/L	20	15.4	77	41-145	
Carbon disulfide	ug/L	20	21.5	108	64-119	
Carbon tetrachloride	ug/L	20	21.2	106	77-122	
Chlorobenzene	ug/L	20	21.3	106	80-123	
Chloroethane	ug/L	20	21.6	108	60-146	
Chloroform	ug/L	20	20.0	100	81-116	
Chloromethane	ug/L	20	24.7	123	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.7	103	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.7	104	78-118	
Dibromochloromethane	ug/L	20	21.9	110	73-128	
Ethylbenzene	ug/L	20	22.3	112	80-120	
Methylene Chloride	ug/L	20	23.1	115	80-126	
Styrene	ug/L	20	21.0	105	85-120	
Tetrachloroethene	ug/L	20	22.0	110	77-121	
Toluene	ug/L	20	20.4	102	80-120	
trans-1,2-Dichloroethene	ug/L	20	20.2	101	80-120	
trans-1,3-Dichloropropene	ug/L	20	19.6	98	76-123	
Vinyl chloride	ug/L	20	21.6	108	46-162	
Xylene (Total)	ug/L	60	66.4	111	80-120	
1,2-Dichloroethane-d4 (S)	%			103	77-122	
4-Bromofluorobenzene (S)	%			91	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619293 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60319241005, 60319241006

METHOD BLANK: 2526229 Matrix: Water
Associated Lab Samples: 60319241005, 60319241006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	0.039	10/30/19 14:44	

LABORATORY CONTROL SAMPLE: 2526230

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.50	100	80-120	

MATRIX SPIKE SAMPLE: 2526231

Parameter	Units	60319241005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.5	0.50	99	75-125	

SAMPLE DUPLICATE: 2526232

Parameter	Units	60319468001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 620357 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241006

METHOD BLANK: 2529754 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	11/07/19 02:15	
Sulfate	mg/L	ND	1.0	0.23	11/07/19 02:15	

LABORATORY CONTROL SAMPLE: 2529755

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	
Sulfate	mg/L	5	5.2	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2529756 2529757

Parameter	Units	60319241001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	26.0	10	10	37.3	37.3	113	113	80-120	0	15	
Sulfate	mg/L	10.4	5	5	16.0	15.9	110	109	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 620925
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60319241005

METHOD BLANK: 2531883 Matrix: Water
Associated Lab Samples: 60319241005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	0.23	11/08/19 09:31	

LABORATORY CONTROL SAMPLE: 2531884

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.3	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2531885 2531886

Parameter	Units	60319214001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	310	250	250	566	564	102	102	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 618401
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 60319241005, 60319241006

METHOD BLANK: 2523313 Matrix: Water
Associated Lab Samples: 60319241005, 60319241006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	0.067	10/25/19 15:26	
Nitrogen, Nitrite	mg/L	ND	0.10	0.067	10/25/19 15:26	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	10/25/19 15:26	

LABORATORY CONTROL SAMPLE: 2523314

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	1.0	100	70-130	
Nitrogen, Nitrite	mg/L	1	1.1	106	90-110	
Nitrogen, NO2 plus NO3	mg/L	2	2.1	103	90-110	

MATRIX SPIKE SAMPLE: 2523315

Parameter	Units	60319241005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	0.20	1	1.1	93	70-130	
Nitrogen, Nitrite	mg/L	ND	1	1.2	113	90-110	M1
Nitrogen, NO2 plus NO3	mg/L	0.20	2	2.3	106	90-110	

SAMPLE DUPLICATE: 2523316

Parameter	Units	60319261001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	4.2	4.2	0	20	
Nitrogen, Nitrite	mg/L	ND	ND		20	
Nitrogen, NO2 plus NO3	mg/L	4.2	4.2	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619108 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004

METHOD BLANK: 2525611 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	10/30/19 09:51	

LABORATORY CONTROL SAMPLE: 2525612

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2	2.0	99	90-110	

MATRIX SPIKE SAMPLE: 2525613

Parameter	Units	60319076002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	0.32	2	2.2	95	90-110	

MATRIX SPIKE SAMPLE: 2525615

Parameter	Units	60319190001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	3.9	2	4.2	14	90-110	M1

SAMPLE DUPLICATE: 2525614

Parameter	Units	60319076004 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619790 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006

METHOD BLANK: 2527704 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	11/01/19 16:02	

LABORATORY CONTROL SAMPLE: 2527705

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.5	110	80-120	

MATRIX SPIKE SAMPLE: 2527706

Parameter	Units	60319130005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	7.8	5	12.7	99	80-120	

SAMPLE DUPLICATE: 2527707

Parameter	Units	60319241001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	0.56J	0.55J		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619520 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60319241001, 60319241002

METHOD BLANK: 2526889 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	0.30J	1.0	0.29	10/31/19 22:45	

LABORATORY CONTROL SAMPLE: 2526890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.5	111	80-120	

MATRIX SPIKE SAMPLE: 2526891

Parameter	Units	60319115044 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	203	125	329	101	80-120	

SAMPLE DUPLICATE: 2526892

Parameter	Units	60319115061 Result	Dup Result	RPD	Max RPD	Qualifiers
Dissolved Organic Carbon	mg/L	0.81J	0.78J		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619793 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60319241003, 60319241004

METHOD BLANK: 2527711 Matrix: Water
Associated Lab Samples: 60319241003, 60319241004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.29	11/01/19 22:28	

LABORATORY CONTROL SAMPLE: 2527712

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.7	113	80-120	

MATRIX SPIKE SAMPLE: 2527713

Parameter	Units	10497396001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	2.9	5	8.5	112	80-120	

SAMPLE DUPLICATE: 2527714

Parameter	Units	60319241004 Result	Dup Result	RPD	Max RPD	Qualifiers
Dissolved Organic Carbon	mg/L	39.3	39.2	0	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 619619

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 619753

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 619801

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 620343

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 620685

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1e	Sample was analyzed at a 5x dilution which resulted in a non-dection. Sample was re-analyzed at a 1x dilution and the result matched the initial run.
B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319241001	TMW-34-201910	EPA 3010	618695	EPA 6010	618728
60319241002	TMW-32-201910	EPA 3010	618695	EPA 6010	618728
60319241003	MW-186-201910	EPA 3010	618695	EPA 6010	618728
60319241004	TMW-25-201910	EPA 3010	618695	EPA 6010	618728
60319241005	IW-147-201910	EPA 3010	618695	EPA 6010	618728
60319241006	MW-95-201910	EPA 3010	618695	EPA 6010	618728
60319241001	TMW-34-201910	EPA 5030B/8260	619619		
60319241002	TMW-32-201910	EPA 5030B/8260	619619		
60319241003	MW-186-201910	EPA 5030B/8260	619619		
60319241004	TMW-25-201910	EPA 5030B/8260	619619		
60319241005	IW-147-201910	EPA 5030B/8260	619619		
60319241005	IW-147-201910	EPA 5030B/8260	620685		
60319241006	MW-95-201910	EPA 5030B/8260	619619		
60319241006	MW-95-201910	EPA 5030B/8260	620685		
60319241007	MW-83-201910	EPA 5030B/8260	619619		
60319241008	ITMW-18-201910	EPA 5030B/8260	619619		
60319241008	ITMW-18-201910	EPA 5030B/8260	620343		
60319241009	ITMW-19-201910	EPA 5030B/8260	619619		
60319241010	MW-93-201910	EPA 5030B/8260	619753		
60319241010	MW-93-201910	EPA 5030B/8260	620685		
60319241011	MW-189-201910	EPA 5030B/8260	619753		
60319241011	MW-189-201910	EPA 5030B/8260	620343		
60319241012	TMW-36-201910	EPA 5030B/8260	619753		
60319241013	MW-185-201910	EPA 5030B/8260	619753		
60319241014	MW-27-201910	EPA 5030B/8260	619753		
60319241015	ITMW-2R-201910	EPA 5030B/8260	619753		
60319241016	ITMW-11-201910	EPA 5030B/8260	619753		
60319241016	ITMW-11-201910	EPA 5030B/8260	620343		
60319241017	ITMW-12R-201910	EPA 5030B/8260	619753		
60319241017	ITMW-12R-201910	EPA 5030B/8260	620343		
60319241018	MW-91-201910	EPA 5030B/8260	619753		
60319241019	ITMW-21-201910	EPA 5030B/8260	619753		
60319241020	MW-85R-201910	EPA 5030B/8260	619753		
60319241020	MW-85R-201910	EPA 5030B/8260	620343		
60319241021	IW-134-201910	EPA 5030B/8260	619753		
60319241021	IW-134-201910	EPA 5030B/8260	620343		
60319241022	MW-37-201910	EPA 5030B/8260	619753		
60319241022	MW-37-201910	EPA 5030B/8260	620685		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319241023	**ITMW-16-201910**	EPA 5030B/8260	619753		
60319241024	**ITMW-10-201910**	EPA 5030B/8260	619753		
60319241025	**ITMW-5-201910**	EPA 5030B/8260	619753		
60319241026	**IW-132-201910**	EPA 5030B/8260	619753		
60319241027	**DUP-08-201910**	EPA 5030B/8260	619753		
60319241027	**DUP-08-201910**	EPA 5030B/8260	620343		
60319241028	**DUP-09-201910**	EPA 5030B/8260	619753		
60319241028	**DUP-09-201910**	EPA 5030B/8260	620343		
60319241029	**DUP-10-201910**	EPA 5030B/8260	619753		
60319241029	**DUP-10-201910**	EPA 5030B/8260	620343		
60319241030	**EB-04-201910**	EPA 5030B/8260	619801		
60319241031	**EB-05-201910**	EPA 5030B/8260	619801		
60319241032	**MW-179-201910**	EPA 5030B/8260	619801		
60319241033	**TB-06-201910**	EPA 5030B/8260	619801		
60319241034	**TB-07-201910**	EPA 5030B/8260	619801		
60319241035	**TB-08-201910**	EPA 5030B/8260	619801		
60319241005	**IW-147-201910**	SM 4500-S-2 D	619293		
60319241006	**MW-95-201910**	SM 4500-S-2 D	619293		
60319241001	**TMW-34-201910**	EPA 300.0	620357		
60319241002	**TMW-32-201910**	EPA 300.0	620357		
60319241003	**MW-186-201910**	EPA 300.0	620357		
60319241004	**TMW-25-201910**	EPA 300.0	620357		
60319241005	**IW-147-201910**	EPA 300.0	620925		
60319241006	**MW-95-201910**	EPA 300.0	620357		
60319241005	**IW-147-201910**	EPA 353.2	618401		
60319241006	**MW-95-201910**	EPA 353.2	618401		
60319241001	**TMW-34-201910**	EPA 353.2	619108		
60319241002	**TMW-32-201910**	EPA 353.2	619108		
60319241003	**MW-186-201910**	EPA 353.2	619108		
60319241004	**TMW-25-201910**	EPA 353.2	619108		
60319241001	**TMW-34-201910**	SM 5310C	619790		
60319241002	**TMW-32-201910**	SM 5310C	619790		
60319241003	**MW-186-201910**	SM 5310C	619790		
60319241004	**TMW-25-201910**	SM 5310C	619790		
60319241005	**IW-147-201910**	SM 5310C	619790		
60319241006	**MW-95-201910**	SM 5310C	619790		
60319241001	**TMW-34-201910**	SM 5310C	619520		
60319241002	**TMW-32-201910**	SM 5310C	619520		
60319241003	**MW-186-201910**	SM 5310C	619793		
60319241004	**TMW-25-201910**	SM 5310C	619793		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical®

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix ... List Pace Workorder Number or MTJL Log-in

WO# : 60319241

60319241

ALL S...

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller

Site Collection Info/Address: 6400 Jenny Lind Rd. Ft Smith

Customer Project Name/Number:

State: AR County/City: / Time Zone Collected: PT MT CT ET

Phone:
Email: hahlers@ramboll.com

Site/Facility ID #:

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print): Haley Ahlers

Purchase Order #:

DW PWS ID #:

Quote #:

DW Location Code #:

Collected by (signature): Haley Ahlers

Turnaround Date Required: Std

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive ____ [ ] Hold ____

RUSH: Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply) Same

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: ____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3 D D 1 U U 2 U O 4 5 U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other BAK

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

60319241

↓ LAB USE ONLY: ↓

Customer Sample ID	Matrix*	Comp/Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8260 VOC Full List	Methane, Ethane, Ethene (MEE)	Methane, Ethane, Ethene, Acetylene (MEEA)	Metals, Total Iron	Sulfate, Nitrate	Sulfate, Nitrate, Chloride	Total Organic Carbon	Dissolved Organic Carbon	Volatile Fatty Acids (VFA)	Sulfide	Hydrogen	Lab Sample # / Comments
TMW-34-201910	GW	G	10/24/19	1730				12	X	X		X		X	X	X	X			001
TMW-32-201910	↓	↓	↓	1515				↓	↓	↓				↓		↓	↓			002
MW-186-201910	↓	↓	↓	1315				↓	↓	↓				↓		↓	↓			003
TMW-25-201910	↓	↓	↓	1055				↓	↓	↓				↓		↓	↓			004
IW-147-201910	↓	↓	↓	1015				11	↓		X		X					X	X	005
MW-95-201910	↓	↓	↓	1305				↓	↓		↓		↓					↓	↓	006
MW-83-201910	↓	↓	↓	1000				3	↓											007
ITMW-18-201910	↓	↓	↓	1300				↓	↓											008
ITMW-19-201910	↓	↓	↓	1125				↓	↓											009
MW-93-201910	↓	↓	↓	1435				↓	↓											010

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used: Zip Double Bags

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: ____

ACCT #: ____

Template: ____

Prelogin: ____

PM: ____

PB: ____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: ____

Cooler Temp Upon Receipt: T298 oC

Cooler Therm Corr. Factor: 34.14 oC 1.1

Cooler Temp Corrected: +0.0 oC

Comments: 3.4, 1.4 1.1

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 1 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Haley Ahlers/Ramboll	10/24/19 1800	[signature]	10-25-19 0210
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

F-ALL-C-010-rev.00, 05Jul2018

Pace Analytical®

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller

Site Collection Info/Address:

Customer Project Name/Number:

State County/City Time Zone Collected / PT MT CT ET

Phone:
Email:

SEE PAGE 1

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print):

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature):

Turnaround Date Required:

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive _____
[ ] Hold _____

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses: 8260 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60319241

↓ LAB USE ONLY: ↓

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8260 VOC Full List	Lab Sample # / Comments
3 MW-189-201910	GW	G	10/24/19	0932				3	X	011
3 TMW-36-201910	↓	↓	↓	1046				↓	↓	012
1 MW-185-201910	↓	↓	↓	1429				↓	↓	013
3 MW-27-201910	↓	↓	↓	1315				↓	↓	014
3 ITMW-2R-201910	↓	↓	↓	1005				↓	↓	015
3 ITMW-11-201910	↓	↓	↓	1155				↓	↓	7 day hold 016
3 ITMW-12R-201910	↓	↓	↓	1605				↓	↓	017
3 MW-91-201910	↓	↓	↓	1420				↓	↓	018
3 ITMW-21-201910	↓	↓	↓	0925				↓	↓	019
3 MW-85R-201910	↓	↓	↓	1045				↓	↓	020

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 2 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Haley Chenn / Ramboll	10/24/19 1800	[signature] / Pace	10-25-19 0210
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

F-ALL-C-010-rev.00, 05Jul2018

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Container Preservative Type **: 3

Lab Project Manager:

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Copy To: Nick Zurweller

Site Collection Info/Address:

SEE PAGE 1

Customer Project Name/Number:

State / County/City / Time Zone Collected: PT MT CT ET

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print):

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature):

Turnaround Date Required:

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive _____
[ ] Hold _____

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses: 8260 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

6031924l

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
IW-134-201910	GW	G	10/24/19	1205				3	021
MW-37-201910				1530					022
ITMW-16-201910				0950					023
ITMW-10-201910				1135					024
ITMW-5-201910				1305					025
IW-132-201910				1530					026
~~MW-147-201910~~									
~~MW-95-201910~~									
DUP-08-201910				0932					027
DUP-09-201910				1045					028

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Harley Shaw/Ramboll	10/24/19 1800	[illegible]	10/25/19 0210
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 3 of 4

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll | Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight | Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller | Site Collection Info/Address:

Customer Project Name/Number: | State / County/City / Time Zone Collected PT MT CT ET

Phone: | Site/Facility ID # | Compliance Monitoring? [ ] Yes [ ] No

Email:

Collected by (print): SEE PAGE 1 | Purchase Order # | DW PWS ID #:

Quote # | DW Location Code #:

Collected by (signature): | Turnaround Date Required: | Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type ** : 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

Analyses: 8260 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60319241

	Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
3	DUP-10-201910	GW	G	10/24/19	0950				3	029
3	EB-04-201910				1645					030
3	EB-05-201910				1650					031
1	MW-179-201910				1550					032
1	TB-06-201910				1740				2	033
1	TB-07-201910				1745					034
2	TB-05-201910				1750					035

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used: | LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Harley Arlen / Ramboll	10/24/19 1800	[illegible] / Pace	10.25.1920

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 4 of 4

Pace Analytical
www.pacelabs.com

Sample Receiving Non-Conformance Form (NCF)

Date: 9.25.19	Evaluated by: Wcspt / Pac
Client: Ramboll	

Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. If COC is incomplete, check applicable issues below and add details where appropriate:

	Collection date/time missing or incorrect	X	Analyses or analytes: missing or clarification needed		Samples listed on COC do not match samples received (missing, additional, etc.)
	Sample IDs on COC do not match sample labels		Required trip blanks were not received		Required signatures are missing

Comments/Details/Other Issues not listed above:

received BRJN for samples 2 through 6 no test marked for that container

3. Sample integrity issues: check applicable issues below and add details where appropriate:

	Samples: Past holding time		Samples: Condition needs to be brought to lab personnel's attention (details below)		Preservation: Improper
	Samples: Not field filtered		Containers: Broken or compromised		Temperature: not within acceptance criteria (typically 0-6C)
	Samples: Insufficient volume received		Containers: Incorrect		Temperature: Samples arrived frozen
	Samples: Cooler damaged or compromised		Custody Seals: Missing or compromised on samples, trip blanks or coolers		Vials received with improper headspace
	Samples: contain chlorine or sulfides		Packing Material: Insufficient/Improper		Other:

Comments/Details:

Samples 002, 003, & 004 logged for metals (HOLD), as well as TOC (not on hold)

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:	
PM Initials:	Date/Time:	

Client Comments/Instructions:

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 11, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60319241 / WHIRLPOOL**
Pace Workorder: 31953

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, October 29, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/11/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 20

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID	Sample ID	Matrix	Date Collected	Date Received
319530001	TMW-34-201910	Water	10/24/2019 17:30	10/29/2019 11:00
319530002	TMW-32-201910	Water	10/24/2019 15:15	10/29/2019 11:00
319530003	MW-186-201910	Water	10/24/2019 13:15	10/29/2019 11:00
319530004	TMW-25-201910	Water	10/24/2019 10:55	10/29/2019 11:00
319530005	IW-147-201910	Water	10/24/2019 10:15	10/29/2019 11:00
319530006	MW-95-201910	Water	10/24/2019 13:05	10/29/2019 11:00
319530007	IW-147-201910	Bubble Strip	10/24/2019 10:15	10/29/2019 11:00
319530008	MW-95-201910	Bubble Strip	10/24/2019 13:05	10/29/2019 11:00

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31953 60319241 / WHIRLPOOL

Workorder Comments

The container pH for samples 31953 (0001-0006) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530001** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-34-201910** Date Collected: 10/24/2019 17:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**8400**	ug/l	0.50	0.094	1	11/5/2019 11:34	TD	n
Ethane	**0.24**	ug/l	0.10	0.011	1	11/5/2019 11:34	TD	n
Ethene	**<0.10**	ug/l	0.10	0.0080	1	11/5/2019 11:34	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530002** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-32-201910** Date Collected: 10/24/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**8800**	ug/l	0.50	0.094	1	11/5/2019 11:49	TD	n
Ethane	**0.21**	ug/l	0.10	0.011	1	11/5/2019 11:49	TD	n
Ethene	**0.30**	ug/l	0.10	0.0080	1	11/5/2019 11:49	TD	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530003** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **MW-186-201910** Date Collected: 10/24/2019 13:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**12000**	ug/l	0.50	0.094	1	11/5/2019 12:04	TD	n
Ethane	**0.10**	ug/l	0.10	0.011	1	11/5/2019 12:04	TD	n
Ethene	**0.55**	ug/l	0.10	0.0080	1	11/5/2019 12:04	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530004** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-25-201910** Date Collected: 10/24/2019 10:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**12000**	ug/l	0.50	0.094	1	11/5/2019 09:15	TD	n
Ethane	**0.16**	ug/l	0.10	0.011	1	11/5/2019 09:15	TD	n
Ethene	**0.25**	ug/l	0.10	0.0080	1	11/5/2019 09:15	TD	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530005** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **IW-147-201910** Date Collected: 10/24/2019 10:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**37**	ug/l	0.50	0.094	1	11/5/2019 09:30	TD	n
Ethane	**6.5**	ug/l	0.10	0.011	1	11/5/2019 09:30	TD	n
Ethene	**0.28**	ug/l	0.10	0.0080	1	11/5/2019 09:30	TD	n
Acetylene	**3.0**	ug/l	0.50	0.037	1	11/5/2019 09:30	TD	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530006** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **MW-95-201910** Date Collected: 10/24/2019 13:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**4.6**	ug/l	0.50	0.094	1	11/5/2019 09:45	TD	n
Ethane	**0.48**	ug/l	0.10	0.011	1	11/5/2019 09:45	TD	n
Ethene	**<0.10**	ug/l	0.10	0.0080	1	11/5/2019 09:45	TD	n
Acetylene	**<0.50**	ug/l	0.50	0.037	1	11/5/2019 09:45	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530007** Date Received: 10/29/2019 11:00 Matrix: Bubble Strip

Sample ID: **IW-147-201910** Date Collected: 10/24/2019 10:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**7.5**	nM	1.0	0.75	1	10/30/2019 17:25	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530008** Date Received: 10/29/2019 11:00 Matrix: Bubble Strip

Sample ID: **MW-95-201910** Date Collected: 10/24/2019 13:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**2.6**	nM	1.0	0.75	1	10/30/2019 17:37	TD	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31953 60319241 / WHIRLPOOL

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31953 60319241 / WHIRLPOOL

QC Batch: DISG/7883 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319530007, 319530008

METHOD BLANK: 64064

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Hydrogen	nM	<1.0	1.0	n

LABORATORY CONTROL SAMPLE & LCSD: 64065 64066

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Hydrogen	nM	24	25	26	102	108	80-120	5	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31953 60319241 / WHIRLPOOL

QC Batch: DISG/7894 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319530004, 319530005, 319530006

METHOD BLANK: 64156

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n
Acetylene	ug/l	<0.50	0.50	n

LABORATORY CONTROL SAMPLE & LCSD: 64158 64160

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	820	790	110	106	80-120	3.7	20	n
Ethane	ug/l	38	38	38	101	99	80-120	1.1	20	n
Ethene	ug/l	35	36	36	102	101	80-120	1.5	20	n
Acetylene	ug/l	33	32	31	96	94	80-120	2.7	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31953 60319241 / WHIRLPOOL

QC Batch: DISG/7895 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319530001, 319530002, 319530003

METHOD BLANK: 64162

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n

LABORATORY CONTROL SAMPLE & LCSD: 64164 64166

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	840	830	112	111	80-120	1.4	20	n
Ethane	ug/l	38	40	41	106	108	80-120	1.3	20	n
Ethene	ug/l	35	38	39	107	109	80-120	2	20	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 31953 60319241 / WHIRLPOOL

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
319530007	IW-147-201910			AM20GAX	DISG/7883
319530008	MW-95-201910			AM20GAX	DISG/7883
319530004	TMW-25-201910			AM20GAX	DISG/7894
319530005	IW-147-201910			AM20GAX	DISG/7894
319530006	MW-95-201910			AM20GAX	DISG/7894
319530001	TMW-34-201910			AM20GAX	DISG/7895
319530002	TMW-32-201910			AM20GAX	DISG/7895
319530003	MW-186-201910			AM20GAX	DISG/7895

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

2

Chain of Custody

PASI Kansas Laboratory

31953

Pace Analytical®
www.pacelabs.com

Workorder: 60319241 **Workorder Name:** WHIRLPOOL, FORT SMITH AR **Results Requested By:** 11/6/2019

Report / Invoice To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy P.O. Sub 0256

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Unpreserved					Requested Analysis: M/E/E + Acetylene + Hydrogen	M/E/E											LAB USE ONLY
1	TMW-34-201910	10/24/2019 17:30	60319241001	Water	3							X											
2	TMW-32-201910	10/24/2019 15:15	60319241002	Water	3							X											
3	MW-186-201910	10/24/2019 13:15	60319241003	Water	3							X											
4	TMW-25-201910	10/24/2019 10:55	60319241004	Water	3							X											
5	IW-147-201910	10/24/2019 10:15	60319241005	Water	4						X												
6	MW-95-201910	10/24/2019 13:05	60319241006	Water	4						X												

Transfers	Released By	Date/Time	Received By	Date/Time
1	Victor B — Pace	10/28/19 1800	[illegible]	10.29
2				1100
3				

Comments

Cooler Temperature on Receipt 1 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact Y or N

Cooler Receipt Form

Client Name: Pace Project: 60319241 Lab Work Order: 31953

A. **Shipping/Container Information** (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 121929814757

Custody Seal on Cooler/Box Present: (Yes) No Seals Intact: (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 1°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. **Laboratory Assignment/Log-in** (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?		✓		

Comments:_____

Cooler contents examined/received by: CJ Date: 10.29.19

Project Manager Review: ERF Date: 10/29/19

F-PAE-Q-009-rev.01, 3Oct2017

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 11, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60319241 / WHIRLPOOL**
Pace Workorder: 31954

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, October 29, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/11/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 16

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID	Sample ID	Matrix	Date Collected	Date Received
319540001	TMW-34-201910	Water	10/24/2019 17:30	10/29/2019 11:00
319540002	TMW-32-201910	Water	10/24/2019 15:15	10/29/2019 11:00
319540003	MW-186-201910	Water	10/24/2019 13:15	10/29/2019 11:00
319540004	TMW-25-201910	Water	10/24/2019 10:55	10/29/2019 11:00

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31954 60319241 / WHIRLPOOL

Batch Comments

Batch: EDON/4258 - Low Level Volatile Fatty Acids

The matrix spike and/or spike duplicate, recovery or relative percent difference; accuracy influenced by the reference sample 319240001. Analyte iso-Hexanoic acid. Batch acceptance based on laboratory control sample recovery.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID: **319540001** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-34-201910** Date Collected: 10/24/2019 17:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	11/6/2019 09:49	KB	
Acetic Acid	**<0.10**	mg/l	0.10	0.025	1	11/6/2019 09:49	KB	
Propionic Acid	**<0.10**	mg/l	0.10	0.0020	1	11/6/2019 09:49	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.098	1	11/6/2019 09:49	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.0070	1	11/6/2019 09:49	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 09:49	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 09:49	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.011	1	11/6/2019 09:49	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.011	1	11/6/2019 09:49	KB	M5
Hexanoic Acid	**<0.20**	mg/l	0.20	0.032	1	11/6/2019 09:49	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID: **319540002** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-32-201910** Date Collected: 10/24/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	11/6/2019 10:43	KB	
Acetic Acid	**<0.10**	mg/l	0.10	0.025	1	11/6/2019 10:43	KB	
Propionic Acid	**<0.10**	mg/l	0.10	0.0020	1	11/6/2019 10:43	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.098	1	11/6/2019 10:43	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.0070	1	11/6/2019 10:43	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 10:43	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 10:43	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.011	1	11/6/2019 10:43	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.011	1	11/6/2019 10:43	KB	M5
Hexanoic Acid	**<0.20**	mg/l	0.20	0.032	1	11/6/2019 10:43	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID: **319540003** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **MW-186-201910** Date Collected: 10/24/2019 13:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	11/6/2019 11:36	KB	
Acetic Acid	**1.4**	mg/l	0.10	0.025	1	11/6/2019 11:36	KB	
Propionic Acid	**0.46**	mg/l	0.10	0.0020	1	11/6/2019 11:36	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.098	1	11/6/2019 11:36	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.0070	1	11/6/2019 11:36	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 11:36	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 11:36	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.011	1	11/6/2019 11:36	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.011	1	11/6/2019 11:36	KB	M5
Hexanoic Acid	**<0.20**	mg/l	0.20	0.032	1	11/6/2019 11:36	KB	

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID: **319540004** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-25-201910** Date Collected: 10/24/2019 10:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	11/6/2019 12:29	KB	
Acetic Acid	**17**	mg/l	1.0	0.25	10	11/6/2019 23:41	KB	d
Propionic Acid	**27**	mg/l	1.0	0.020	10	11/6/2019 23:41	KB	d
Formic Acid	**0.51**	mg/l	0.50	0.098	1	11/6/2019 12:29	KB	
Butyric Acid	**1.9**	mg/l	0.10	0.0070	1	11/6/2019 12:29	KB	
Pyruvic Acid	**0.64**	mg/l	0.10	0.0050	1	11/6/2019 12:29	KB	
i-Pentanoic Acid	**0.21**	mg/l	0.10	0.0050	1	11/6/2019 12:29	KB	
Pentanoic Acid	**2.1**	mg/l	0.10	0.011	1	11/6/2019 12:29	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.011	1	11/6/2019 12:29	KB	M5
Hexanoic Acid	**0.34**	mg/l	0.20	0.032	1	11/6/2019 12:29	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31954 60319241 / WHIRLPOOL

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
d	The analyte concentration was determined from a dilution.
M5	The matrix spike duplicate sample recovery was outside laboratory control limits.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31954 60319241 / WHIRLPOOL

QC Batch: EDON/4258 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 319540001, 319540002, 319540003, 319540004

METHOD BLANK: 64193

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	
Formic Acid	mg/l	<0.50	0.50	
Butyric Acid	mg/l	<0.10	0.10	
Pyruvic Acid	mg/l	<0.10	0.10	
i-Pentanoic Acid	mg/l	<0.10	0.10	
Pentanoic Acid	mg/l	<0.10	0.10	
i-Hexanoic Acid	mg/l	<0.20	0.20	M5
Hexanoic Acid	mg/l	<0.20	0.20	

LABORATORY CONTROL SAMPLE: 64194

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	2.1	104	70-130	
Acetic Acid	mg/l	2	2.0	99	70-130	
Propionic Acid	mg/l	2	2.0	103	70-130	
Formic Acid	mg/l	2	1.9	94	70-130	
Butyric Acid	mg/l	2	2.0	100	70-130	
Pyruvic Acid	mg/l	2	1.8	92	70-130	
i-Pentanoic Acid	mg/l	2	2.0	99	70-130	
Pentanoic Acid	mg/l	2	2.0	98	70-130	
i-Hexanoic Acid	mg/l	2	2.0	98	70-130	M5
Hexanoic Acid	mg/l	2	1.9	94	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64195 64196 Original: 319240001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
EDonors											
Lactic Acid	mg/l	0.26	2	1.9	2.1	84	90	70-130	6.3	30	
Acetic Acid	mg/l	0.1	2	2.1	2.1	100	100	70-130	0.23	30	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31954 60319241 / WHIRLPOOL

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64195 64196 Original: 319240001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Propionic Acid	mg/l	0.0094	2	2.0	2.0	100	100	70-130	0.21	30	
Formic Acid	mg/l	0.27	2	2.0	2.0	85	86	70-130	1.7	30	
Butyric Acid	mg/l	0.025	2	1.9	2.0	96	98	70-130	2.4	30	
Pyruvic Acid	mg/l	0.061	2	1.7	1.7	81	84	70-130	3.4	30	
i-Pentanoic Acid	mg/l	0.19	2	2.0	2.1	92	94	70-130	1.6	30	
Pentanoic Acid	mg/l	0.018	2	1.8	1.9	91	96	70-130	5.3	30	
i-Hexanoic Acid	mg/l	0	2	1.5	1.4	74	69	70-130	7.6	30	M5
Hexanoic Acid	mg/l	0.023	2	1.6	1.8	77	88	70-130	13	30	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31954 60319241 / WHIRLPOOL

QC Batch: EDON/4265 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 319540004

METHOD BLANK: 64253

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	

LABORATORY CONTROL SAMPLE: 64254

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetic Acid	mg/l	2	2.0	100	70-130	
Propionic Acid	mg/l	2	2.1	105	70-130	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 31954 60319241 / WHIRLPOOL

QUALITY CONTROL PARAMETER QUALIFIERS

M5 The matrix spike duplicate sample recovery was outside laboratory control limits.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
319540001	TMW-34-201910			AM23G	EDON/4258
319540002	TMW-32-201910			AM23G	EDON/4258
319540003	MW-186-201910			AM23G	EDON/4258
319540004	TMW-25-201910			AM23G	EDON/4258
319540004	TMW-25-201910			AM23G	EDON/4265

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

3

Chain of Custody

PASI Kansas Laboratory

31954

Pace Analytical®
www.pacelabs.com

Workorder: 60319241 **Workorder Name:** WHIRLPOOL, FORT SMITH AR **Results Requested By:** 11/6/2019

Report / Invoice To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy Sub P.O. 10257

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Requested Analysis: Volatile Fatty Acids	LAB USE ONLY
1	TMW-34-201910	10/24/2019 17:30	60319241001	Water	2	X	
2	TMW-32-201910	10/24/2019 15:15	60319241002	Water	2	X	
3	MW-186-201910	10/24/2019 13:15	60319241003	Water	2	X	
4	TMW-25-201910	10/24/2019 10:55	60319241004	Water	2	X	
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	10/28/19 1800	[signature] PHES	10.29 1100
2				
3				

Comments: send 2 x 40ml vial BAK

Cooler Temperature on Receipt 2 °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

Cooler Receipt Form

Client Name: Pace Project: 6031924 Lab Work Order: 31954

A. **Shipping/Container Information** (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ **Air bill Present:** (Yes) No

Tracking Number: 121929814757

Custody Seal on Cooler/Box Present: (Yes) No **Seals Intact:** (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None **Ice Intact:** (Yes) Melted

Cooler Temperature: 1°C **Radiation Screened:** Yes (No) **Chain of Custody Present:** (Yes) No

Comments:_____

B. **Laboratory Assignment/Log-in** (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?			✓	

Comments:_____

Cooler contents examined/received by: CJ Date: 10.29.19

Project Manager Review: ERP Date: 10/30/19

F-PAE-Q-009-rev.01, 3Oct2017

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 06, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on October 25, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60319340001	**MW-25R-201910**	Water	10/25/19 08:50	10/25/19 15:48
60319340002	**EB-06-201910**	Water	10/25/19 09:50	10/25/19 15:48
60319340003	**TB-09-201910**	Water	10/25/19 08:50	10/25/19 15:48

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60319340001	**MW-25R-201910**	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319340002	**EB-06-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319340003	**TB-09-201910**	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
1 sample was analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
3 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 619801

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 620343

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
1 sample was analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
1 sample was analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 unpres
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
1 sample was analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 618456

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60319234002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2523702)
  - Nitrogen, NO2 plus NO3
  - Nitrogen, Nitrite

Additional Comments:

Analyte Comments:

QC Batch: 618456

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2523702)
  - Nitrogen, NO2 plus NO3

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

Method: **SM 5310C**
Description: 5310C TOC
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
1 sample was analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 620106

B: Analyte was detected in the associated method blank.
- BLANK for HBN 620106 [WETA/632 (Lab ID: 2529088)
  - Total Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 620106

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60319340001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2529090)
  - Total Organic Carbon

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

Sample: MW-25R-201910 **Lab ID: 60319340001** Collected: 10/25/19 08:50 Received: 10/25/19 15:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**69200**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:36	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/02/19 05:32	67-64-1	
Benzene	**0.31J**	ug/L	1.0	0.079	1		11/02/19 05:32	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/02/19 05:32	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/02/19 05:32	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/02/19 05:32	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/02/19 05:32	78-93-3	
Carbon disulfide	**1.8J**	ug/L	5.0	0.16	1		11/02/19 05:32	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/02/19 05:32	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/02/19 05:32	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/02/19 05:32	75-00-3	
Chloroform	**2.9**	ug/L	1.0	0.10	1		11/02/19 05:32	67-66-3	
Chloromethane	**1.4**	ug/L	1.0	0.16	1		11/02/19 05:32	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/02/19 05:32	124-48-1	
1,1-Dichloroethane	**1.3**	ug/L	1.0	0.097	1		11/02/19 05:32	75-34-3	
1,2-Dichloroethane	**0.64J**	ug/L	1.0	0.14	1		11/02/19 05:32	107-06-2	
1,1-Dichloroethene	**9.7**	ug/L	1.0	0.22	1		11/02/19 05:32	75-35-4	
cis-1,2-Dichloroethene	**1880**	ug/L	50.0	8.5	50		11/05/19 16:22	156-59-2	
trans-1,2-Dichloroethene	**59.3**	ug/L	1.0	0.17	1		11/02/19 05:32	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/02/19 05:32	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/02/19 05:32	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/02/19 05:32	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/02/19 05:32	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/02/19 05:32	591-78-6	
Methylene Chloride	**1.3**	ug/L	1.0	0.27	1		11/02/19 05:32	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/02/19 05:32	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/02/19 05:32	100-42-5	
1,1,2,2-Tetrachloroethane	**2.3**	ug/L	1.0	0.31	1		11/02/19 05:32	79-34-5	
Tetrachloroethene	**0.55J**	ug/L	1.0	0.22	1		11/02/19 05:32	127-18-4	
Toluene	**0.56J**	ug/L	1.0	0.14	1		11/02/19 05:32	108-88-3	
1,1,1-Trichloroethane	**0.45J**	ug/L	1.0	0.12	1		11/02/19 05:32	71-55-6	
1,1,2-Trichloroethane	**0.15J**	ug/L	1.0	0.10	1		11/02/19 05:32	79-00-5	
Trichloroethene	**5410**	ug/L	50.0	8.5	50		11/05/19 16:22	79-01-6	
Vinyl chloride	**113**	ug/L	1.0	0.11	1		11/02/19 05:32	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/02/19 05:32	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/02/19 05:32	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/02/19 05:32	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/02/19 05:32	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/02/19 05:32		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 11:07	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

Sample: MW-25R-201910 **Lab ID: 60319340001** Collected: 10/25/19 08:50 Received: 10/25/19 15:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**759**	mg/L	100	23.0	100		11/06/19 14:19	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.40**	mg/L	0.10	0.038	1		10/26/19 09:41		
Nitrogen, Nitrate	**0.40**	mg/L	0.10	0.067	1		10/26/19 09:41	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/26/19 09:41	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.98J**	mg/L	1.0	0.29	1		11/05/19 09:55	7440-44-0	B,M1

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

Sample: EB-06-201910 **Lab ID: 60319340002** Collected: 10/25/19 09:50 Received: 10/25/19 15:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/02/19 04:35	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/02/19 04:35	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/02/19 04:35	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/02/19 04:35	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/02/19 04:35	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/02/19 04:35	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/02/19 04:35	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/02/19 04:35	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/02/19 04:35	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/02/19 04:35	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/02/19 04:35	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/02/19 04:35	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/02/19 04:35	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/02/19 04:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/02/19 04:35	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/02/19 04:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 04:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 04:35	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/02/19 04:35	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/02/19 04:35	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/02/19 04:35	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/02/19 04:35	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/02/19 04:35	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/02/19 04:35	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/02/19 04:35	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/02/19 04:35	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/02/19 04:35	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/02/19 04:35	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/02/19 04:35	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/02/19 04:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/02/19 04:35	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 04:35	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/02/19 04:35	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/02/19 04:35	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		11/02/19 04:35	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	77-122		1		11/02/19 04:35	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/02/19 04:35	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/02/19 04:35		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

Sample: TB-09-201910 **Lab ID: 60319340003** Collected: 10/25/19 08:50 Received: 10/25/19 15:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/02/19 02:41	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/02/19 02:41	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/02/19 02:41	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/02/19 02:41	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/02/19 02:41	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/02/19 02:41	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/02/19 02:41	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/02/19 02:41	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/02/19 02:41	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/02/19 02:41	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/02/19 02:41	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/02/19 02:41	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/02/19 02:41	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/02/19 02:41	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/02/19 02:41	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/02/19 02:41	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 02:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 02:41	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/02/19 02:41	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/02/19 02:41	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/02/19 02:41	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/02/19 02:41	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/02/19 02:41	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/02/19 02:41	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/02/19 02:41	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/02/19 02:41	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/02/19 02:41	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/02/19 02:41	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/02/19 02:41	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/02/19 02:41	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/02/19 02:41	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/02/19 02:41	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/02/19 02:41	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/02/19 02:41	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/02/19 02:41	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/02/19 02:41	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/02/19 02:41	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/02/19 02:41		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

QC Batch: 618695
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 60319340001

METHOD BLANK: 2524474 Matrix: Water
Associated Lab Samples: 60319340001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	14.0	10/29/19 14:15	

LABORATORY CONTROL SAMPLE: 2524475

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	10100	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2524476 2524477

Parameter	Units	60319292002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	0.11 mg/L	10000	10000	9790	9650	97	95	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

QC Batch: 619801 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319340001, 60319340002, 60319340003

METHOD BLANK: 2527747 Matrix: Water
Associated Lab Samples: 60319340001, 60319340002, 60319340003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/02/19 02:12	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/02/19 02:12	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/02/19 02:12	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/02/19 02:12	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/02/19 02:12	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/02/19 02:12	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/02/19 02:12	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/02/19 02:12	
2-Hexanone	ug/L	ND	10.0	1.0	11/02/19 02:12	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/02/19 02:12	
Acetone	ug/L	ND	10.0	3.3	11/02/19 02:12	
Benzene	ug/L	ND	1.0	0.079	11/02/19 02:12	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/02/19 02:12	
Bromoform	ug/L	ND	1.0	0.21	11/02/19 02:12	
Bromomethane	ug/L	ND	5.0	0.32	11/02/19 02:12	
Carbon disulfide	ug/L	ND	5.0	0.16	11/02/19 02:12	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/02/19 02:12	
Chlorobenzene	ug/L	ND	1.0	0.13	11/02/19 02:12	
Chloroethane	ug/L	ND	1.0	0.42	11/02/19 02:12	
Chloroform	ug/L	ND	1.0	0.10	11/02/19 02:12	
Chloromethane	ug/L	ND	1.0	0.16	11/02/19 02:12	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/02/19 02:12	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/02/19 02:12	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/02/19 02:12	
Ethylbenzene	ug/L	ND	1.0	0.12	11/02/19 02:12	
Methylene Chloride	ug/L	ND	1.0	0.27	11/02/19 02:12	
Styrene	ug/L	ND	1.0	0.15	11/02/19 02:12	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/02/19 02:12	
Toluene	ug/L	ND	1.0	0.14	11/02/19 02:12	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/02/19 02:12	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/02/19 02:12	
Trichloroethene	ug/L	ND	1.0	0.17	11/02/19 02:12	
Vinyl chloride	ug/L	ND	1.0	0.11	11/02/19 02:12	
Xylene (Total)	ug/L	ND	3.0	0.34	11/02/19 02:12	
1,2-Dichloroethane-d4 (S)	%	101	77-122		11/02/19 02:12	
4-Bromofluorobenzene (S)	%	100	80-120		11/02/19 02:12	
Toluene-d8 (S)	%	100	80-120		11/02/19 02:12	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

LABORATORY CONTROL SAMPLE: 2527748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.6	98	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	18.7	94	71-122	
1,1,2-Trichloroethane	ug/L	20	20.3	102	76-123	
1,1-Dichloroethane	ug/L	20	20.3	102	78-117	
1,1-Dichloroethene	ug/L	20	22.8	114	74-122	
1,2-Dichloroethane	ug/L	20	19.6	98	73-120	
1,2-Dichloropropane	ug/L	20	20.7	104	78-115	
2-Butanone (MEK)	ug/L	100	100	100	54-133	
2-Hexanone	ug/L	100	94.8	95	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	103	103	62-130	
Acetone	ug/L	100	84.1	84	54-130	
Benzene	ug/L	20	20.2	101	80-120	
Bromodichloromethane	ug/L	20	18.3	92	78-121	
Bromoform	ug/L	20	15.6	78	62-137	
Bromomethane	ug/L	20	21.2	106	41-145	
Carbon disulfide	ug/L	20	19.7	99	64-119	
Carbon tetrachloride	ug/L	20	19.5	98	77-122	
Chlorobenzene	ug/L	20	20.1	101	80-123	
Chloroethane	ug/L	20	20.5	103	60-146	
Chloroform	ug/L	20	21.0	105	81-116	
Chloromethane	ug/L	20	21.2	106	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.3	96	80-120	
cis-1,3-Dichloropropene	ug/L	20	18.4	92	78-118	
Dibromochloromethane	ug/L	20	17.4	87	73-128	
Ethylbenzene	ug/L	20	19.4	97	80-120	
Methylene Chloride	ug/L	20	21.7	108	80-126	
Styrene	ug/L	20	19.4	97	85-120	
Tetrachloroethene	ug/L	20	19.1	95	77-121	
Toluene	ug/L	20	19.5	98	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.1	96	80-120	
trans-1,3-Dichloropropene	ug/L	20	16.6	83	76-123	
Trichloroethene	ug/L	20	24.0	120	80-121	
Vinyl chloride	ug/L	20	20.8	104	46-162	
Xylene (Total)	ug/L	60	58.1	97	80-120	
1,2-Dichloroethane-d4 (S)	%			101	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			98	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

QC Batch: 620343
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319340001

METHOD BLANK: 2529674 Matrix: Water
Associated Lab Samples: 60319340001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/05/19 14:42	
Trichloroethene	ug/L	ND	1.0	0.17	11/05/19 14:42	
1,2-Dichloroethane-d4 (S)	%	99	77-122		11/05/19 14:42	
4-Bromofluorobenzene (S)	%	99	80-120		11/05/19 14:42	
Toluene-d8 (S)	%	101	80-120		11/05/19 14:42	

LABORATORY CONTROL SAMPLE: 2529675

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/L	20	18.8	94	80-120	
Trichloroethene	ug/L	20	21.8	109	80-121	
1,2-Dichloroethane-d4 (S)	%			100	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

QC Batch: 618515
QC Batch Method: SM 4500-S-2 D
Analysis Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60319340001

METHOD BLANK: 2524109 Matrix: Water
Associated Lab Samples: 60319340001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	0.039	10/28/19 10:58	

LABORATORY CONTROL SAMPLE: 2524110

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.49	99	80-120	

MATRIX SPIKE SAMPLE: 2524111

Parameter	Units	60319063002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.5	0.51	101	75-125	

SAMPLE DUPLICATE: 2524112

Parameter	Units	60319116002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

SAMPLE DUPLICATE: 2524113

Parameter	Units	60319146002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

QC Batch: 620340 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60319340001

METHOD BLANK: 2529654 Matrix: Water
Associated Lab Samples: 60319340001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	0.23	11/05/19 17:36	

LABORATORY CONTROL SAMPLE: 2529655

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.4	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2529656 2529657

Parameter	Units	60319114001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	27.5	50	50	78.5	78.6	102	102	80-120	0	15	

MATRIX SPIKE SAMPLE: 2529658

Parameter	Units	60319452006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	587	250	857	108	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

QC Batch: 618456
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 60319340001

METHOD BLANK: 2523700 Matrix: Water
Associated Lab Samples: 60319340001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	0.067	10/26/19 09:37	
Nitrogen, Nitrite	mg/L	ND	0.10	0.067	10/26/19 09:37	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	10/26/19 09:37	

LABORATORY CONTROL SAMPLE: 2523701

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	1.0	101	70-130	
Nitrogen, Nitrite	mg/L	1	1.0	101	90-110	
Nitrogen, NO2 plus NO3	mg/L	2	2.0	101	90-110	

MATRIX SPIKE SAMPLE: 2523702

Parameter	Units	60319234002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	4.3	1	4.9	55	70-130	
Nitrogen, Nitrite	mg/L	<0.067	1	1.1	113	90-110	M1
Nitrogen, NO2 plus NO3	mg/L	4.3	2	6.0	84	90-110	E,M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

QC Batch: 620106 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60319340001

METHOD BLANK: 2529088 Matrix: Water
Associated Lab Samples: 60319340001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	0.30J	1.0	0.29	11/05/19 09:28	

LABORATORY CONTROL SAMPLE: 2529089

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.8	115	80-120	

MATRIX SPIKE SAMPLE: 2529090

Parameter	Units	60319340001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	0.98J	5	4.1	63	80-120	M1

SAMPLE DUPLICATE: 2529091

Parameter	Units	60319122002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	4.4	4.4	1	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 619801

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 620101

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 620343

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60319340

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319340001	**MW-25R-201910**	EPA 3010	618695	EPA 6010	618728
60319340001	**MW-25R-201910**	EPA 5030B/8260	619801		
60319340001	**MW-25R-201910**	EPA 5030B/8260	620343		
60319340002	**EB-06-201910**	EPA 5030B/8260	619801		
60319340003	**TB-09-201910**	EPA 5030B/8260	619801		
60319340001	**MW-25R-201910**	SM 4500-S-2 D	618515		
60319340001	**MW-25R-201910**	EPA 300.0	620340		
60319340001	**MW-25R-201910**	EPA 353.2	618456		
60319340001	**MW-25R-201910**	SM 5310C	620106		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in

WO#: 60319340

60319340

ALL S... Y

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller

Site Collection Info/Address: Fort Smith, AR

Customer Project Name/Number:

State: AR County/City: Sebastian Time Zone Collected: PT MT CT ET

Phone: 636-579-6883
Email: nzurweller@ramboll.com

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print): Nick Zurweller

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature):

Turnaround Date Required: Standard

Immediately Packed on Ice? [X] Yes [ ] No

Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold

RUSH: Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply) Same

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type: 3 D 1 U 2 5

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

60319340

↓ LAB USE ONLY: ↓

Customer Sample ID	Matrix*	Comp/Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8260 VOC Full List	(MEEA) Methane, Ethane, Ethene, Acetylene	Metals, Total Iron	Sulfate, Nitrate	Total Organic Carbon	Sulfide					Lab Sample # / Comments
MW-25R-201910	GW	Grab	10/25/19	0850				10	X	X	X	X	X	X	BP3U	AG3S	BP3N	BP3Z 3DG9H 30THR	001
EB-06-201910	W		10/25/19	0950				3	X									↓	002
TB-09-201910								2	X									2DG9H	003

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [X] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used: Bubble Bag

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: T-296

Cooler Temp Upon Receipt 4.6 oC

Cooler Therm Corr. Factor +0.0 oC

Cooler Temp Corrected 4.6 oC

Comments:

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 1 of 1

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Victoria Siegel (REH)	10/25/19 1548	H Salm /Pace	10.25.19 1548
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

F-ALL-C-010-rev.00, 05Jul2018

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 6, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60319340 / WHIRLPOOL**
Pace Workorder: 31955

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, October 29, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/06/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 11

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31955 60319340 / WHIRLPOOL

Lab ID	Sample ID	Matrix	Date Collected	Date Received
319550001	MW-25R-201910	Water	10/25/2019 08:50	10/29/2019 11:00

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31955 60319340 / WHIRLPOOL

Workorder Comments

The container pH for samples 31955 (0001) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31955 60319340 / WHIRLPOOL

Lab ID: **319550001** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **MW-25R-201910** Date Collected: 10/25/2019 08:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**23**	ug/l	0.50	0.094	1	11/4/2019 07:15	TD	n
Ethane	**17**	ug/l	0.10	0.011	1	11/4/2019 07:15	TD	n
Ethene	**48**	ug/l	0.10	0.0080	1	11/4/2019 07:15	TD	n
Acetylene	**2.0**	ug/l	0.50	0.037	1	11/4/2019 07:15	TD	D2,n

nelac ACCREDITED IN ACCORDANCE WITH

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31955 60319340 / WHIRLPOOL

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.
D2	The laboratory control sample duplicate relative percent difference (RPD) exceeded laboratory control limits.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31955 60319340 / WHIRLPOOL

QC Batch: DISG/7891 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319550001

METHOD BLANK: 64135

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n
Acetylene	ug/l	<0.50	0.50	D2,n

LABORATORY CONTROL SAMPLE & LCSD: 64137 64139

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	730	800	98	106	80-120	8.7	20	n
Ethane	ug/l	38	34	40	91	106	80-120	15	20	n
Ethene	ug/l	35	32	38	92	107	80-120	16	20	n
Acetylene	ug/l	33	26	33	80	100	80-120	22	20	D2,n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 31955 60319340 / WHIRLPOOL

QUALITY CONTROL PARAMETER QUALIFIERS

D2	The laboratory control sample duplicate relative percent difference (RPD) exceeded laboratory control limits.
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31955 60319340 / WHIRLPOOL

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
319550001	MW-25R-201910			AM20GAX	DISG/7891

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Chain of Custody

PASI Kansas Laboratory

31955

Pace Analytical®
www.pacelabs.com

Workorder: 60319340 **Workorder Name:** WHIRLPOOL, FORT SMITH AR **Results Requested By:** 11/6/2019

Report / Invoice To	Subcontract To	
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy	P.O. Sub-10253

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Requested Analysis: M/E/E + Acetylene	LAB USE ONLY
1	MW-25R-201910	10/25/2019 08:50	60319340001	Water	3	X	
2							
3							
4							
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	Victor B / Pace	10/28/19 1800	[signature]	1029
2				1100
3				

Comments

Send 3 x 40mL TSP

Cooler Temperature on Receipt ____ °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

Cooler Receipt Form

Client Name: Pace Project: 60319340 Lab Work Order: 31955

A. **Shipping/Container Information** (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ **Air bill Present:** (Yes) No

Tracking Number: 121929814757

Custody Seal on Cooler/Box Present: (Yes) No **Seals Intact:** (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None **Ice Intact:** (Yes) Melted

Cooler Temperature: 1°C **Radiation Screened:** Yes (No) **Chain of Custody Present:** (Yes) No

Comments:_____

B. **Laboratory Assignment/Log-in** (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?		✓		

Comments:_____

_____

Cooler contents examined/received by: CJ Date: 10.29.19

Project Manager Review: DRF Date: 10/30/19

F-PAE-Q-009-rev.01, 3Oct2017

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 09, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on November 21, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Haley Ahlers, Ramboll
Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60322105001	**IW-73-201910**	Water	11/20/19 12:10	11/21/19 02:10

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60322105001	**IW-73-201910**	EPA 6010	HKC	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	BLA	1	PASI-K
		SM 5310C	AJS2	1	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Ramboll_AR
Date: December 09, 2019

General Information:
1 sample was analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll_AR
Date: December 09, 2019

General Information:
1 sample was analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 625527

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: Ramboll_AR
Date: December 09, 2019

General Information:
1 sample was analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

Method: **SM 5310C**
Description: 5310C TOC
Client: Ramboll_AR
Date: December 09, 2019

General Information:
1 sample was analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

Sample: IW-73-201910 **Lab ID: 60322105001** Collected: 11/20/19 12:10 Received: 11/21/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**637**	ug/L	50.0	14.0	1	12/03/19 16:41	12/05/19 12:40	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		12/03/19 12:52	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		12/03/19 12:52	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		12/03/19 12:52	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		12/03/19 12:52	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		12/03/19 12:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		12/03/19 12:52	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		12/03/19 12:52	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		12/03/19 12:52	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		12/03/19 12:52	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		12/03/19 12:52	75-00-3	
Chloroform	**0.14J**	ug/L	1.0	0.10	1		12/03/19 12:52	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		12/03/19 12:52	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		12/03/19 12:52	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		12/03/19 12:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		12/03/19 12:52	107-06-2	
1,1-Dichloroethene	**0.73J**	ug/L	1.0	0.22	1		12/03/19 12:52	75-35-4	
cis-1,2-Dichloroethene	**7.0**	ug/L	1.0	0.17	1		12/03/19 12:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		12/03/19 12:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		12/03/19 12:52	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		12/03/19 12:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		12/03/19 12:52	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		12/03/19 12:52	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		12/03/19 12:52	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		12/03/19 12:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		12/03/19 12:52	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		12/03/19 12:52	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		12/03/19 12:52	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		12/03/19 12:52	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		12/03/19 12:52	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		12/03/19 12:52	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		12/03/19 12:52	79-00-5	
Trichloroethene	**215**	ug/L	5.0	0.85	5		12/03/19 13:06	79-01-6	
Vinyl chloride	**0.16J**	ug/L	1.0	0.11	1		12/03/19 12:52	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		12/03/19 12:52	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	90	%	80-120		1		12/03/19 12:52	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	77-122		1		12/03/19 12:52	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		12/03/19 12:52	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		12/03/19 12:52		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		11/25/19 15:04	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

Sample: IW-73-201910 **Lab ID: 60322105001** Collected: 11/20/19 12:10 Received: 11/21/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.40J**	mg/L	1.0	0.29	1		12/02/19 13:33	7440-44-0	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

QC Batch: 625948
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 60322105001

METHOD BLANK: 2551497 Matrix: Water
Associated Lab Samples: 60322105001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	14.0	12/05/19 12:00	

LABORATORY CONTROL SAMPLE: 2551498

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	10200	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2551499 2551500

Parameter	Units	60321729005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	951	10000	10000	10700	10600	98	96	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

QC Batch: 625527
QC Batch Method: EPA 5030B/8260
Associated Lab Samples: 60322105001

Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge

METHOD BLANK: 2550475
Matrix: Water
Associated Lab Samples: 60322105001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	12/03/19 08:06	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	12/03/19 08:06	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	12/03/19 08:06	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	12/03/19 08:06	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	12/03/19 08:06	
1,2-Dichloroethane	ug/L	0.14J	1.0	0.14	12/03/19 08:06	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	12/03/19 08:06	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	12/03/19 08:06	
2-Hexanone	ug/L	ND	10.0	1.0	12/03/19 08:06	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	12/03/19 08:06	
Acetone	ug/L	ND	10.0	3.3	12/03/19 08:06	
Benzene	ug/L	ND	1.0	0.079	12/03/19 08:06	
Bromodichloromethane	ug/L	ND	1.0	0.17	12/03/19 08:06	
Bromoform	ug/L	ND	1.0	0.21	12/03/19 08:06	
Bromomethane	ug/L	ND	5.0	0.32	12/03/19 08:06	
Carbon disulfide	ug/L	ND	5.0	0.16	12/03/19 08:06	
Carbon tetrachloride	ug/L	ND	1.0	0.084	12/03/19 08:06	
Chlorobenzene	ug/L	ND	1.0	0.13	12/03/19 08:06	
Chloroethane	ug/L	ND	1.0	0.42	12/03/19 08:06	
Chloroform	ug/L	ND	1.0	0.10	12/03/19 08:06	
Chloromethane	ug/L	ND	1.0	0.16	12/03/19 08:06	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	12/03/19 08:06	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	12/03/19 08:06	
Dibromochloromethane	ug/L	ND	1.0	0.15	12/03/19 08:06	
Ethylbenzene	ug/L	ND	1.0	0.12	12/03/19 08:06	
Methylene Chloride	ug/L	ND	1.0	0.27	12/03/19 08:06	
Styrene	ug/L	ND	1.0	0.15	12/03/19 08:06	
Tetrachloroethene	ug/L	ND	1.0	0.22	12/03/19 08:06	
Toluene	ug/L	ND	1.0	0.14	12/03/19 08:06	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	12/03/19 08:06	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	12/03/19 08:06	
Trichloroethene	ug/L	ND	1.0	0.17	12/03/19 08:06	
Vinyl chloride	ug/L	ND	1.0	0.11	12/03/19 08:06	
Xylene (Total)	ug/L	ND	3.0	0.34	12/03/19 08:06	
1,2-Dichloroethane-d4 (S)	%	91	77-122		12/03/19 08:06	
4-Bromofluorobenzene (S)	%	91	80-120		12/03/19 08:06	
Toluene-d8 (S)	%	101	80-120		12/03/19 08:06	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

LABORATORY CONTROL SAMPLE: 2550476

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.1	100	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	17.5	87	71-122	
1,1,2-Trichloroethane	ug/L	20	19.8	99	76-123	
1,1-Dichloroethane	ug/L	20	19.2	96	78-117	
1,1-Dichloroethene	ug/L	20	19.8	99	74-122	
1,2-Dichloroethane	ug/L	20	17.7	88	73-120	
1,2-Dichloropropane	ug/L	20	19.0	95	78-115	
2-Butanone (MEK)	ug/L	100	73.0	73	54-133	
2-Hexanone	ug/L	100	78.6	79	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	81.0	81	62-130	
Acetone	ug/L	100	89.4	89	54-130	
Benzene	ug/L	20	20.7	104	80-120	
Bromodichloromethane	ug/L	20	19.5	97	78-121	
Bromoform	ug/L	20	20.0	100	62-137	
Bromomethane	ug/L	20	23.6	118	41-145	
Carbon disulfide	ug/L	20	20.1	101	64-119	
Carbon tetrachloride	ug/L	20	20.3	102	77-122	
Chlorobenzene	ug/L	20	22.0	110	80-123	
Chloroethane	ug/L	20	18.2	91	60-146	
Chloroform	ug/L	20	19.4	97	81-116	
Chloromethane	ug/L	20	15.0	75	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.3	101	80-120	
cis-1,3-Dichloropropene	ug/L	20	19.9	100	78-118	
Dibromochloromethane	ug/L	20	19.9	99	73-128	
Ethylbenzene	ug/L	20	21.5	108	80-120	
Methylene Chloride	ug/L	20	21.1	105	80-126	
Styrene	ug/L	20	21.5	108	85-120	
Tetrachloroethene	ug/L	20	23.2	116	77-121	
Toluene	ug/L	20	21.1	106	80-120	
trans-1,2-Dichloroethene	ug/L	20	21.6	108	80-120	
trans-1,3-Dichloropropene	ug/L	20	18.4	92	76-123	
Trichloroethene	ug/L	20	20.3	101	80-121	
Vinyl chloride	ug/L	20	18.7	94	46-162	
Xylene (Total)	ug/L	60	64.3	107	80-120	
1,2-Dichloroethane-d4 (S)	%			92	77-122	
4-Bromofluorobenzene (S)	%			93	80-120	
Toluene-d8 (S)	%			101	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

QC Batch: 624634
QC Batch Method: SM 4500-S-2 D
Analysis Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60322105001

METHOD BLANK: 2547056 Matrix: Water
Associated Lab Samples: 60322105001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	0.039	11/25/19 14:55	

LABORATORY CONTROL SAMPLE: 2547057

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.50	101	80-120	

MATRIX SPIKE SAMPLE: 2547058

Parameter	Units	60322030001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.5	0.54	107	75-125	

SAMPLE DUPLICATE: 2547059

Parameter	Units	60322046002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

SAMPLE DUPLICATE: 2547060

Parameter	Units	60322081001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

QC Batch: 625411 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60322105001

METHOD BLANK: 2550286 Matrix: Water
Associated Lab Samples: 60322105001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	12/02/19 09:46	

LABORATORY CONTROL SAMPLE: 2550287

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.7	115	80-120	

MATRIX SPIKE SAMPLE: 2550288

Parameter	Units	75119277002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	ND	5	5.0	86	80-120	

SAMPLE DUPLICATE: 2550289

Parameter	Units	75119559001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	5.7	5.7	0	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 625527

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322105

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60322105001	**IW-73-201910**	EPA 3010	625948	EPA 6010	625980
60322105001	**IW-73-201910**	EPA 5030B/8260	625527		
60322105001	**IW-73-201910**	SM 4500-S-2 D	624634		
60322105001	**IW-73-201910**	SM 5310C	625411		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60322105

60322105

Client Name: Ramboll

Courier: FedEx ☐ UPS ☐ VIA ☑ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☑ Zplc

Thermometer Used: T-298 **Type of Ice:** (Wet) Blue None

HS

Cooler Temperature (°C): As-read 0.4 Corr. Factor +0.0 Corrected 0.4

Date and initials of person examining contents: 11.21.19

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	Did not receive unpreserved volume
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☑No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: Per client, they will submit unpreserved volume at a later date.

Project Manager Review: Jami Church Date: 11/22/19

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	Ramboll
Address:	
Email To:	
Phone: / Fax:	
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Tamara House-knight
Copy To:	Nick Zumwalter/Haley Anders
Purchase Order No.:	
Project Name:	WMIP0001
Project Number:	

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes — MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	~~$Na_2S_2O_3$~~ Zn Acetate	~~Methanol~~ ~~Bisulfate~~ HA	Other TSP	Analysis Test ↓ Y/N	8260 Full List	MEEA Metals, Tot. Iron	Sulfate, Nitrate	TOC	Sulfide	Hydrogen	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	IW-73-201910	WT	G	11/20/19	1210	n/a	n/a		10	X	X	X	X	X	X		X		X	X	X	X	X	X		60322105
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

* Note: Use 601 TOC amber bottle for Sulfate/Nitrate analysis as well as TOC

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Haley Anders/Ramboll	11/20/19	1815	H Sale /Pace	11.21.19	0210	0.4	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Haley Anders

SIGNATURE of SAMPLER: Haley Anders DATE Signed (MM/DD/YY): 11/20/19

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

December 9, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60322105**
Pace Workorder: 32252

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, November 26, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 12/09/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

13
Total Number of Pages ____

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 32252 60322105

Lab ID	Sample ID	Matrix	Date Collected	Date Received
322520001	IW-73-201910	Water	11/20/2019 12:10	11/26/2019 10:30
322520002	IW-73-201910	Bubble Strip	11/20/2019 12:10	11/26/2019 10:30

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 32252 60322105

Workorder Comments

The container pH for samples 32252 (0001) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

Samples 32252 (0002) were analyzed outside the hold time of 14 days from collection for the Hydrogen, method AM20GAx. Because the bubble samples were collected using PAES procedure SM9, any affect to the vapor phase component concentrations due to the delay of the analysis is expected to be minimal.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 32252 60322105

Lab ID: **322520001** Date Received: 11/26/2019 10:30 Matrix: Water

Sample ID: **IW-73-201910** Date Collected: 11/20/2019 12:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**2.6**	ug/l	0.50	0.094	1	12/2/2019 06:47	TD	n
Ethane	**<0.10**	ug/l	0.10	0.011	1	12/2/2019 06:47	TD	n
Ethene	**<0.10**	ug/l	0.10	0.0080	1	12/2/2019 06:47	TD	n
Acetylene	**<0.50**	ug/l	0.50	0.037	1	12/2/2019 06:47	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 32252 60322105

Lab ID: **322520002** Date Received: 11/26/2019 10:30 Matrix: Bubble Strip

Sample ID: **IW-73-201910** Date Collected: 11/20/2019 12:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**2.7**	nM	1.0	0.75	1	12/7/2019 12:42	TD	H1,n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 32252 60322105

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.
H1	The sample was prepared or the analysis was conducted outside the method specific holding time.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 32252 60322105

QC Batch: DISG/7951 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 322520001

METHOD BLANK: 64663

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n
Acetylene	ug/l	<0.50	0.50	n

LABORATORY CONTROL SAMPLE & LCSD: 64665 64667

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	730	740	97	100	80-120	2.3	20	n
Ethane	ug/l	38	38	38	101	100	80-120	0.7	20	n
Ethene	ug/l	35	36	36	102	101	80-120	1	20	n
Acetylene	ug/l	33	29	30	89	93	80-120	4.7	20	n

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64681 64682 Original: 322010001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK											
Methane	ug/l	540	750	1400	1400	122	114	70-130	4.2	20	n
Ethane	ug/l	10	38	53	50	111	106	70-130	4.3	20	n
Ethene	ug/l	3.5	35	42	41	109	106	70-130	2.7	20	n
Acetylene	ug/l	0	33	34	32	103	99	70-130	4.4	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 32252 60322105

QC Batch: DISG/7966 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 322520002

METHOD BLANK: 64805

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Hydrogen	nM	<1.0	1.0	n

LABORATORY CONTROL SAMPLE & LCSD: 64806 64807

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Hydrogen	nM	24	26	26	107	109	80-120	1.3	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 32252 60322105

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 32252 60322105

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
322520001	IW-73-201910			AM20GAX	DISG/7951
322520002	IW-73-201910			AM20GAX	DISG/7966

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Chain of Custody

PASI Kansas Laboratory

Pace Analytical®
www.pacelabs.com

Workorder: 60322105 **Workorder Name:** WHIRLPOOL, FORT SMITH AR **Results Requested By:** 12/5/2019

Report / Invoice To	Subcontract To	Requested Analysis
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com 32252	Pace Energy P.O._____	

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	M/E/E + Acetylene & Hydrogen	LAB USE ONLY
1	IW-73-201910	11/20/2019 12:10	60322105001	Water	4	X	
2							
3							
4							
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] FEDEX	11/25/19 1800	[signature] PACES	11.26.19 1030
2				
3				

Comments

Cooler Temperature on Receipt 1 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact (Y) or N

Cooler Receipt Form

Client Name: Pace **Project:** 60322105 **Lab Work Order:** 32252

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ **Air bill Present:** (Yes) No

Tracking Number: 1219298 31587

Custody Seal on Cooler/Box Present: (Yes) No **Seals Intact:** (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None **Ice Intact:** (Yes) Melted

Cooler Temperature: 1°C **Radiation Screened:** Yes (No) **Chain of Custody Present:** (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags			✓	
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?		✓		

Comments:_____

_____

Cooler contents examined/received by : LG **Date:** 11.26.19

Project Manager Review : JVL **Date:** 11.26.19

F-PAE-Q-009-rev.01, 3Oct2017

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 05, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322110

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on November 22, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Haley Ahlers, Ramboll
Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322110

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322110

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60322110001	**IW-73-201910**	Water	11/21/19 13:50	11/22/19 08:30

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322110

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60322110001	**IW-73-201910**	EPA 300.0	MGS	1	PASI-K
		EPA 353.2	LDB	3	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322110

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Ramboll_AR
Date: December 05, 2019

General Information:
1 sample was analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 625956

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60321788013,60322173001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2551539)
  - Sulfate

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322110

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 unpres
Client: Ramboll_AR
Date: December 05, 2019

General Information:
1 sample was analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 624345

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60322164001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2545835)
  - Nitrogen, NO2 plus NO3

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322110

Sample: IW-73-201910 **Lab ID: 60322110001** Collected: 11/21/19 13:50 Received: 11/22/19 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**3.5**	mg/L	1.0	0.23	1		12/05/19 13:12	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		11/23/19 09:47		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		11/23/19 09:47	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		11/23/19 09:47	14797-65-0	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322110

QC Batch: 625956
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60322110001

METHOD BLANK: 2551535 Matrix: Water
Associated Lab Samples: 60322110001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	0.23	12/04/19 13:38	

METHOD BLANK: 2552784 Matrix: Water
Associated Lab Samples: 60322110001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	0.23	12/05/19 09:18	

LABORATORY CONTROL SAMPLE: 2551536

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	100	93.2	93	90-110	

LABORATORY CONTROL SAMPLE: 2552787

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.8	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2551537 2551538

Parameter	Units	60322173001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	23.7J	250	250	273	274	100	100	80-120	0	15	

MATRIX SPIKE SAMPLE: 2551539

Parameter	Units	60321788013 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	<0.23	5	7.2	145	80-120	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322110

QC Batch: 624345
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 60322110001

METHOD BLANK: 2545833 Matrix: Water
Associated Lab Samples: 60322110001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	0.067	11/23/19 09:35	
Nitrogen, Nitrite	mg/L	ND	0.10	0.067	11/23/19 09:35	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	11/23/19 09:35	

LABORATORY CONTROL SAMPLE: 2545834

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	1.1	113	70-130	
Nitrogen, Nitrite	mg/L	1	0.98	98	90-110	
Nitrogen, NO2 plus NO3	mg/L	2	2.1	106	90-110	

MATRIX SPIKE SAMPLE: 2545835

Parameter	Units	60322164001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	268	100	351	83	70-130	
Nitrogen, Nitrite	mg/L	ND	100	91.4	91	90-110	
Nitrogen, NO2 plus NO3	mg/L	268	200	443	87	90-110	M1

SAMPLE DUPLICATE: 2545836

Parameter	Units	60322164002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	255	252	1	20	
Nitrogen, Nitrite	mg/L	ND	ND		20	
Nitrogen, NO2 plus NO3	mg/L	255	252	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322110

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322110

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60322110001	**IW-73-201910**	EPA 300.0	625956		
60322110001	**IW-73-201910**	EPA 353.2	624345		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO#: 60322110

60322110

Client Name: Ramboll

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 7782 2006 3292 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: T296 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 1.5 **Corr. Factor** +0.0 **Corrected** 1.5

Date and initials of person examining contents: VB 11/22/19

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	11/22 VB ☑Yes ☐No ☐N/A	NOV
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☐Yes ☐No ☑N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Jami Church 11/22/19

Project Manager Review: _____ Date: _____

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	Ramboll
Address:	
Email To:	
Phone: / Fax:	
Requested Due Date/TAT:	Standard

Section B Required Project Information:

Report To:	Tamara House-Knight
Copy To:	Nick Zurweller / Haley Anlers
Purchase Order No.:	
Project Name:	Whirlpool
Project Number:	

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Sulfate, Nitrate	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	IW-73-201910	WT	G	11/21/19	1350	n/a	n/a		1	X									X		60322110 001
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Haley Anlers / Ramboll	11/21/19	1800	H Sal — / Pace	11.22.19	0830	1.5	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Haley Anlers

SIGNATURE of SAMPLER: Haley Anlers DATE Signed (MM/DD/YY): 11/21/19

Temp In °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: Tamara R. House-Knight
Ramboll
124 W. Capitol Avenue
Suite 1605
Little Rock, AR 72201

Phone: 501-907-9437

Fax:

Identifier: 091QJ **Date Rec:** 10/23/2019 **Report Date:** 10/31/2019

Client Project #: **Client Project Name:** Whirlpool Fort Smith

Purchase Order #:

Analysis Requested: CENSUS

Reviewed By:



NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **Ramboll**
Project: Whirlpool Fort Smith

MI Project Number: **091QJ**
Date Received: 10/23/2019

Sample Information

Client Sample ID:		**TMW-10-201910**	**TMW-11-201910**	**MW-89-201910**	**MW-50R-201910**	**RW-69-201910**
Sample Date:		10/22/2019	10/22/2019	10/22/2019	10/23/2019	10/23/2019
Units:		cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst/Reviewer:		HT	HT	HT	HT	HT
Dechlorinating Bacteria						
Dehalococcoides	*DHC*	**2.00E+04**	**6.38E+02**	<5.00E-01	**2.30E+00**	**7.00E-01**
tceA Reductase	TCE	**1.89E+03**	**2.89E+01**	<5.00E-01	<1.70E+00	<5.00E-01
BAV1 Vinyl Chloride Reductase	BVC	<1.00E+01	<2.00E+00	<5.00E-01	<1.70E+00	<5.00E-01
Vinyl Chloride Reductase	VCR	**1.79E+03**	**4.03E+01**	<5.00E-01	<1.70E+00	<5.00E-01

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **Ramboll**
Project: Whirlpool Fort Smith

MI Project Number: **091QJ**
Date Received: 10/23/2019

Sample Information

Client Sample ID:		**ITMW-9-201910**	**MW-87-201910**	**MW-58R-201910**	**MW-38-201910**	**MW-147-201910**
Sample Date:		10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/24/2019
Units:		cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst/Reviewer:		HT	HT	HT	HT	HT
Dechlorinating Bacteria						
Dehalococcoides	*DHC*	<5.00E-01	**5.00E-01 (J)**	**4.00E-01 (J)**	**1.24E+02**	<3.10E+00
tceA Reductase	TCE	<5.00E-01	<5.00E-01	<7.00E-01	<5.00E-01	<3.10E+00
BAV1 Vinyl Chloride Reductase	BVC	<5.00E-01	<5.00E-01	<7.00E-01	**2.46E+01**	<3.10E+00
Vinyl Chloride Reductase	VCR	<5.00E-01	<5.00E-01	<7.00E-01	<5.00E-01	<3.10E+00

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **Ramboll**
Project: Whirlpool Fort Smith

MI Project Number: **091QJ**
Date Received: 10/23/2019

Sample Information

Client Sample ID:		**MW-95-201910**	**MW-25R-201910**
Sample Date:		10/24/2019	10/25/2019
Units:		cells/mL	cells/mL
Analyst/Reviewer:		HT	HT
Dechlorinating Bacteria			
Dehalococcoides	*DHC*	<3.10E+00	<2.30E+00
tceA Reductase	TCE	<3.10E+00	<2.30E+00
BAV1 Vinyl Chloride Reductase	BVC	<3.10E+00	<2.30E+00
Vinyl Chloride Reductase	VCR	<3.10E+00	<2.30E+00

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

Quality Assurance/Quality Control Data

Samples Received 10/23/2019

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
DHC	10/23/2019	10/31/2019	0 °C	109%	non-detect	non-detect
BVC	10/23/2019	10/31/2019	0 °C	102%	non-detect	non-detect
TCE	10/23/2019	10/31/2019	0 °C	99%	non-detect	non-detect
VCR	10/23/2019	10/31/2019	0 °C	100%	non-detect	non-detect

Samples Received 10/24/2019

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
DHC	10/24/2019	10/31/2019	0 °C	107%	non-detect	non-detect
BVC	10/24/2019	10/31/2019	0 °C	102%	non-detect	non-detect
TCE	10/24/2019	10/31/2019	0 °C	99%	non-detect	non-detect
VCR	10/24/2019	10/31/2019	0 °C	100%	non-detect	non-detect

Samples Received 10/25/2019

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
DHC	10/25/2019	10/31/2019	0 °C	112%	non-detect	non-detect
BVC	10/25/2019	10/31/2019	0 °C	103%	non-detect	non-detect
TCE	10/25/2019	10/31/2019	0 °C	100%	non-detect	non-detect
VCR	10/25/2019	10/31/2019	0 °C	97%	non-detect	non-detect

Samples Received 10/26/2019

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
DHC	10/26/2019	10/31/2019	0 °C	112%	non-detect	non-detect
BVC	10/26/2019	10/31/2019	0 °C	103%	non-detect	non-detect
TCE	10/26/2019	10/31/2019	0 °C	100%	non-detect	non-detect
VCR	10/26/2019	10/31/2019	0 °C	97%	non-detect	non-detect

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 19, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321565

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on November 19, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Haley Ahlers, Ramboll
Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321565

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321565

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60321565001	**HP-09-DEEP-201911**	Water	11/18/19 16:10	11/19/19 01:20
60321565002	**HP-10-DEEP-201911**	Water	11/18/19 17:10	11/19/19 01:20
60321565003	**TB-01**	Water	11/18/19 17:10	11/19/19 01:20

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321565

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60321565001	**HP-09-DEEP-201911**	EPA 5030B/8260	PGH	38	PASI-K
60321565002	**HP-10-DEEP-201911**	EPA 5030B/8260	PGH	38	PASI-K
60321565003	**TB-01**	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321565

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 19, 2019

General Information:
3 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 623220

B: Analyte was detected in the associated method blank.

- BLANK for HBN 623220 [MSV/1021 (Lab ID: 2541282)
  - Carbon disulfide

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 623220

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321565

Sample: HP-09-DEEP-201911 **Lab ID: 60321565001** Collected: 11/18/19 16:10 Received: 11/19/19 01:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**4.7J**	ug/L	10.0	3.3	1		11/19/19 11:41	67-64-1	
Benzene	**0.14J**	ug/L	1.0	0.079	1		11/19/19 11:41	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/19/19 11:41	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/19/19 11:41	75-25-2	
Bromomethane	**1.2J**	ug/L	5.0	0.32	1		11/19/19 11:41	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/19/19 11:41	78-93-3	
Carbon disulfide	**0.25J**	ug/L	5.0	0.16	1		11/19/19 11:41	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/19/19 11:41	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/19/19 11:41	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/19/19 11:41	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/19/19 11:41	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/19/19 11:41	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/19/19 11:41	124-48-1	
1,1-Dichloroethane	**0.61J**	ug/L	1.0	0.097	1		11/19/19 11:41	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/19/19 11:41	107-06-2	
1,1-Dichloroethene	**1.0**	ug/L	1.0	0.22	1		11/19/19 11:41	75-35-4	
cis-1,2-Dichloroethene	**6.7**	ug/L	1.0	0.17	1		11/19/19 11:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/19/19 11:41	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/19/19 11:41	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/19/19 11:41	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/19/19 11:41	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/19/19 11:41	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/19/19 11:41	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/19/19 11:41	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/19/19 11:41	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/19/19 11:41	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/19/19 11:41	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/19/19 11:41	127-18-4	
Toluene	**0.21J**	ug/L	1.0	0.14	1		11/19/19 11:41	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/19/19 11:41	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/19/19 11:41	79-00-5	
Trichloroethene	**147**	ug/L	1.0	0.17	1		11/19/19 11:41	79-01-6	
Vinyl chloride	**0.26J**	ug/L	1.0	0.11	1		11/19/19 11:41	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/19/19 11:41	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/19/19 11:41	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/19/19 11:41	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/19/19 11:41	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/19/19 11:41		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321565

Sample: HP-10-DEEP-201911 **Lab ID: 60321565002** Collected: 11/18/19 17:10 Received: 11/19/19 01:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**3.4J**	ug/L	10.0	3.3	1		11/19/19 11:55	67-64-1	
Benzene	**0.18J**	ug/L	1.0	0.079	1		11/19/19 11:55	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/19/19 11:55	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/19/19 11:55	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/19/19 11:55	74-83-9	
2-Butanone (MEK)	**1.5J**	ug/L	10.0	0.70	1		11/19/19 11:55	78-93-3	
Carbon disulfide	**0.26J**	ug/L	5.0	0.16	1		11/19/19 11:55	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/19/19 11:55	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/19/19 11:55	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/19/19 11:55	75-00-3	
Chloroform	**0.11J**	ug/L	1.0	0.10	1		11/19/19 11:55	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/19/19 11:55	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/19/19 11:55	124-48-1	
1,1-Dichloroethane	**0.72J**	ug/L	1.0	0.097	1		11/19/19 11:55	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/19/19 11:55	107-06-2	
1,1-Dichloroethene	**1.2**	ug/L	1.0	0.22	1		11/19/19 11:55	75-35-4	
cis-1,2-Dichloroethene	**9.6**	ug/L	1.0	0.17	1		11/19/19 11:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/19/19 11:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/19/19 11:55	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/19/19 11:55	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/19/19 11:55	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/19/19 11:55	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/19/19 11:55	591-78-6	
Methylene Chloride	**0.33J**	ug/L	1.0	0.27	1		11/19/19 11:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/19/19 11:55	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/19/19 11:55	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/19/19 11:55	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/19/19 11:55	127-18-4	
Toluene	**0.16J**	ug/L	1.0	0.14	1		11/19/19 11:55	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/19/19 11:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/19/19 11:55	79-00-5	
Trichloroethene	**150**	ug/L	1.0	0.17	1		11/19/19 11:55	79-01-6	
Vinyl chloride	**0.33J**	ug/L	1.0	0.11	1		11/19/19 11:55	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/19/19 11:55	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		11/19/19 11:55	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/19/19 11:55	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/19/19 11:55	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/19/19 11:55		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321565

Sample: TB-01 **Lab ID: 60321565003** Collected: 11/18/19 17:10 Received: 11/19/19 01:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/19/19 11:26	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/19/19 11:26	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/19/19 11:26	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/19/19 11:26	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/19/19 11:26	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/19/19 11:26	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/19/19 11:26	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/19/19 11:26	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/19/19 11:26	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/19/19 11:26	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/19/19 11:26	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/19/19 11:26	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/19/19 11:26	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/19/19 11:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/19/19 11:26	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/19/19 11:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/19/19 11:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/19/19 11:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/19/19 11:26	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/19/19 11:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/19/19 11:26	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/19/19 11:26	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/19/19 11:26	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/19/19 11:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/19/19 11:26	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/19/19 11:26	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/19/19 11:26	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/19/19 11:26	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/19/19 11:26	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/19/19 11:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/19/19 11:26	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/19/19 11:26	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/19/19 11:26	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/19/19 11:26	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/19/19 11:26	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/19/19 11:26	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/19/19 11:26	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/19/19 11:26		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321565

QC Batch: 623220 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60321565001, 60321565002, 60321565003

METHOD BLANK: 2541282 Matrix: Water
Associated Lab Samples: 60321565001, 60321565002, 60321565003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/19/19 11:12	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/19/19 11:12	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/19/19 11:12	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/19/19 11:12	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/19/19 11:12	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/19/19 11:12	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/19/19 11:12	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/19/19 11:12	
2-Hexanone	ug/L	ND	10.0	1.0	11/19/19 11:12	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/19/19 11:12	
Acetone	ug/L	ND	10.0	3.3	11/19/19 11:12	
Benzene	ug/L	ND	1.0	0.079	11/19/19 11:12	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/19/19 11:12	
Bromoform	ug/L	ND	1.0	0.21	11/19/19 11:12	
Bromomethane	ug/L	ND	5.0	0.32	11/19/19 11:12	
Carbon disulfide	ug/L	0.17J	5.0	0.16	11/19/19 11:12	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/19/19 11:12	
Chlorobenzene	ug/L	ND	1.0	0.13	11/19/19 11:12	
Chloroethane	ug/L	ND	1.0	0.42	11/19/19 11:12	
Chloroform	ug/L	ND	1.0	0.10	11/19/19 11:12	
Chloromethane	ug/L	ND	1.0	0.16	11/19/19 11:12	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/19/19 11:12	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/19/19 11:12	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/19/19 11:12	
Ethylbenzene	ug/L	ND	1.0	0.12	11/19/19 11:12	
Methylene Chloride	ug/L	ND	1.0	0.27	11/19/19 11:12	
Styrene	ug/L	ND	1.0	0.15	11/19/19 11:12	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/19/19 11:12	
Toluene	ug/L	ND	1.0	0.14	11/19/19 11:12	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/19/19 11:12	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/19/19 11:12	
Trichloroethene	ug/L	ND	1.0	0.17	11/19/19 11:12	
Vinyl chloride	ug/L	ND	1.0	0.11	11/19/19 11:12	
Xylene (Total)	ug/L	ND	3.0	0.34	11/19/19 11:12	
1,2-Dichloroethane-d4 (S)	%	97	77-122		11/19/19 11:12	
4-Bromofluorobenzene (S)	%	98	80-120		11/19/19 11:12	
Toluene-d8 (S)	%	100	80-120		11/19/19 11:12	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321565

LABORATORY CONTROL SAMPLE: 2541283

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.1	96	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.4	97	71-122	
1,1,2-Trichloroethane	ug/L	20	20.6	103	76-123	
1,1-Dichloroethane	ug/L	20	20.2	101	78-117	
1,1-Dichloroethene	ug/L	20	19.4	97	74-122	
1,2-Dichloroethane	ug/L	20	20.1	100	73-120	
1,2-Dichloropropane	ug/L	20	19.9	99	78-115	
2-Butanone (MEK)	ug/L	100	103	103	54-133	
2-Hexanone	ug/L	100	96.3	96	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	102	102	62-130	
Acetone	ug/L	100	87.8	88	54-130	
Benzene	ug/L	20	20.5	102	80-120	
Bromodichloromethane	ug/L	20	19.8	99	78-121	
Bromoform	ug/L	20	19.0	95	62-137	
Bromomethane	ug/L	20	24.1	121	41-145	
Carbon disulfide	ug/L	20	20.6	103	64-119	
Carbon tetrachloride	ug/L	20	19.7	98	77-122	
Chlorobenzene	ug/L	20	20.3	102	80-123	
Chloroethane	ug/L	20	19.0	95	60-146	
Chloroform	ug/L	20	19.6	98	81-116	
Chloromethane	ug/L	20	16.1	80	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.6	103	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.9	104	78-118	
Dibromochloromethane	ug/L	20	21.1	105	73-128	
Ethylbenzene	ug/L	20	20.8	104	80-120	
Methylene Chloride	ug/L	20	19.9	100	80-126	
Styrene	ug/L	20	20.7	103	85-120	
Tetrachloroethene	ug/L	20	20.0	100	77-121	
Toluene	ug/L	20	20.1	101	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.2	96	80-120	
trans-1,3-Dichloropropene	ug/L	20	20.7	103	76-123	
Trichloroethene	ug/L	20	20.2	101	80-121	
Vinyl chloride	ug/L	20	21.4	107	46-162	
Xylene (Total)	ug/L	60	62.8	105	80-120	
1,2-Dichloroethane-d4 (S)	%			96	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			102	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321565

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 623220

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321565

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60321565001	**HP-09-DEEP-201911**	EPA 5030B/8260	623220		
60321565002	**HP-10-DEEP-201911**	EPA 5030B/8260	623220		
60321565003	**TB-01**	EPA 5030B/8260	623220		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CHAIN-OF-CUSTODY Analytical Request Docum

WO# : 60321565

60321565

or List Pace Workorder Number or MTJL Log-in Here

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fiel

re for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number: whirlpool	State / County/City / Time Zone Collected PT MT CT ET
Phone: Email:	Site/Facility ID # / Compliance Monitoring? [ ] Yes [ ] No
Collected by (print):	Purchase Order # / DW PWS ID #:
	Quote # / DW Location Code #:
Collected by (signature):	Turnaround Date Required: Same DAY
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	RUSH: (Same Day) Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply) / Immediately Packed on Ice? [X] Yes [ ] No / Field Filtered (if applicable): [ ] Yes [ ] No / Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

Analyses: Full List VOC 8260

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	(Y)	N	NA
Custody Signatures Present	(Y)	N	NA
Collector Signature Present	Y	(N)	NA
Bottles intact	(Y)	N	NA
Correct Bottles	(Y)	N	NA
Sufficient Volume	(Y)	N	NA
Samples received on ice	(Y)	N	NA
VOA - Headspace Acceptable	(Y)	N	NA
USDA Regulated Soils	Y	N	(NA)
Samples in holding time	(Y)	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips: _____			
Sample pH Acceptable	Y	N	(NA)
pH Strips: _____			
Sulfide Present	Y	N	(NA)
Lead Acetate Strips: _____			

60321565

↓ LAB USE ONLY: ↓ Lab Sample # / Comments

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns		Lab Sample # / Comments
HP-09-Deep-201911	GW	G	11/18/19	1610				3	X	001
HP-10-Deep-201911	↓	↓	↓	1710				↓	↓	002
~~HP-10-Shallow-201911~~										HA
TB-01			↓					2	↓	003

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [✓] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y (N) N/A

Packing Material Used: Bubble Bags, Zip

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [✓] Courier [ ] Pace Courier

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Haley Ahrens / Ramboll	11/18/19 1800	N Salem / Pace	11.19.19 0120
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y (N) NA

Therm ID #: T-301

Cooler Temp Upon Receipt: 0.4 oC

Cooler Therm Corr. Factor: -0.2 oC

Cooler Temp Corrected: 0.2 oC

Comments: _____

Trip Blank Received: (Y) N N/A

(HCL) MeOH TSP Other

NonConformance(s): YES / (NO)

Page 1 of 1

Page 13 of 13

F-ALL-C-010-rev.00, 05Jul2018

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 20, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321731

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on November 20, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Haley Ahlers, Ramboll
Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321731

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321731

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60321731001	**HP-10-SHALLOW-201911**	Water	11/19/19 14:20	11/20/19 06:30
60321731002	**HP-11-DEEP-201911**	Water	11/19/19 16:45	11/20/19 06:30
60321731003	**HP-12-DEEP-201911**	Water	11/19/19 18:00	11/20/19 06:30
60321731004	**TB-02**	Water	11/19/19 08:00	11/20/19 06:30

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321731

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60321731001	**HP-10-SHALLOW-201911**	EPA 5030B/8260	PGH	38	PASI-K
60321731002	**HP-11-DEEP-201911**	EPA 5030B/8260	PGH	38	PASI-K
60321731003	**HP-12-DEEP-201911**	EPA 5030B/8260	PGH	38	PASI-K
60321731004	**TB-02**	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321731

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll_AR
Date: November 20, 2019

General Information:
4 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 623511

S0: Surrogate recovery outside laboratory control limits.
- HP-10-SHALLOW-201911 (Lab ID: 60321731001)
  - Toluene-d8 (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 623511

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
- LCS (Lab ID: 2542524)
  - cis-1,3-Dichloropropene

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 623511

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321731

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll_AR
Date: November 20, 2019

Analyte Comments:

QC Batch: 623511

1e: Sample was diluted due to the presence of high levels of sediment in the vials.

- HP-10-SHALLOW-201911 (Lab ID: 60321731001)
  - 4-Bromofluorobenzene (S)
- HP-11-DEEP-201911 (Lab ID: 60321731002)
  - 4-Bromofluorobenzene (S)

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321731

Sample: HP-10-SHALLOW-201911 **Lab ID: 60321731001** Collected: 11/19/19 14:20 Received: 11/20/19 06:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	200	66.0	20		11/20/19 09:19	67-64-1	
Benzene	ND	ug/L	20.0	1.6	20		11/20/19 09:19	71-43-2	
Bromodichloromethane	ND	ug/L	20.0	3.4	20		11/20/19 09:19	75-27-4	
Bromoform	ND	ug/L	20.0	4.2	20		11/20/19 09:19	75-25-2	
Bromomethane	ND	ug/L	100	6.4	20		11/20/19 09:19	74-83-9	
2-Butanone (MEK)	ND	ug/L	200	14.0	20		11/20/19 09:19	78-93-3	
Carbon disulfide	ND	ug/L	100	3.2	20		11/20/19 09:19	75-15-0	
Carbon tetrachloride	ND	ug/L	20.0	1.7	20		11/20/19 09:19	56-23-5	
Chlorobenzene	ND	ug/L	20.0	2.6	20		11/20/19 09:19	108-90-7	
Chloroethane	ND	ug/L	20.0	8.4	20		11/20/19 09:19	75-00-3	
Chloroform	ND	ug/L	20.0	2.0	20		11/20/19 09:19	67-66-3	
Chloromethane	ND	ug/L	20.0	3.2	20		11/20/19 09:19	74-87-3	
Dibromochloromethane	ND	ug/L	20.0	3.0	20		11/20/19 09:19	124-48-1	
1,1-Dichloroethane	ND	ug/L	20.0	1.9	20		11/20/19 09:19	75-34-3	
1,2-Dichloroethane	ND	ug/L	20.0	2.8	20		11/20/19 09:19	107-06-2	
1,1-Dichloroethene	ND	ug/L	20.0	4.4	20		11/20/19 09:19	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	20.0	3.4	20		11/20/19 09:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	20.0	3.4	20		11/20/19 09:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	20.0	1.6	20		11/20/19 09:19	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	20.0	1.7	20		11/20/19 09:19	10061-01-5	L2
trans-1,3-Dichloropropene	ND	ug/L	20.0	2.4	20		11/20/19 09:19	10061-02-6	
Ethylbenzene	ND	ug/L	20.0	2.4	20		11/20/19 09:19	100-41-4	
2-Hexanone	ND	ug/L	200	20.0	20		11/20/19 09:19	591-78-6	
Methylene Chloride	ND	ug/L	20.0	5.4	20		11/20/19 09:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	200	11.2	20		11/20/19 09:19	108-10-1	
Styrene	ND	ug/L	20.0	3.0	20		11/20/19 09:19	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	20.0	6.2	20		11/20/19 09:19	79-34-5	
Tetrachloroethene	ND	ug/L	20.0	4.4	20		11/20/19 09:19	127-18-4	
Toluene	ND	ug/L	20.0	2.8	20		11/20/19 09:19	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	20.0	2.4	20		11/20/19 09:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	20.0	2.0	20		11/20/19 09:19	79-00-5	
Trichloroethene	ND	ug/L	20.0	3.4	20		11/20/19 09:19	79-01-6	
Vinyl chloride	ND	ug/L	20.0	2.2	20		11/20/19 09:19	75-01-4	
Xylene (Total)	ND	ug/L	60.0	6.8	20		11/20/19 09:19	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	97	%	80-120		20		11/20/19 09:19	460-00-4	1e,HS
1,2-Dichloroethane-d4 (S)	93	%	77-122		20		11/20/19 09:19	17060-07-0	
Toluene-d8 (S)	152	%	80-120		20		11/20/19 09:19	2037-26-5	S0
Preservation pH	**2.0**		0.10	0.10	20		11/20/19 09:19		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321731

Sample: HP-11-DEEP-201911 **Lab ID: 60321731002** Collected: 11/19/19 16:45 Received: 11/20/19 06:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	200	66.0	20		11/20/19 09:33	67-64-1	
Benzene	ND	ug/L	20.0	1.6	20		11/20/19 09:33	71-43-2	
Bromodichloromethane	ND	ug/L	20.0	3.4	20		11/20/19 09:33	75-27-4	
Bromoform	ND	ug/L	20.0	4.2	20		11/20/19 09:33	75-25-2	
Bromomethane	ND	ug/L	100	6.4	20		11/20/19 09:33	74-83-9	
2-Butanone (MEK)	ND	ug/L	200	14.0	20		11/20/19 09:33	78-93-3	
Carbon disulfide	ND	ug/L	100	3.2	20		11/20/19 09:33	75-15-0	
Carbon tetrachloride	ND	ug/L	20.0	1.7	20		11/20/19 09:33	56-23-5	
Chlorobenzene	ND	ug/L	20.0	2.6	20		11/20/19 09:33	108-90-7	
Chloroethane	ND	ug/L	20.0	8.4	20		11/20/19 09:33	75-00-3	
Chloroform	ND	ug/L	20.0	2.0	20		11/20/19 09:33	67-66-3	
Chloromethane	ND	ug/L	20.0	3.2	20		11/20/19 09:33	74-87-3	
Dibromochloromethane	ND	ug/L	20.0	3.0	20		11/20/19 09:33	124-48-1	
1,1-Dichloroethane	ND	ug/L	20.0	1.9	20		11/20/19 09:33	75-34-3	
1,2-Dichloroethane	ND	ug/L	20.0	2.8	20		11/20/19 09:33	107-06-2	
1,1-Dichloroethene	ND	ug/L	20.0	4.4	20		11/20/19 09:33	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	20.0	3.4	20		11/20/19 09:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	20.0	3.4	20		11/20/19 09:33	156-60-5	
1,2-Dichloropropane	ND	ug/L	20.0	1.6	20		11/20/19 09:33	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	20.0	1.7	20		11/20/19 09:33	10061-01-5	L2
trans-1,3-Dichloropropene	ND	ug/L	20.0	2.4	20		11/20/19 09:33	10061-02-6	
Ethylbenzene	ND	ug/L	20.0	2.4	20		11/20/19 09:33	100-41-4	
2-Hexanone	ND	ug/L	200	20.0	20		11/20/19 09:33	591-78-6	
Methylene Chloride	ND	ug/L	20.0	5.4	20		11/20/19 09:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	200	11.2	20		11/20/19 09:33	108-10-1	
Styrene	ND	ug/L	20.0	3.0	20		11/20/19 09:33	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	20.0	6.2	20		11/20/19 09:33	79-34-5	
Tetrachloroethene	ND	ug/L	20.0	4.4	20		11/20/19 09:33	127-18-4	
Toluene	ND	ug/L	20.0	2.8	20		11/20/19 09:33	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	20.0	2.4	20		11/20/19 09:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	20.0	2.0	20		11/20/19 09:33	79-00-5	
Trichloroethene	ND	ug/L	20.0	3.4	20		11/20/19 09:33	79-01-6	
Vinyl chloride	ND	ug/L	20.0	2.2	20		11/20/19 09:33	75-01-4	
Xylene (Total)	ND	ug/L	60.0	6.8	20		11/20/19 09:33	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		20		11/20/19 09:33	460-00-4	1e,HS
1,2-Dichloroethane-d4 (S)	89	%	77-122		20		11/20/19 09:33	17060-07-0	
Toluene-d8 (S)	99	%	80-120		20		11/20/19 09:33	2037-26-5	
Preservation pH	**2.0**		0.10	0.10	20		11/20/19 09:33		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321731

Sample: HP-12-DEEP-201911 **Lab ID: 60321731003** Collected: 11/19/19 18:00 Received: 11/20/19 06:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/20/19 09:47	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/20/19 09:47	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/20/19 09:47	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/20/19 09:47	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/20/19 09:47	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/20/19 09:47	78-93-3	
Carbon disulfide	**0.19J**	ug/L	5.0	0.16	1		11/20/19 09:47	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/20/19 09:47	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/20/19 09:47	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/20/19 09:47	75-00-3	
Chloroform	**0.11J**	ug/L	1.0	0.10	1		11/20/19 09:47	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/20/19 09:47	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/20/19 09:47	124-48-1	
1,1-Dichloroethane	**0.77J**	ug/L	1.0	0.097	1		11/20/19 09:47	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/20/19 09:47	107-06-2	
1,1-Dichloroethene	**1.5**	ug/L	1.0	0.22	1		11/20/19 09:47	75-35-4	
cis-1,2-Dichloroethene	**8.6**	ug/L	1.0	0.17	1		11/20/19 09:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/20/19 09:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/20/19 09:47	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/20/19 09:47	10061-01-5	L2
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/20/19 09:47	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/20/19 09:47	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/20/19 09:47	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/20/19 09:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/20/19 09:47	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/20/19 09:47	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/20/19 09:47	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/20/19 09:47	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/20/19 09:47	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/20/19 09:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/20/19 09:47	79-00-5	
Trichloroethene	**237**	ug/L	10.0	1.7	10		11/20/19 10:09	79-01-6	
Vinyl chloride	**0.29J**	ug/L	1.0	0.11	1		11/20/19 09:47	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/20/19 09:47	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		11/20/19 09:47	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	77-122		1		11/20/19 09:47	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		11/20/19 09:47	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/20/19 09:47		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321731

Sample: TB-02 **Lab ID: 60321731004** Collected: 11/19/19 08:00 Received: 11/20/19 06:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/20/19 09:04	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/20/19 09:04	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/20/19 09:04	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/20/19 09:04	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/20/19 09:04	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/20/19 09:04	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/20/19 09:04	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/20/19 09:04	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/20/19 09:04	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/20/19 09:04	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/20/19 09:04	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/20/19 09:04	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/20/19 09:04	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/20/19 09:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/20/19 09:04	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/20/19 09:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/20/19 09:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/20/19 09:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/20/19 09:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/20/19 09:04	10061-01-5	L2
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/20/19 09:04	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/20/19 09:04	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/20/19 09:04	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/20/19 09:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/20/19 09:04	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/20/19 09:04	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/20/19 09:04	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/20/19 09:04	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/20/19 09:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/20/19 09:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/20/19 09:04	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/20/19 09:04	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/20/19 09:04	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/20/19 09:04	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/20/19 09:04	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	77-122		1		11/20/19 09:04	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/20/19 09:04	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/20/19 09:04		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321731

QC Batch: 623511 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60321731001, 60321731002, 60321731003, 60321731004

METHOD BLANK: 2542523 Matrix: Water
Associated Lab Samples: 60321731001, 60321731002, 60321731003, 60321731004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/20/19 08:22	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/20/19 08:22	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/20/19 08:22	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/20/19 08:22	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/20/19 08:22	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/20/19 08:22	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/20/19 08:22	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/20/19 08:22	
2-Hexanone	ug/L	ND	10.0	1.0	11/20/19 08:22	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/20/19 08:22	
Acetone	ug/L	ND	10.0	3.3	11/20/19 08:22	
Benzene	ug/L	ND	1.0	0.079	11/20/19 08:22	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/20/19 08:22	
Bromoform	ug/L	ND	1.0	0.21	11/20/19 08:22	
Bromomethane	ug/L	ND	5.0	0.32	11/20/19 08:22	
Carbon disulfide	ug/L	ND	5.0	0.16	11/20/19 08:22	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/20/19 08:22	
Chlorobenzene	ug/L	ND	1.0	0.13	11/20/19 08:22	
Chloroethane	ug/L	ND	1.0	0.42	11/20/19 08:22	
Chloroform	ug/L	ND	1.0	0.10	11/20/19 08:22	
Chloromethane	ug/L	ND	1.0	0.16	11/20/19 08:22	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/20/19 08:22	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/20/19 08:22	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/20/19 08:22	
Ethylbenzene	ug/L	ND	1.0	0.12	11/20/19 08:22	
Methylene Chloride	ug/L	ND	1.0	0.27	11/20/19 08:22	
Styrene	ug/L	ND	1.0	0.15	11/20/19 08:22	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/20/19 08:22	
Toluene	ug/L	ND	1.0	0.14	11/20/19 08:22	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/20/19 08:22	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/20/19 08:22	
Trichloroethene	ug/L	ND	1.0	0.17	11/20/19 08:22	
Vinyl chloride	ug/L	ND	1.0	0.11	11/20/19 08:22	
Xylene (Total)	ug/L	ND	3.0	0.34	11/20/19 08:22	
1,2-Dichloroethane-d4 (S)	%	97	77-122		11/20/19 08:22	
4-Bromofluorobenzene (S)	%	101	80-120		11/20/19 08:22	
Toluene-d8 (S)	%	100	80-120		11/20/19 08:22	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321731

LABORATORY CONTROL SAMPLE: 2542524

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.1	90	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.1	96	71-122	
1,1,2-Trichloroethane	ug/L	20	19.9	99	76-123	
1,1-Dichloroethane	ug/L	20	22.5	113	78-117	
1,1-Dichloroethene	ug/L	20	15.4	77	74-122	
1,2-Dichloroethane	ug/L	20	19.0	95	73-120	
1,2-Dichloropropane	ug/L	20	22.2	111	78-115	
2-Butanone (MEK)	ug/L	100	127	127	54-133	
2-Hexanone	ug/L	100	96.1	96	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	63.6	64	62-130	
Acetone	ug/L	100	97.5	97	54-130	
Benzene	ug/L	20	21.4	107	80-120	
Bromodichloromethane	ug/L	20	17.4	87	78-121	
Bromoform	ug/L	20	18.9	94	62-137	
Bromomethane	ug/L	20	21.4	107	41-145	
Carbon disulfide	ug/L	20	16.9	84	64-119	
Carbon tetrachloride	ug/L	20	18.0	90	77-122	
Chlorobenzene	ug/L	20	20.4	102	80-123	
Chloroethane	ug/L	20	15.0	75	60-146	
Chloroform	ug/L	20	18.9	95	81-116	
Chloromethane	ug/L	20	12.3	62	29-154	
cis-1,2-Dichloroethene	ug/L	20	21.0	105	80-120	
cis-1,3-Dichloropropene	ug/L	20	13.0	65	78-118	L2
Dibromochloromethane	ug/L	20	20.0	100	73-128	
Ethylbenzene	ug/L	20	21.0	105	80-120	
Methylene Chloride	ug/L	20	17.1	86	80-126	
Styrene	ug/L	20	20.5	103	85-120	
Tetrachloroethene	ug/L	20	20.6	103	77-121	
Toluene	ug/L	20	20.4	102	80-120	
trans-1,2-Dichloroethene	ug/L	20	16.0	80	80-120	
trans-1,3-Dichloropropene	ug/L	20	20.5	103	76-123	
Trichloroethene	ug/L	20	19.7	99	80-121	
Vinyl chloride	ug/L	20	13.6	68	46-162	
Xylene (Total)	ug/L	60	63.2	105	80-120	
1,2-Dichloroethane-d4 (S)	%			87	77-122	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			99	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321731

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 623511

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1e	Sample was diluted due to the presence of high levels of sediment in the vials.
B	Analyte was detected in the associated method blank.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
S0	Surrogate recovery outside laboratory control limits.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321731

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60321731001	**HP-10-SHALLOW-201911**	EPA 5030B/8260	623511		
60321731002	**HP-11-DEEP-201911**	EPA 5030B/8260	623511		
60321731003	**HP-12-DEEP-201911**	EPA 5030B/8260	623511		
60321731004	**TB-02**	EPA 5030B/8260	623511		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60321731

60321731

Client Name: Ramboll

Courier: FedEx ☐ UPS ☐ VIA ☑ 2 Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: T-298 **Type of Ice:** (We) Blue None

Cooler Temperature (°C): As-read 0.6 Corr. Factor +0.0 Corrected 0.6

HS

Date and initials of person examining contents: 11.20.19

Temperature should be above freezing to 6°C

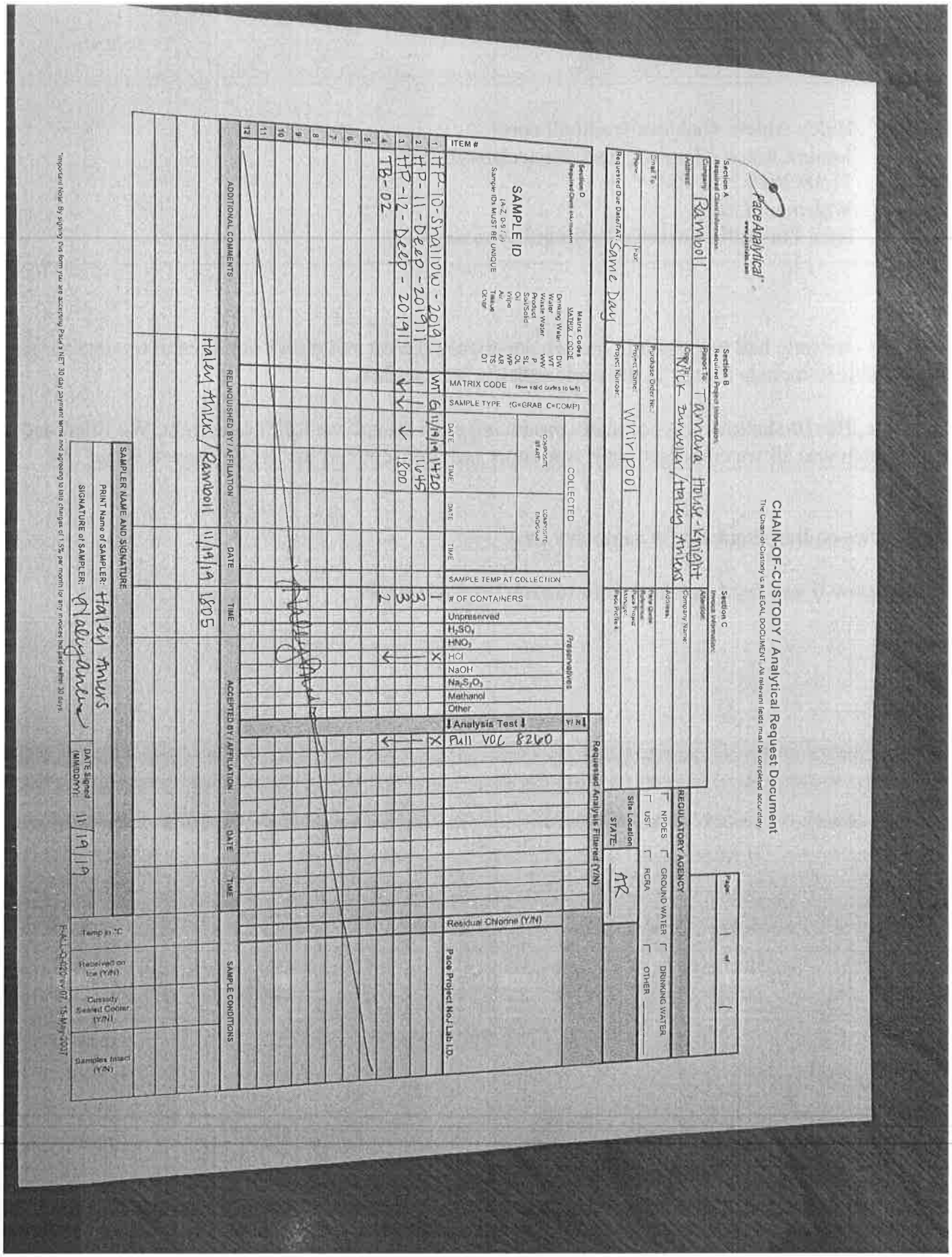
Chain of Custody present:	☐Yes ☑No ☐N/A	Received 1 DG9H for HP-10-Shallow-201910, 3 DG9H for HP-11-Deep-201911, 3 DG9H for HP-12-Deep-201911, and 2 DG9H for TB-02
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☑Yes ☐No ☐N/A	Same Day
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	11-19-19 at 1645
Pace containers used:	☑Yes ☐No ☐N/A	11-19-19 at 1800
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☐Yes ☐No ☑N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☑Yes ☐No ☐N/A	
Headspace in VOA vials (>6mm):	☑Yes ☐No ☐N/A	1/1 DG9H for HP-10-Shallow-201910 & 3/3 DG9H for HP-11-Deep-201911 have headspace.
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Jasmi Chunk 11/20/19 Date: _____



Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information	Section B Required Project Information	Section C Invoice Information
Company: Ramboll	Report To: Tamara House-Knight	Attention:
Address:	Copy To: Nick Zurweiler / Haley Ahlers	Company Name:
		Address:
Email To:	Purchase Order No.:	Pace Quote Reference:
Phone: Fax:	Project Name: Whirlpool	Pace Project Manager:
Requested Due Date/TAT: Same Day	Project Number:	Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: AR

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (from valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	Full VOC 8260	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	HP-10-Shallow-201911	WT	G	11/19/19	1420				1				X						X		
2	HP-11-Deep-201911	↓	↓	↓	1645				3				↓						↓		
3	HP-12-Deep-201911	↓	↓	↓	1800				3				↓						↓		
4	TB-02								2				↓						↓		
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Haley Ahlers

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Haley Ahlers / Ramboll	11/19/19	1805				

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Haley Ahlers

SIGNATURE of SAMPLER: Haley Ahlers

DATE Signed (MM/DD/YY): 11/19/19

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 21, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321906

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on November 21, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Haley Ahlers, Ramboll
Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321906

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321906

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60321906001	**HP-13-DEEP-201911**	Water	11/20/19 16:40	11/21/19 02:10
60321906002	**HP-14-DEEP-201911**	Water	11/20/19 17:50	11/21/19 02:10
60321906003	**TB-03**	Water	11/20/19 08:00	11/21/19 02:10

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321906

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60321906001	**HP-13-DEEP-201911**	EPA 5030B/8260	PGH	38	PASI-K
60321906002	**HP-14-DEEP-201911**	EPA 5030B/8260	PGH	38	PASI-K
60321906003	**TB-03**	EPA 5030B/8260	PGH	38	PASI-K

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321906

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll_AR
Date: November 21, 2019

General Information:
3 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 623860

B: Analyte was detected in the associated method blank.

- BLANK for HBN 623860 [MSV/1023 (Lab ID: 2543907)
  - 1,2-Dichloroethane
  - Carbon disulfide

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 623860

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321906

Sample: HP-13-DEEP-201911 **Lab ID: 60321906001** Collected: 11/20/19 16:40 Received: 11/21/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**4.1J**	ug/L	10.0	3.3	1		11/21/19 12:14	67-64-1	
Benzene	**0.32J**	ug/L	1.0	0.079	1		11/21/19 12:14	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/21/19 12:14	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/21/19 12:14	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/21/19 12:14	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/21/19 12:14	78-93-3	
Carbon disulfide	**0.24J**	ug/L	5.0	0.16	1		11/21/19 12:14	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/21/19 12:14	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/21/19 12:14	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/21/19 12:14	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/21/19 12:14	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/21/19 12:14	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/21/19 12:14	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/21/19 12:14	75-34-3	
1,2-Dichloroethane	**0.19J**	ug/L	1.0	0.14	1		11/21/19 12:14	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/21/19 12:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/21/19 12:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/21/19 12:14	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/21/19 12:14	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/21/19 12:14	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/21/19 12:14	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/21/19 12:14	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/21/19 12:14	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/21/19 12:14	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/21/19 12:14	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/21/19 12:14	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/21/19 12:14	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/21/19 12:14	127-18-4	
Toluene	**0.52J**	ug/L	1.0	0.14	1		11/21/19 12:14	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/21/19 12:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/21/19 12:14	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/21/19 12:14	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/21/19 12:14	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/21/19 12:14	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/21/19 12:14	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		11/21/19 12:14	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		11/21/19 12:14	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/21/19 12:14		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321906

Sample: HP-14-DEEP-201911 **Lab ID: 60321906002** Collected: 11/20/19 17:50 Received: 11/21/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**7.1J**	ug/L	10.0	3.3	1		11/21/19 12:00	67-64-1	
Benzene	**0.55J**	ug/L	1.0	0.079	1		11/21/19 12:00	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/21/19 12:00	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/21/19 12:00	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/21/19 12:00	74-83-9	
2-Butanone (MEK)	**3.1J**	ug/L	10.0	0.70	1		11/21/19 12:00	78-93-3	
Carbon disulfide	**0.22J**	ug/L	5.0	0.16	1		11/21/19 12:00	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/21/19 12:00	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/21/19 12:00	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/21/19 12:00	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/21/19 12:00	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/21/19 12:00	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/21/19 12:00	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/21/19 12:00	75-34-3	
1,2-Dichloroethane	**0.16J**	ug/L	1.0	0.14	1		11/21/19 12:00	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/21/19 12:00	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/21/19 12:00	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/21/19 12:00	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/21/19 12:00	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/21/19 12:00	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/21/19 12:00	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/21/19 12:00	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/21/19 12:00	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/21/19 12:00	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/21/19 12:00	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/21/19 12:00	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/21/19 12:00	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/21/19 12:00	127-18-4	
Toluene	**0.30J**	ug/L	1.0	0.14	1		11/21/19 12:00	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/21/19 12:00	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/21/19 12:00	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/21/19 12:00	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/21/19 12:00	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/21/19 12:00	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/21/19 12:00	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/21/19 12:00	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/21/19 12:00	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/21/19 12:00		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321906

Sample: TB-03 **Lab ID: 60321906003** Collected: 11/20/19 08:00 Received: 11/21/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/21/19 11:46	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/21/19 11:46	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/21/19 11:46	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/21/19 11:46	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/21/19 11:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/21/19 11:46	78-93-3	
Carbon disulfide	**0.18J**	ug/L	5.0	0.16	1		11/21/19 11:46	75-15-0	B
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/21/19 11:46	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/21/19 11:46	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/21/19 11:46	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/21/19 11:46	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/21/19 11:46	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/21/19 11:46	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/21/19 11:46	75-34-3	
1,2-Dichloroethane	**0.19J**	ug/L	1.0	0.14	1		11/21/19 11:46	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/21/19 11:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/21/19 11:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/21/19 11:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/21/19 11:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/21/19 11:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/21/19 11:46	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/21/19 11:46	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/21/19 11:46	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/21/19 11:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/21/19 11:46	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/21/19 11:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/21/19 11:46	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/21/19 11:46	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/21/19 11:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/21/19 11:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/21/19 11:46	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/21/19 11:46	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/21/19 11:46	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/21/19 11:46	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/21/19 11:46	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/21/19 11:46	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		11/21/19 11:46	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/21/19 11:46		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321906

QC Batch: 623860 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60321906001, 60321906002, 60321906003

METHOD BLANK: 2543907 Matrix: Water
Associated Lab Samples: 60321906001, 60321906002, 60321906003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/21/19 11:32	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/21/19 11:32	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/21/19 11:32	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/21/19 11:32	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/21/19 11:32	
1,2-Dichloroethane	ug/L	0.15J	1.0	0.14	11/21/19 11:32	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/21/19 11:32	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/21/19 11:32	
2-Hexanone	ug/L	ND	10.0	1.0	11/21/19 11:32	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/21/19 11:32	
Acetone	ug/L	ND	10.0	3.3	11/21/19 11:32	
Benzene	ug/L	ND	1.0	0.079	11/21/19 11:32	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/21/19 11:32	
Bromoform	ug/L	ND	1.0	0.21	11/21/19 11:32	
Bromomethane	ug/L	ND	5.0	0.32	11/21/19 11:32	
Carbon disulfide	ug/L	0.22J	5.0	0.16	11/21/19 11:32	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/21/19 11:32	
Chlorobenzene	ug/L	ND	1.0	0.13	11/21/19 11:32	
Chloroethane	ug/L	ND	1.0	0.42	11/21/19 11:32	
Chloroform	ug/L	ND	1.0	0.10	11/21/19 11:32	
Chloromethane	ug/L	ND	1.0	0.16	11/21/19 11:32	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/21/19 11:32	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/21/19 11:32	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/21/19 11:32	
Ethylbenzene	ug/L	ND	1.0	0.12	11/21/19 11:32	
Methylene Chloride	ug/L	ND	1.0	0.27	11/21/19 11:32	
Styrene	ug/L	ND	1.0	0.15	11/21/19 11:32	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/21/19 11:32	
Toluene	ug/L	ND	1.0	0.14	11/21/19 11:32	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/21/19 11:32	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/21/19 11:32	
Trichloroethene	ug/L	ND	1.0	0.17	11/21/19 11:32	
Vinyl chloride	ug/L	ND	1.0	0.11	11/21/19 11:32	
Xylene (Total)	ug/L	ND	3.0	0.34	11/21/19 11:32	
1,2-Dichloroethane-d4 (S)	%	100	77-122		11/21/19 11:32	
4-Bromofluorobenzene (S)	%	99	80-120		11/21/19 11:32	
Toluene-d8 (S)	%	100	80-120		11/21/19 11:32	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321906

LABORATORY CONTROL SAMPLE: 2543908

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.1	100	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	20.4	102	71-122	
1,1,2-Trichloroethane	ug/L	20	19.3	97	76-123	
1,1-Dichloroethane	ug/L	20	20.0	100	78-117	
1,1-Dichloroethene	ug/L	20	18.7	94	74-122	
1,2-Dichloroethane	ug/L	20	19.5	98	73-120	
1,2-Dichloropropane	ug/L	20	20.1	101	78-115	
2-Butanone (MEK)	ug/L	100	103	103	54-133	
2-Hexanone	ug/L	100	109	109	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	111	111	62-130	
Acetone	ug/L	100	104	104	54-130	
Benzene	ug/L	20	20.5	103	80-120	
Bromodichloromethane	ug/L	20	20.2	101	78-121	
Bromoform	ug/L	20	21.8	109	62-137	
Bromomethane	ug/L	20	22.8	114	41-145	
Carbon disulfide	ug/L	20	20.1	100	64-119	
Carbon tetrachloride	ug/L	20	20.2	101	77-122	
Chlorobenzene	ug/L	20	20.8	104	80-123	
Chloroethane	ug/L	20	19.1	96	60-146	
Chloroform	ug/L	20	19.8	99	81-116	
Chloromethane	ug/L	20	14.9	75	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.7	99	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.4	102	78-118	
Dibromochloromethane	ug/L	20	20.9	105	73-128	
Ethylbenzene	ug/L	20	20.2	101	80-120	
Methylene Chloride	ug/L	20	20.7	103	80-126	
Styrene	ug/L	20	21.1	106	85-120	
Tetrachloroethene	ug/L	20	20.5	103	77-121	
Toluene	ug/L	20	21.1	105	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.7	99	80-120	
trans-1,3-Dichloropropene	ug/L	20	21.0	105	76-123	
Trichloroethene	ug/L	20	19.2	96	80-121	
Vinyl chloride	ug/L	20	20.1	101	46-162	
Xylene (Total)	ug/L	60	61.7	103	80-120	
1,2-Dichloroethane-d4 (S)	%			101	77-122	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			99	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321906

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 623860

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60321906

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60321906001	**HP-13-DEEP-201911**	EPA 5030B/8260	623860		
60321906002	**HP-14-DEEP-201911**	EPA 5030B/8260	623860		
60321906003	**TB-03**	EPA 5030B/8260	623860		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO#: 60321906

60321906

Client Name: Ramboll

Courier: FedEx ☐ UPS ☐ VIA ☑ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: T-298 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): As-read 0.4 Corr. Factor +0.0 Corrected 0.4

HS

Date and initials of person examining contents: 11.21.19

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☑Yes ☐No ☐N/A	Same Day
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) HS 11.21	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☑Yes ☐No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Jasmi Church Date: 11/21/19

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Rambou	Report To: Tamara House-Knight	Attention:
Address:	Copy To: Nick Zurweller/Haley Ahlers	Company Name:
		Address:
Email To:	Purchase Order No.:	Pace Quote Reference:
Phone: Fax:	Project Name: Whirlpool	Pace Project Manager:
Requested Due Date/TAT: Same Day	Project Number:	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	8260 Full List	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	HP-13-Deep-201911	WT	G	11/20/19	1640	n/a	n/a		3				X						X		001
2	HP-14-Deep-201911				1750	↓	↓		↓				↓						↓		002
3	TB-03								2				↓						↓		003
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

60321906

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Haley Ahlers/Rambou	11/20/19	1815	H Sahlers / Pace	11.21.19	0210	0.4	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Haley Ahlers

SIGNATURE of SAMPLER: Haley Ahlers DATE Signed (MM/DD/YY): 11/20/19

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 25, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322109

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on November 22, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Haley Ahlers, Ramboll
Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322109

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322109

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60322109001	**HP-11-SHALLOW-201911**	Water	11/21/19 15:05	11/22/19 08:30
60322109002	**HP-09-SHALLOW-201911**	Water	11/21/19 15:40	11/22/19 08:30
60322109003	**HP-12-SHALLOW-201911**	Water	11/21/19 16:15	11/22/19 08:30
60322109004	**DUP-01-201911**	Water	11/21/19 16:15	11/22/19 08:30

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322109

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60322109001	**HP-11-SHALLOW-201911**	EPA 5030B/8260	PGH	38	PASI-K
60322109002	**HP-09-SHALLOW-201911**	EPA 5030B/8260	PGH	38	PASI-K
60322109003	**HP-12-SHALLOW-201911**	EPA 5030B/8260	PGH	38	PASI-K
60322109004	**DUP-01-201911**	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322109

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll_AR
Date: November 25, 2019

General Information:
4 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

pH: Post-analysis pH measurement indicates insufficient VOA sample preservation.
- HP-09-SHALLOW-201911 (Lab ID: 60322109002)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 624192

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

Analyte Comments:

QC Batch: 624192

1e: Sample was diluted due to the presence of high levels of sediment in the vials.
- HP-09-SHALLOW-201911 (Lab ID: 60322109002)
  - 4-Bromofluorobenzene (S)

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322109

Sample: HP-11-SHALLOW-201911 **Lab ID: 60322109001** Collected: 11/21/19 15:05 Received: 11/22/19 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**68.8**	ug/L	10.0	3.3	1		11/22/19 14:06	67-64-1	
Benzene	**0.48J**	ug/L	1.0	0.079	1		11/22/19 14:06	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/22/19 14:06	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/22/19 14:06	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/22/19 14:06	74-83-9	
2-Butanone (MEK)	**18.2**	ug/L	10.0	0.70	1		11/22/19 14:06	78-93-3	
Carbon disulfide	**0.50J**	ug/L	5.0	0.16	1		11/22/19 14:06	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/22/19 14:06	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/22/19 14:06	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/22/19 14:06	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/22/19 14:06	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/22/19 14:06	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/22/19 14:06	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/22/19 14:06	75-34-3	
1,2-Dichloroethane	**0.16J**	ug/L	1.0	0.14	1		11/22/19 14:06	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/22/19 14:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/22/19 14:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/22/19 14:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/22/19 14:06	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/22/19 14:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/22/19 14:06	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/22/19 14:06	100-41-4	
2-Hexanone	**2.9J**	ug/L	10.0	1.0	1		11/22/19 14:06	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/22/19 14:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.2J**	ug/L	10.0	0.56	1		11/22/19 14:06	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/22/19 14:06	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/22/19 14:06	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/22/19 14:06	127-18-4	
Toluene	**0.40J**	ug/L	1.0	0.14	1		11/22/19 14:06	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/22/19 14:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/22/19 14:06	79-00-5	
Trichloroethene	**0.20J**	ug/L	1.0	0.17	1		11/22/19 14:06	79-01-6	
Vinyl chloride	**0.12J**	ug/L	1.0	0.11	1		11/22/19 14:06	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/22/19 14:06	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	95	%	80-120		1		11/22/19 14:06	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/22/19 14:06	17060-07-0	
Toluene-d8 (S)	103	%	80-120		1		11/22/19 14:06	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/22/19 14:06		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322109

Sample: HP-09-SHALLOW-201911 **Lab ID: 60322109002** Collected: 11/21/19 15:40 Received: 11/22/19 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	500	165	50		11/22/19 14:48	67-64-1	
Benzene	ND	ug/L	50.0	4.0	50		11/22/19 14:48	71-43-2	
Bromodichloromethane	ND	ug/L	50.0	8.5	50		11/22/19 14:48	75-27-4	
Bromoform	ND	ug/L	50.0	10.5	50		11/22/19 14:48	75-25-2	
Bromomethane	ND	ug/L	250	16.0	50		11/22/19 14:48	74-83-9	
2-Butanone (MEK)	**96.4J**	ug/L	500	35.0	50		11/22/19 14:48	78-93-3	
Carbon disulfide	ND	ug/L	250	8.0	50		11/22/19 14:48	75-15-0	
Carbon tetrachloride	ND	ug/L	50.0	4.2	50		11/22/19 14:48	56-23-5	
Chlorobenzene	ND	ug/L	50.0	6.5	50		11/22/19 14:48	108-90-7	
Chloroethane	ND	ug/L	50.0	21.0	50		11/22/19 14:48	75-00-3	
Chloroform	ND	ug/L	50.0	5.0	50		11/22/19 14:48	67-66-3	
Chloromethane	ND	ug/L	50.0	8.0	50		11/22/19 14:48	74-87-3	
Dibromochloromethane	ND	ug/L	50.0	7.5	50		11/22/19 14:48	124-48-1	
1,1-Dichloroethane	ND	ug/L	50.0	4.8	50		11/22/19 14:48	75-34-3	
1,2-Dichloroethane	**8.8J**	ug/L	50.0	7.0	50		11/22/19 14:48	107-06-2	
1,1-Dichloroethene	ND	ug/L	50.0	11.0	50		11/22/19 14:48	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	50.0	8.5	50		11/22/19 14:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	50.0	8.5	50		11/22/19 14:48	156-60-5	
1,2-Dichloropropane	ND	ug/L	50.0	4.0	50		11/22/19 14:48	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	50.0	4.4	50		11/22/19 14:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	50.0	6.0	50		11/22/19 14:48	10061-02-6	
Ethylbenzene	ND	ug/L	50.0	6.0	50		11/22/19 14:48	100-41-4	
2-Hexanone	ND	ug/L	500	50.0	50		11/22/19 14:48	591-78-6	
Methylene Chloride	**65.2**	ug/L	50.0	13.5	50		11/22/19 14:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	500	28.0	50		11/22/19 14:48	108-10-1	
Styrene	ND	ug/L	50.0	7.5	50		11/22/19 14:48	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	50.0	15.5	50		11/22/19 14:48	79-34-5	
Tetrachloroethene	ND	ug/L	50.0	11.0	50		11/22/19 14:48	127-18-4	
Toluene	ND	ug/L	50.0	7.0	50		11/22/19 14:48	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	50.0	6.0	50		11/22/19 14:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	50.0	5.0	50		11/22/19 14:48	79-00-5	
Trichloroethene	ND	ug/L	50.0	8.5	50		11/22/19 14:48	79-01-6	
Vinyl chloride	ND	ug/L	50.0	5.5	50		11/22/19 14:48	75-01-4	
Xylene (Total)	ND	ug/L	150	17.0	50		11/22/19 14:48	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	95	%	80-120		50		11/22/19 14:48	460-00-4	1e
1,2-Dichloroethane-d4 (S)	95	%	77-122		50		11/22/19 14:48	17060-07-0	
Toluene-d8 (S)	103	%	80-120		50		11/22/19 14:48	2037-26-5	
Preservation pH	**3.0**		0.10	0.10	50		11/22/19 14:48		pH

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322109

Sample: HP-12-SHALLOW-201911 **Lab ID: 60322109003** Collected: 11/21/19 16:15 Received: 11/22/19 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**5.7J**	ug/L	10.0	3.3	1		11/22/19 14:20	67-64-1	
Benzene	**0.13J**	ug/L	1.0	0.079	1		11/22/19 14:20	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/22/19 14:20	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/22/19 14:20	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/22/19 14:20	74-83-9	
2-Butanone (MEK)	**1.3J**	ug/L	10.0	0.70	1		11/22/19 14:20	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/22/19 14:20	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/22/19 14:20	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/22/19 14:20	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/22/19 14:20	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/22/19 14:20	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/22/19 14:20	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/22/19 14:20	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/22/19 14:20	75-34-3	
1,2-Dichloroethane	**0.15J**	ug/L	1.0	0.14	1		11/22/19 14:20	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/22/19 14:20	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/22/19 14:20	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/22/19 14:20	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/22/19 14:20	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/22/19 14:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/22/19 14:20	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/22/19 14:20	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/22/19 14:20	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/22/19 14:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/22/19 14:20	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/22/19 14:20	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/22/19 14:20	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/22/19 14:20	127-18-4	
Toluene	**0.14J**	ug/L	1.0	0.14	1		11/22/19 14:20	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/22/19 14:20	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/22/19 14:20	79-00-5	
Trichloroethene	**0.81J**	ug/L	1.0	0.17	1		11/22/19 14:20	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/22/19 14:20	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/22/19 14:20	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	96	%	80-120		1		11/22/19 14:20	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	77-122		1		11/22/19 14:20	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/22/19 14:20	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/22/19 14:20		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322109

Sample: DUP-01-201911 **Lab ID: 60322109004** Collected: 11/21/19 16:15 Received: 11/22/19 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**3.6J**	ug/L	10.0	3.3	1		11/22/19 14:34	67-64-1	
Benzene	**0.11J**	ug/L	1.0	0.079	1		11/22/19 14:34	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/22/19 14:34	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/22/19 14:34	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/22/19 14:34	74-83-9	
2-Butanone (MEK)	**1.8J**	ug/L	10.0	0.70	1		11/22/19 14:34	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/22/19 14:34	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/22/19 14:34	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/22/19 14:34	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/22/19 14:34	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/22/19 14:34	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/22/19 14:34	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/22/19 14:34	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/22/19 14:34	75-34-3	
1,2-Dichloroethane	**0.15J**	ug/L	1.0	0.14	1		11/22/19 14:34	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/22/19 14:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/22/19 14:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/22/19 14:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/22/19 14:34	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/22/19 14:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/22/19 14:34	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/22/19 14:34	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/22/19 14:34	591-78-6	
Methylene Chloride	**0.44J**	ug/L	1.0	0.27	1		11/22/19 14:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/22/19 14:34	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/22/19 14:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/22/19 14:34	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/22/19 14:34	127-18-4	
Toluene	**0.20J**	ug/L	1.0	0.14	1		11/22/19 14:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/22/19 14:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/22/19 14:34	79-00-5	
Trichloroethene	**0.84J**	ug/L	1.0	0.17	1		11/22/19 14:34	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/22/19 14:34	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/22/19 14:34	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	94	%	80-120		1		11/22/19 14:34	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	77-122		1		11/22/19 14:34	17060-07-0	
Toluene-d8 (S)	104	%	80-120		1		11/22/19 14:34	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/22/19 14:34		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322109

QC Batch: 624192 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60322109001, 60322109002, 60322109003, 60322109004

METHOD BLANK: 2545142 Matrix: Water
Associated Lab Samples: 60322109001, 60322109002, 60322109003, 60322109004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/22/19 13:38	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/22/19 13:38	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/22/19 13:38	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/22/19 13:38	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/22/19 13:38	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/22/19 13:38	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/22/19 13:38	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/22/19 13:38	
2-Hexanone	ug/L	ND	10.0	1.0	11/22/19 13:38	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/22/19 13:38	
Acetone	ug/L	ND	10.0	3.3	11/22/19 13:38	
Benzene	ug/L	ND	1.0	0.079	11/22/19 13:38	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/22/19 13:38	
Bromoform	ug/L	ND	1.0	0.21	11/22/19 13:38	
Bromomethane	ug/L	ND	5.0	0.32	11/22/19 13:38	
Carbon disulfide	ug/L	ND	5.0	0.16	11/22/19 13:38	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/22/19 13:38	
Chlorobenzene	ug/L	ND	1.0	0.13	11/22/19 13:38	
Chloroethane	ug/L	ND	1.0	0.42	11/22/19 13:38	
Chloroform	ug/L	ND	1.0	0.10	11/22/19 13:38	
Chloromethane	ug/L	ND	1.0	0.16	11/22/19 13:38	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/22/19 13:38	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/22/19 13:38	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/22/19 13:38	
Ethylbenzene	ug/L	ND	1.0	0.12	11/22/19 13:38	
Methylene Chloride	ug/L	ND	1.0	0.27	11/22/19 13:38	
Styrene	ug/L	ND	1.0	0.15	11/22/19 13:38	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/22/19 13:38	
Toluene	ug/L	ND	1.0	0.14	11/22/19 13:38	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/22/19 13:38	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/22/19 13:38	
Trichloroethene	ug/L	ND	1.0	0.17	11/22/19 13:38	
Vinyl chloride	ug/L	ND	1.0	0.11	11/22/19 13:38	
Xylene (Total)	ug/L	ND	3.0	0.34	11/22/19 13:38	
1,2-Dichloroethane-d4 (S)	%	94	77-122		11/22/19 13:38	
4-Bromofluorobenzene (S)	%	96	80-120		11/22/19 13:38	
Toluene-d8 (S)	%	100	80-120		11/22/19 13:38	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322109

LABORATORY CONTROL SAMPLE: 2545143

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.9	100	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	20.1	101	71-122	
1,1,2-Trichloroethane	ug/L	20	20.4	102	76-123	
1,1-Dichloroethane	ug/L	20	19.9	99	78-117	
1,1-Dichloroethene	ug/L	20	19.4	97	74-122	
1,2-Dichloroethane	ug/L	20	18.9	94	73-120	
1,2-Dichloropropane	ug/L	20	20.1	100	78-115	
2-Butanone (MEK)	ug/L	100	83.9	84	54-133	
2-Hexanone	ug/L	100	97.6	98	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	99.6	100	62-130	
Acetone	ug/L	100	83.0	83	54-130	
Benzene	ug/L	20	20.5	102	80-120	
Bromodichloromethane	ug/L	20	20.0	100	78-121	
Bromoform	ug/L	20	22.2	111	62-137	
Bromomethane	ug/L	20	22.9	114	41-145	
Carbon disulfide	ug/L	20	20.3	101	64-119	
Carbon tetrachloride	ug/L	20	20.2	101	77-122	
Chlorobenzene	ug/L	20	21.5	107	80-123	
Chloroethane	ug/L	20	17.9	89	60-146	
Chloroform	ug/L	20	20.0	100	81-116	
Chloromethane	ug/L	20	17.6	88	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.3	101	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.2	101	78-118	
Dibromochloromethane	ug/L	20	21.4	107	73-128	
Ethylbenzene	ug/L	20	21.0	105	80-120	
Methylene Chloride	ug/L	20	20.3	102	80-126	
Styrene	ug/L	20	22.0	110	85-120	
Tetrachloroethene	ug/L	20	21.4	107	77-121	
Toluene	ug/L	20	21.5	108	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.7	98	80-120	
trans-1,3-Dichloropropene	ug/L	20	20.7	104	76-123	
Trichloroethene	ug/L	20	19.2	96	80-121	
Vinyl chloride	ug/L	20	19.9	99	46-162	
Xylene (Total)	ug/L	60	64.4	107	80-120	
1,2-Dichloroethane-d4 (S)	%			97	77-122	
4-Bromofluorobenzene (S)	%			96	80-120	
Toluene-d8 (S)	%			103	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322109

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 624192

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1e	Sample was diluted due to the presence of high levels of sediment in the vials.
pH	Post-analysis pH measurement indicates insufficient VOA sample preservation.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322109

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60322109001	**HP-11-SHALLOW-201911**	EPA 5030B/8260	624192		
60322109002	**HP-09-SHALLOW-201911**	EPA 5030B/8260	624192		
60322109003	**HP-12-SHALLOW-201911**	EPA 5030B/8260	624192		
60322109004	**DUP-01-201911**	EPA 5030B/8260	624192		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60322109

60322109

Client Name: Ramboll

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 7482 2006 3292 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: T296 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): As-read 1.5 Corr. Factor +0.0 Corrected 1.5

Date and initials of person examining contents: VB 11/22/19

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☑Yes ☐No ☐N/A	Next Day
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☐Yes ☐No ☑N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☑No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

11/22/19

Project Manager Review: Jami Church Date: _____

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company: Ramboll
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT: Next Day

Section B Required Project Information:

Report To: Tamara House-Knight
Copy To: Nick Zurweller / Haley Anders
Purchase Order No.:
Project Name: whirlpool
Project Number:

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analysis Test: 8260 VOC	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	HP-11-Shallow-201911	WT	G	11/21/19	1505	n/a	n/a		1				X					X	X		60322109 001
2	HP-09-Shallow-201911				1540				3												002
3	HP-12-Shallow-201911				1615				↓												003
4	DUP-01-201911				1615																004
5	~~TB-03~~																				
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Haley Anders/Ramboll	11/21/19	1800	[signature] /Pace	11.22.19	0830	1.5	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Haley Anders
SIGNATURE of SAMPLER: Haley Anders
DATE Signed (MM/DD/YY): 11/21/19

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 26, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on November 23, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Haley Ahlers, Ramboll
Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60322267001	**TMW-36B-201911**	Water	11/22/19 11:10	11/23/19 14:08
60322267002	**RW-1-201911**	Water	11/22/19 13:20	11/23/19 14:08
60322267003	**HP-15-DEEP**	Water	11/22/19 13:35	11/23/19 14:08
60322267004	**TB-04**	Water	11/22/19 08:00	11/23/19 14:08

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60322267001	**TMW-36B-201911**	EPA 5030B/8260	PGH	38	PASI-K
60322267002	**RW-1-201911**	EPA 5030B/8260	PGH	38	PASI-K
60322267003	**HP-15-DEEP**	EPA 5030B/8260	PGH	38	PASI-K
60322267004	**TB-04**	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll_AR
Date: November 26, 2019

General Information:
4 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 624790

B: Analyte was detected in the associated method blank.

- BLANK for HBN 624790 [MSV/1024 (Lab ID: 2547452)
  - Trichloroethene

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 624437

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 624790

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Sample: TMW-36B-201911 **Lab ID: 60322267001** Collected: 11/22/19 11:10 Received: 11/23/19 14:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**9.1J**	ug/L	10.0	3.3	1		11/25/19 14:16	67-64-1	
Benzene	**3.7**	ug/L	1.0	0.079	1		11/25/19 14:16	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/25/19 14:16	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/25/19 14:16	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/25/19 14:16	74-83-9	
2-Butanone (MEK)	**6.8J**	ug/L	10.0	0.70	1		11/25/19 14:16	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/25/19 14:16	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/25/19 14:16	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/25/19 14:16	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/25/19 14:16	75-00-3	
Chloroform	**0.51J**	ug/L	1.0	0.10	1		11/25/19 14:16	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/25/19 14:16	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/25/19 14:16	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/25/19 14:16	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/25/19 14:16	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/25/19 14:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/25/19 14:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/25/19 14:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/25/19 14:16	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/25/19 14:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/25/19 14:16	10061-02-6	
Ethylbenzene	**12.9**	ug/L	1.0	0.12	1		11/25/19 14:16	100-41-4	
2-Hexanone	**8.1J**	ug/L	10.0	1.0	1		11/25/19 14:16	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/25/19 14:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	**9.2J**	ug/L	10.0	0.56	1		11/25/19 14:16	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/25/19 14:16	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/25/19 14:16	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/25/19 14:16	127-18-4	
Toluene	**41.1**	ug/L	1.0	0.14	1		11/25/19 14:16	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/25/19 14:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/25/19 14:16	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/25/19 14:16	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/25/19 14:16	75-01-4	
Xylene (Total)	**60.1**	ug/L	3.0	0.34	1		11/25/19 14:16	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	97	%	80-120		1		11/25/19 14:16	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	77-122		1		11/25/19 14:16	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/25/19 14:16	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/25/19 14:16		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Sample: RW-1-201911 **Lab ID: 60322267002** Collected: 11/22/19 13:20 Received: 11/23/19 14:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**8.1J**	ug/L	10.0	3.3	1		11/25/19 14:31	67-64-1	
Benzene	**0.41J**	ug/L	1.0	0.079	1		11/25/19 14:31	71-43-2	
Bromodichloromethane	**0.28J**	ug/L	1.0	0.17	1		11/25/19 14:31	75-27-4	
Bromoform	**0.52J**	ug/L	1.0	0.21	1		11/25/19 14:31	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/25/19 14:31	74-83-9	
2-Butanone (MEK)	**2.6J**	ug/L	10.0	0.70	1		11/25/19 14:31	78-93-3	
Carbon disulfide	**0.60J**	ug/L	5.0	0.16	1		11/25/19 14:31	75-15-0	
Carbon tetrachloride	**0.28J**	ug/L	1.0	0.084	1		11/25/19 14:31	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/25/19 14:31	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/25/19 14:31	75-00-3	
Chloroform	**11.3**	ug/L	1.0	0.10	1		11/25/19 14:31	67-66-3	
Chloromethane	**0.28J**	ug/L	1.0	0.16	1		11/25/19 14:31	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/25/19 14:31	124-48-1	
1,1-Dichloroethane	**1.1**	ug/L	1.0	0.097	1		11/25/19 14:31	75-34-3	
1,2-Dichloroethane	**0.47J**	ug/L	1.0	0.14	1		11/25/19 14:31	107-06-2	B
1,1-Dichloroethene	**69.6**	ug/L	1.0	0.22	1		11/25/19 14:31	75-35-4	
cis-1,2-Dichloroethene	**1260**	ug/L	1000	170	1000		11/25/19 14:59	156-59-2	
trans-1,2-Dichloroethene	**13.5**	ug/L	1.0	0.17	1		11/25/19 14:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/25/19 14:31	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/25/19 14:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/25/19 14:31	10061-02-6	
Ethylbenzene	**0.46J**	ug/L	1.0	0.12	1		11/25/19 14:31	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/25/19 14:31	591-78-6	
Methylene Chloride	**4.3**	ug/L	1.0	0.27	1		11/25/19 14:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	**0.94J**	ug/L	10.0	0.56	1		11/25/19 14:31	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/25/19 14:31	100-42-5	
1,1,2,2-Tetrachloroethane	**3.5**	ug/L	1.0	0.31	1		11/25/19 14:31	79-34-5	
Tetrachloroethene	**17.8**	ug/L	1.0	0.22	1		11/25/19 14:31	127-18-4	
Toluene	**9.3**	ug/L	1.0	0.14	1		11/25/19 14:31	108-88-3	
1,1,1-Trichloroethane	**14.6**	ug/L	1.0	0.12	1		11/25/19 14:31	71-55-6	
1,1,2-Trichloroethane	**1.9**	ug/L	1.0	0.10	1		11/25/19 14:31	79-00-5	
Trichloroethene	**54600**	ug/L	1000	170	1000		11/25/19 14:59	79-01-6	
Vinyl chloride	**93.1**	ug/L	1.0	0.11	1		11/25/19 14:31	75-01-4	
Xylene (Total)	**2.5J**	ug/L	3.0	0.34	1		11/25/19 14:31	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	95	%	80-120		1		11/25/19 14:31	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/25/19 14:31	17060-07-0	
Toluene-d8 (S)	103	%	80-120		1		11/25/19 14:31	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/25/19 14:31		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Sample: HP-15-DEEP **Lab ID: 60322267003** Collected: 11/22/19 13:35 Received: 11/23/19 14:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**19.0**	ug/L	10.0	3.3	1		11/25/19 14:45	67-64-1	
Benzene	**0.31J**	ug/L	1.0	0.079	1		11/25/19 14:45	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/25/19 14:45	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/25/19 14:45	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/25/19 14:45	74-83-9	
2-Butanone (MEK)	**7.0J**	ug/L	10.0	0.70	1		11/25/19 14:45	78-93-3	
Carbon disulfide	**0.43J**	ug/L	5.0	0.16	1		11/25/19 14:45	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/25/19 14:45	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/25/19 14:45	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/25/19 14:45	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/25/19 14:45	67-66-3	
Chloromethane	**0.18J**	ug/L	1.0	0.16	1		11/25/19 14:45	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/25/19 14:45	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/25/19 14:45	75-34-3	
1,2-Dichloroethane	**0.15J**	ug/L	1.0	0.14	1		11/25/19 14:45	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/25/19 14:45	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/26/19 08:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/25/19 14:45	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/25/19 14:45	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/25/19 14:45	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/25/19 14:45	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/25/19 14:45	100-41-4	
2-Hexanone	**1.7J**	ug/L	10.0	1.0	1		11/25/19 14:45	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/25/19 14:45	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/25/19 14:45	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/25/19 14:45	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/25/19 14:45	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/25/19 14:45	127-18-4	
Toluene	**0.53J**	ug/L	1.0	0.14	1		11/25/19 14:45	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/25/19 14:45	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/25/19 14:45	79-00-5	
Trichloroethene	**0.53J**	ug/L	1.0	0.17	1		11/26/19 08:31	79-01-6	B
Vinyl chloride	**0.27J**	ug/L	1.0	0.11	1		11/25/19 14:45	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/25/19 14:45	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	95	%	80-120		1		11/25/19 14:45	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	77-122		1		11/25/19 14:45	17060-07-0	
Toluene-d8 (S)	105	%	80-120		1		11/25/19 14:45	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/25/19 14:45		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Sample: TB-04 **Lab ID: 60322267004** Collected: 11/22/19 08:00 Received: 11/23/19 14:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/25/19 14:02	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/25/19 14:02	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/25/19 14:02	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/25/19 14:02	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/25/19 14:02	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/25/19 14:02	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/25/19 14:02	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/25/19 14:02	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/25/19 14:02	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/25/19 14:02	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/25/19 14:02	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/25/19 14:02	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/25/19 14:02	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/25/19 14:02	75-34-3	
1,2-Dichloroethane	**0.14J**	ug/L	1.0	0.14	1		11/25/19 14:02	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/25/19 14:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/25/19 14:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/25/19 14:02	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/25/19 14:02	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/25/19 14:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/25/19 14:02	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/25/19 14:02	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/25/19 14:02	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/25/19 14:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/25/19 14:02	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/25/19 14:02	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/25/19 14:02	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/25/19 14:02	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/25/19 14:02	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/25/19 14:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/25/19 14:02	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/25/19 14:02	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/25/19 14:02	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/25/19 14:02	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	95	%	80-120		1		11/25/19 14:02	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	77-122		1		11/25/19 14:02	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/25/19 14:02	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/25/19 14:02		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

QC Batch: 624437 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60322267001, 60322267002, 60322267003, 60322267004

METHOD BLANK: 2546342 Matrix: Water
Associated Lab Samples: 60322267001, 60322267002, 60322267003, 60322267004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/25/19 13:33	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/25/19 13:33	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/25/19 13:33	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/25/19 13:33	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/25/19 13:33	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/25/19 13:33	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/25/19 13:33	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/25/19 13:33	
2-Hexanone	ug/L	ND	10.0	1.0	11/25/19 13:33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/25/19 13:33	
Acetone	ug/L	ND	10.0	3.3	11/25/19 13:33	
Benzene	ug/L	ND	1.0	0.079	11/25/19 13:33	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/25/19 13:33	
Bromoform	ug/L	ND	1.0	0.21	11/25/19 13:33	
Bromomethane	ug/L	ND	5.0	0.32	11/25/19 13:33	
Carbon disulfide	ug/L	ND	5.0	0.16	11/25/19 13:33	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/25/19 13:33	
Chlorobenzene	ug/L	ND	1.0	0.13	11/25/19 13:33	
Chloroethane	ug/L	ND	1.0	0.42	11/25/19 13:33	
Chloroform	ug/L	ND	1.0	0.10	11/25/19 13:33	
Chloromethane	ug/L	ND	1.0	0.16	11/25/19 13:33	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/25/19 13:33	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/25/19 13:33	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/25/19 13:33	
Ethylbenzene	ug/L	ND	1.0	0.12	11/25/19 13:33	
Methylene Chloride	ug/L	ND	1.0	0.27	11/25/19 13:33	
Styrene	ug/L	ND	1.0	0.15	11/25/19 13:33	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/25/19 13:33	
Toluene	ug/L	ND	1.0	0.14	11/25/19 13:33	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/25/19 13:33	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/25/19 13:33	
Trichloroethene	ug/L	ND	1.0	0.17	11/25/19 13:33	
Vinyl chloride	ug/L	ND	1.0	0.11	11/25/19 13:33	
Xylene (Total)	ug/L	ND	3.0	0.34	11/25/19 13:33	
1,2-Dichloroethane-d4 (S)	%	96	77-122		11/25/19 13:33	
4-Bromofluorobenzene (S)	%	93	80-120		11/25/19 13:33	
Toluene-d8 (S)	%	101	80-120		11/25/19 13:33	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

LABORATORY CONTROL SAMPLE: 2546343

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.7	104	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	20.5	103	71-122	
1,1,2-Trichloroethane	ug/L	20	21.1	106	76-123	
1,1-Dichloroethane	ug/L	20	20.3	101	78-117	
1,1-Dichloroethene	ug/L	20	20.4	102	74-122	
1,2-Dichloroethane	ug/L	20	19.3	97	73-120	
1,2-Dichloropropane	ug/L	20	20.2	101	78-115	
2-Butanone (MEK)	ug/L	100	87.9	88	54-133	
2-Hexanone	ug/L	100	93.2	93	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	100	100	62-130	
Acetone	ug/L	100	84.3	84	54-130	
Benzene	ug/L	20	21.3	107	80-120	
Bromodichloromethane	ug/L	20	20.2	101	78-121	
Bromoform	ug/L	20	22.1	111	62-137	
Bromomethane	ug/L	20	20.3	102	41-145	
Carbon disulfide	ug/L	20	20.7	103	64-119	
Carbon tetrachloride	ug/L	20	21.1	105	77-122	
Chlorobenzene	ug/L	20	22.3	111	80-123	
Chloroethane	ug/L	20	19.7	99	60-146	
Chloroform	ug/L	20	20.3	102	81-116	
Chloromethane	ug/L	20	15.1	76	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.6	103	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.8	104	78-118	
Dibromochloromethane	ug/L	20	22.2	111	73-128	
Ethylbenzene	ug/L	20	21.0	105	80-120	
Methylene Chloride	ug/L	20	22.1	111	80-126	
Styrene	ug/L	20	22.4	112	85-120	
Tetrachloroethene	ug/L	20	23.1	115	77-121	
Toluene	ug/L	20	22.3	112	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.5	98	80-120	
trans-1,3-Dichloropropene	ug/L	20	20.7	104	76-123	
Trichloroethene	ug/L	20	20.0	100	80-121	
Vinyl chloride	ug/L	20	19.9	100	46-162	
Xylene (Total)	ug/L	60	65.6	109	80-120	
1,2-Dichloroethane-d4 (S)	%			96	77-122	
4-Bromofluorobenzene (S)	%			95	80-120	
Toluene-d8 (S)	%			103	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

QC Batch: 624790
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60322267003

METHOD BLANK: 2547452
Matrix: Water
Associated Lab Samples: 60322267003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/26/19 08:17	
Trichloroethene	ug/L	0.26J	1.0	0.17	11/26/19 08:17	
1,2-Dichloroethane-d4 (S)	%	95	77-122		11/26/19 08:17	
4-Bromofluorobenzene (S)	%	95	80-120		11/26/19 08:17	
Toluene-d8 (S)	%	102	80-120		11/26/19 08:17	

LABORATORY CONTROL SAMPLE: 2547453

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/L	20	21.8	109	80-120	
Trichloroethene	ug/L	20	20.6	103	80-121	
1,2-Dichloroethane-d4 (S)	%			101	77-122	
4-Bromofluorobenzene (S)	%			96	80-120	
Toluene-d8 (S)	%			101	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 624437

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 624790

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60322267001	**TMW-36B-201911**	EPA 5030B/8260	624437		
60322267002	**RW-1-201911**	EPA 5030B/8260	624437		
60322267003	**HP-15-DEEP**	EPA 5030B/8260	624437		
60322267003	**HP-15-DEEP**	EPA 5030B/8260	624790		
60322267004	**TB-04**	EPA 5030B/8260	624437		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60322267

60322267

Client Name: Ramboll

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 778249477233 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: T296 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): As-read 1.3 Corr. Factor +0.0 Corrected 1.3

Date and initials of person examining contents: VB 11/23/19

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☑Yes ☐No ☐N/A	NEXT DAY
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☑No ☐N/A	NO tests listed on COC
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☐Yes ☐No ☑N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☑Yes ☐No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution: Per Haley, analyze for 8260.

Project Manager Review: Jami Church 11/23/19 Date:

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	Rambol
Address:	
Email To:	
Phone:	Fax:
Requested Due Date/TAT:	Next Day

Section B Required Project Information:

Report To:	Tamara Hause-Knight
Copy To:	Nick Zurweller/Haley Ahlers
Purchase Order No.:	
Project Name:	Whirlpool
Project Number:	

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	603222607	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	TMW-36B-201911	WT	G	11/22/19	1110	n/a	n/a		3				X								001
2	RW-1-201911	↓	↓	↓	1320	↓	↓		↓				↓								002
3	HP-15-Deep	↓	↓	↓	1335	↓	↓		↓				↓								003
4	TB-04								2				↓								004
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Haley Ahlers/Rambol	11/22/19	1820	Valerie B/Pace	11/23/19	0905	1.3	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Haley Ahlers

SIGNATURE of SAMPLER: Haley Ahlers

DATE Signed (MM/DD/YY): 11/22/19

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Attachment D
Data Validation Report

LEVEL II DATA VALIDATION REVIEW

4th Quarter Groundwater Monitoring Event 2019

Whirlpool Corporation

Fort Smith, Arkansas

Laboratory Sample Delivery Groups (SDGs): 60318969, 60319115, 60319241, 60319340, 60322105, and 60322110

Laboratory: Pace Analytical Services, LLC Lenexa, Kansas; Pittsburgh, Pennsylvania;

Reviewer: Kristin Drucquer

Date Reviewed: January 2, 2020

This data validation report has been prepared by Ramboll US Corporation (Ramboll) to assess the validity and usability of laboratory analytical data generated from samples collected during the 4th quarter groundwater sampling event at the Whirlpool Corporation, Fort Smith, Arkansas Site (the "site") from October 22 through October 25, 2019; and on November 21, 2019.

The analytical data were evaluated for quality assurance and quality control (QA/QC) based on the following document: *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (OSWER 9355.0-136, EPA-540-R-2017-002, January 2017) and *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Methods Data Review* (OSWER 9355.0-135, EPA-540-R-2017-001, January 2017).

This report summarizes the QA/QC evaluation of the data according to precision, accuracy, representativeness, completeness and comparability relative to the project data quality objectives. This report provides a quantitative and qualitative assessment of the data and identifies potential sources of error, uncertainty, and bias that may affect the overall usability of the data.

Ninety-nine (99) groundwater samples, nine blind groundwater field duplicates, seven equipment rinsate blanks, and seven trip blanks were analyzed for one or more of the following analyses:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) 8260
- Chloride and sulfate by USEPA 300.0
- Iron USEPA 6010
- Nitrate, nitrite, and nitrogen as nitrite and nitrate by USEPA 353.2
- Total organic carbon (TOC) and dissolved organic carbon (DOC) by SM5310C
- Dissolved gases (methane, ethane, ethene, acetylene, and/or hydrogen) by Pace Method AM20GAX
- Volatile fatty acids by Pace Method AM23G

Pace Analytical Services, LLC (Pace) located in Lenexa, Kansas analyzed all the aqueous samples with the exception of the analyses for dissolved gases and volatile fatty acids. Pace located in Pittsburgh performed the analyses for dissolved gasses and volatile fatty acids.

The table below summarizes the field sample identifications, sample type, laboratory sample identification, and matrix types for the data included in this data set:

Field ID	Sample Type	Lab ID	Matrix
SDG: 60318969			
MW-176-201910	SA	60318969001	Aqueous
MW-186-201910	SA	60318969002	Aqueous
MW-187-201910	SA	60318969003	Aqueous
MW-62R-201910	SA	60318969004	Aqueous
MW-68-201910	SA	60318969005	Aqueous
MW-40R-201910	SA	60318969006	Aqueous
MW-191-201910	SA	60318969007	Aqueous
MW-190-201910	SA	60318969008	Aqueous
MW-192-201910	SA	60318969009	Aqueous
TMW-35-201910	SA	60318969010	Aqueous
MW-63R-201910	SA	60318969011	Aqueous
MW-39R-201910	SA	60318969012	Aqueous
EB-01-201910	EB	60318969013	Aqueous
TB-01-201910	TB	60318969014	Aqueous
MW-195-201910	SA	60318969015	Aqueous
TMW-29-201910	SA	60318969016	Aqueous
TMW-20-201910	SA	60318969017	Aqueous
TB-02-201910	SA	60318969018	Aqueous
ITMW-7-201910	SA	60318969019	Aqueous
TMW-21-201910	SA	60318969020	Aqueous
TMW-11-201910	SA	60318969021	Aqueous
TMW-10-201910	SA	60318969022	Aqueous
MW-89-201910	SA	60318969023	Aqueous
SDG: 60319115			
MW-56R-201910	SA	60319115001	Aqueous
MW-57R-201910	SA	60319115002	Aqueous
TMW-19-201910	SA	60319115003	Aqueous
DUP-06-201910	FD	60319115004	Aqueous
MW-97-201910	SA	60319115005	Aqueous
MW-96-201910	SA	60319115006	Aqueous
MW-82-201910	SA	60319115007	Aqueous
DUP-02-201910	FD	60319115008	Aqueous
IW-78-201910	SA	60319115009	Aqueous
ITMW-1R-201910	SA	60319115010	Aqueous
MW-175-201910	SA	60319115011	Aqueous
TMW-30-201910	SA	60319115012	Aqueous
MW-182-201910	SA	60319115013	Aqueous
MW-29-201910	SA	60319115014	Aqueous
TMW-27-201910	SA	60319115015	Aqueous
ITMW-20-201910	SA	60319115016	Aqueous

Field ID	Sample Type	Lab ID	Matrix
DUP-05-201910	FD	60319115017	Aqueous
MW-26-201910	SA	60319115018	Aqueous
MW-84-201910	SA	60319115019	Aqueous
MW-22-201910	SA	60319115020	Aqueous
MW-28-201910	SA	60319115021	Aqueous
DUP-03-201910	FD	60319115022	Aqueous
MW-60R-201910	SA	60319115023	Aqueous
MW-196-201910	SA	60319115024	Aqueous
MW-55R-201910	SA	60319115025	Aqueous
DUP-04-2019110	FD	60319115026	Aqueous
TMW-24-2019110	SA	60319115027	Aqueous
TMW-23-2019110	SA	60319115028	Aqueous
MW-24-2019110	SA	60319115029	Aqueous
MW-178-201910	SA	60319115030	Aqueous
EB-02-201910	EB	60319115031	Aqueous
EB-03-201910	EB	60319115032	Aqueous
TB-03-201910	TB	60319115033	Aqueous
MW-98-201910	SA	60319115034	Aqueous
TB-04-201910	TB	60319115035	Aqueous
TB-05-201910	TB	60319115036	Aqueous
VP-10-201910	SA	60319115037	Aqueous
VP-12-201910	SA	60319115038	Aqueous
VP-7-201910	SA	60319115039	Aqueous
VP-8-201910	SA	60319115040	Aqueous
VP-14-201910	SA	60319115041	Aqueous
MW-194-201910	SA	60319115042	Aqueous
MW-61R-201910	SA	60319115043	Aqueous
TMW-26-201910	SA	60319115044	Aqueous
MW-46R-201910	SA	60319115045	Aqueous
MW-184-201910	SA	60319115046	Aqueous
MW-183R-201910	SA	60319115047	Aqueous
MW-99-201910	SA	60319115048	Aqueous
I W-77-201910	SA	60319115049	Aqueous
TMW-12-201910	SA	60319115050	Aqueous
TMW-14-201910	SA	60319115051	Aqueous
MW -50R-201910	SA	60319115052	Aqueous
RW -69-201910	SA	60319115053	Aqueous
ITMW -9-201910	SA	60319115054	Aqueous
MW -87-201910	SA	60319115055	Aqueous

Field ID	Sample Type	Lab ID	Matrix
MW -58R-201910	SA	60319115056	Aqueous
MW -38-201910	SA	60319115057	Aqueous
DUP -01-201910	SA	60319115058	Aqueous
DUP -07-201910	SA	60319115059	Aqueous
TMW -16-201910	SA	60319115060	Aqueous
TMW -22R-201910	SA	60319115061	Aqueous
SDG: 60319241			
TMW-34-201910	SA	60319241001	Aqueous
TMW-32-201910	SA	60319241002	Aqueous
MW-186-201910	SA	60319241003	Aqueous
TMW-25-201910	SA	60319241004	Aqueous
IW-147-201910	SA	60319241005	Aqueous
MW-95-201910	SA	60319241006	Aqueous
MW-83-201910	SA	60319241007	Aqueous
ITMW-18-201910	SA	60319241008	Aqueous
ITMW-19-201910	SA	60319241009	Aqueous
MW-93-201910	SA	60319241010	Aqueous
MW-189-201910	SA	60319241011	Aqueous
TMW-36-201910	SA	60319241012	Aqueous
MW-185-201910	SA	60319241013	Aqueous
MW-27-201910	SA	60319241014	Aqueous
ITMW-2R-201910	SA	60319241015	Aqueous
ITMW-11-201910	SA	60319241016	Aqueous
ITMW-12R-201910	SA	60319241017	Aqueous
MW-91-201910	SA	60319241018	Aqueous
ITMW-21-201910	FD	60319241019	Aqueous
MW-85R-201910	SA	60319241020	Aqueous
IW-134-201910	FD	60319241021	Aqueous
MW-37-201910	SA	60319241022	Aqueous
ITMW-16-201910	SA	60319241023	Aqueous
ITMW-10-201910	SA	60319241024	Aqueous
ITMW-5-201910	SA	60319241025	Aqueous
IW-132-201910	SA	60319241026	Aqueous
DUP-08-201910	FD	60319241027	Aqueous
DUP-09-201910	FD	60319241028	Aqueous
DUP-10-201910	FD	60319241029	Aqueous
EB-04-201910	EB	60319241030	Aqueous
EB-05-201910	EB	60319241031	Aqueous
MW-179-201910	EB	60319241032	Aqueous

Field ID	Sample Type	Lab ID	Matrix
TB-06-201910	TB	60319241033	Aqueous
TB-07-201910	TB	60319241034	Aqueous
TB-08-201910	TB	60319241035	Aqueous
SDG: 60319340			
MW-25R-201910	SA	60319340001	Aqueous
EB-06-201910	EB	60319340002	Aqueous
TB-09-201910	TB	60319340003	Aqueous
SDG: 60322105			
IW-73-201910	SA	60322105001/ 60322105002	Aqueous
SDG: 60322110			
IW-73-201910	SA	60322110001	Aqueous

Sample Type: SA = Sample TB = Trip Blank FD = Field Duplicate EB = Equipment Blank

The laboratory reports were evaluated for the following QC elements:

- Data Package Completeness,
- Sample Preservation and Holding Times,
- Blanks,
- Surrogate Compound Recoveries,
- Laboratory Control Sample (LCS),
- Matrix Spike/Matrix Spike Duplicates (MS/MSD),
- Laboratory and Field Precision,
- Overall Assessment of Data.

General Overall Assessment:

_____ Data are usable without qualification.

__X__ Data are usable with qualification (noted below).

_____ Some or all data are unusable for any purpose (detailed below).

Case Narrative Comments: Any case narrative comments concerning data qualification were noted below.

1.0 Data Package Completeness

Were all items delivered as specified on the COC and is the data package complete?

Yes, the analysis was performed as requested on the chain-of-custody records. All samples were received by the laboratory and analyzed properly with appropriate corrective actions taken when appropriate. The percent completeness for all methods is 100%, with no data rejected as a result of the data validation.

2.0 Laboratory Case Narrative, Sample Preservation and Cooler Receipt Form

Were issues noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narratives indicated the following issues associated with project samples included in this data set:

- **SDG 60318969 –** The laboratory indicated that Matrix Spike/Matrix Spike Duplicate (MSD) recoveries were outside the acceptance criteria for chloride, sulfate, nitrite, TOC, and DOC. See Section 8.0 for details. No exceptions were noted in the case narrative.
- **SDG 60319115 –** The case narratives indicated nonconformances for method blanks, see Sections 4.0 for further discussion. The laboratory also noted that sample TMW-30-201910 was not preserved sufficiently. See Section 3.0 for discussion.
- **SDG 60319241** – The case narratives indicated that DOC was detected in one method blank. See Section 4.0 for further discussion. The case narrative also indicated the recovery for nitrite, and for nitrogen as nitrite and nitrate in one MS was outside the acceptance criteria. See Section 8.0 for further discussion. The case narrative indicated that trichloroethene exceeded the calibration range in one sample. See Section 11.0 for further discussion.
- **SDG 60319340** – The case narratives indicated that TOC was detected in one method blank. See Section 4.0 for further discussion. The case narrative also indicated the recovery for TOC was outside the acceptance criteria in MS samples. See Section 8.0 for further discussion.
- **SDG 60322105** – The case narrative indicated that the sample was analyzed outside the 14-day hold time for dissolved hydrogen; see Section 3.0 for further discussion.
- **SDG 60322110** – The case narrative did not indicate any relevant comments.

3.0 Technical Holding Times and Sample Receipt

Were samples received within the required temperature and preservation requirements?

No. The pH measured for sample TMW-30-201910 was above the method requirement of <2 for VOC analysis. The sample was analyzed within the 7-day holding time for non-preserved samples; therefore, no data were qualified.

Were samples extracted/analyzed within method specific holding time requirements?

No. One sample, IW-73-201910, was analyzed three days outside the method holding time of 14-days for the dissolved hydrogen analysis. The result for dissoved hydrogen was qualified "J" as estimated.

4.0 Blank Contamination

Were any analytes detected in the associated laboratory or field blanks?

Yes. The following table summarizes analytes detected in laboratory method and field blanks collected as part of this data set:

SDG	Blank ID	Blank Type	Analyte	Concentration	Units
60318969	2526889	Method	DOC	0.30 J	mg/L

SDG	Blank ID	Blank Type	Analyte	Concentration	Units
603191115	2524157	Method	1,2-Dichloroethane	0.15 J	µg/L
603191115	2524157	Method	Tetrachloroethene	0.30 J	µg/L
603191115	2524159	Method	Carbon Disulfide	0.19 J	µg/L
603191115	2524159	Method	DOC	0.30 J	µg/L
60319241	2526889	Method	DOC	0.30 J	µg/L
60319340	2529088	Method	TOC	0.30 J	µg/L
60322105	2550475	Method	1,2-Dichloroethane	0.14 J	µg/L

ID = Identification µg/L = micrograms per liter J = result was detected between the method detection limit and reporting limit and is considered estimated

Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration for organics and 10X for common laboratory contaminants or inorganics did not require qualification. Results that are qualified due to blank contamination are summarized in the table below.

SDG	Field ID	Analyte	Qualification
60318969	TMW-11-201910	DOC	**J+**
60319115	TMW -22R-201910	DOC	**U**
60319115	ITMW-1R-201910	Tetrachloroethene	**U**
60319115	ITMW-1R-201910	1,2-Dichloroethane	**U**
60319115	MW-175-201910	Tetrachloroethene	**U**
60319115	MW-175-201910	1,2-Dichloroethane	**U**
60319115	MW-182-201910	1,2-Dichloroethane	**U**
60319115	MW-29-201910	1,2-Dichloroethane	**U**
60319115	ITMW-20-201910	1,2-Dichloroethane	**U**
60319115	DUP-05-201910	1,2-Dichloroethane	**U**
60319115	MW-26-201910	1,2-Dichloroethane	**U**
60319115	MW-84-201910	1,2-Dichloroethane	**U**
60319115	MW-28-201910	1,2-Dichloroethane	**U**
60319115	DUP-03-201910	1,2-Dichloroethane	**U**
60319115	MW-60R-201910	1,2-Dichloroethane	**U**
60319115	TMW-24-2019110	1,2-Dichloroethane	**U**
60319115	TMW-24-2019110	Tetrachloroethene	**U**
60319115	TMW-23-2019110	1,2-Dichloroethane	**U**
60319115	MW-24-2019110	1,2-Dichloroethane	**U**
60319115	EB-02-201910	Carbon Disulfide	**U**
60319115	TB-04-201910	Carbon Disulfide	**U**
60319115	VP-10-201910	Carbon Disulfide	**U**
60319115	VP-12-201910	Carbon Disulfide	**U**
60319115	TMW-26-201910	Carbon Disulfide	**U**
60319241	TMW-32-201910	DOC	**J+**
60319340	MW-25R-201910	DOC	**U**

ID = Identification U = Non-detect J+ = Estimated with a high bias

5.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes. Three surrogates (4-bromofluorobenzene, 1,2-dichloroethane-d4, and toluene-d8) were

added to each sample analyzed for VOCs to evaluate the laboratory performance on individual samples. Percent recoveries (%R) for all volatile surrogates in all samples analyzed for VOCs were within the laboratory acceptance limits.

6.0 Internal Standards

Were the Internal standard areas within control limits and was the retention time criteria met?

Yes. Internal standards indicate whether GC/MS sensitivity and response were stable during each analysis. The laboratory reported that all criteria were within method requirements.

7.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes. The LCS, and laboratory control sample duplicate (LCSD) when anlayzed, provide information on the accuracy of the analytical method and on the laboratory performance.

8.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples reported as part of these SDGs?

Yes. MS/MSD data are used to assess long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery at the time of sample analysis.

Were MS/MSD recoveries within evaluation criteria?

No. MS/MSD recoveries which were outside acceptance evaluation criteria are summarized in the table below.

SDG	Sample ID	Analyte	MS Recovery (%)	MS Recovery Criteria (%)
60318969	TMW-11-201910	Nitrite	**112**	90-110
60319241	IW-147-201910	Nitrite	**113**	90-110
60319340	MW-25R-201910	TOC	**63**	80-120

MS = Matrix Spike MSD = Matrix Spike Duplicate % = Percent

Only the parent samples spiked were evaluated for qualification. Non-detect results associated with recoveries with a high bias were not qualified. MS/MSD recoveries for non-project samples were not evaluated.

TOC in sample MW-25R-201910 was qualified "J" as estimated because the associated MS was below the acceptance criteria; however, the final qualifier applied was "U" because the result was also qualified for method blank contamination.

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples performed as part of this SDG?

Yes, laboratory duplicates, when required by the method were analyzed. The RPDs were

within acceptance criteria.

10.0 Field Duplicate Results (Field Precision)

Were field duplicate samples collected as part of the evaluated SDGs?

Yes. The table below summarizes field duplicate pairs.

SDG	Field ID	Field Duplicate ID
DUP-01	MW-58R-201910	DUP-01
60319115	MW-82-201910	DUP-02
DUP-03	MW-46R-201910	DUP-03
DUP-04	MW-55R-201910	DUP-04
DUP-05	ITMW-20-201910	DUP-05
DUP-06	TMW-19-201910	DUP-06
DUP-07	ITMW-9-201910	DUP-07
DUP-08	MW-189-201910	DUP-08
DUP-09	MW-85R-201910	DUP-09
DUP-10	ITMW-16-201910	DUP-10

ID = Identification

Were field duplicates within evaluation criteria?

Yes. RPDs were calculated for results that were above the reporting limit in both the parent sample and field duplicate. Results were with 30% RPD.

11.0 Detects and Calibration Range

For samples that were diluted and nondetect, were undiluted results also reported?

No. All samples collected as part of this data set and analyzed with dilutions had detections.

For samples that were not diluted and detected, were the results within calibration range?

No. The concentrations for trichloroethene in sample ITMW-19-201910 was above the calibration range. The result was qualified "J" as estimated. This sample was analyzed at 1x and a 5x dilution and trichloroethene was not detected. The laboratory reported the initial analysis with a qualifier. Results reported between the laboratory method detection limit (MDL) and RL were flagged "J" as estimated by the laboratory.

12.0 Additional Qualifications

Were additional qualifications applied?

No.

13.0 Overall Data Assessment

The data are usable for its intended purpose based on an evaluation of the QC parameters discussed in this report. Some data are qualified as estimated due to the inability to meet all QC criteria. The table below summarizes the final qualifications for the analytical data.

Data Qualifier Summary:

SDG	Field ID	Analyte	Qualifier	Reason for Qualification
60318969	TMW-11-201910	Organic Carbon (dissolved)	J+	Method blank contamination
60318969	MW-176-201910	trans-1,2-Dichloroethene	J	Result <RL
60318969	MW-187-201910	1,1-Dichloroethane	J	Result <RL
60318969	MW-188-201910	Carbon Disulfide	J	Result <RL
60318969	MW-190-201910	cis-1,2-Dichloroethene	J	Result <RL
60318969	MW-63R-201910	cis-1,2-Dichloroethene	J	Result <RL
60318969	ITMW-7-201910	Vinyl Chloride	J	Result <RL
60318969	ITMW-7-201910	Benzene	J	Result <RL
60318969	TMW-21-201910	Carbon Disulfide	J	Result <RL
60318969	TMW-21-201910	4-Methyl-2-pentanone	J	Result <RL
60318969	TMW-21-201910	trans-1,2-Dichloroethene	J	Result <RL
60318969	TMW-11-201910	Vinyl Chloride	J	Result <RL
60318969	TMW-11-201910	cis-1,2-Dichloroethene	J	Result <RL
60318969	TMW-11-201910	Toluene	J	Result <RL
60318969	TMW-11-201910	Trichloroethene	J	Result <RL
60318969	TMW-10-201910	4-Methyl-2-pentanone	J	Result <RL
60318969	TMW-10-201910	Carbon Disulfide	J	Result <RL
60318969	MW-89-201910	cis-1,2-Dichloroethene	J	Result <RL
60319340	MW-25R-201910	Organic Carbon (total)	U	Method blank contamination; qualify non-detect at RL
60319340	MW-25R-201910	1,1,2-Trichloroethane	J	Result <RL
60319340	MW-25R-201910	Toluene	J	Result <RL
60319340	MW-25R-201910	1,2-Dichloroethane	J	Result <RL
60319340	MW-25R-201910	Tetrachloroethene	J	Result <RL
60319340	MW-25R-201910	Benzene	J	Result <RL
60319340	MW-25R-201910	1,1,1-Trichloroethane	J	Result <RL
60319340	MW-25R-201910	Carbon Disulfide	J	Result <RL
60319115	MW-194-201910	Nitrogen	J	Result <RL
60319115	MW-61R-201910	Nitrogen	J	Result <RL
60319115	MW -50R-201910	Nitrogen	J	Result <RL
60319115	MW -38-201910	Nitrogen	J	Result <RL
60319115	TMW -16-201910	Nitrogen, Nitrite	J	Result <RL
60319115	TMW -16-201910	Nitrogen	J	Result <RL
60319115	TMW -22R-201910	Nitrogen, Nitrite	J	Result <RL
60319115	TMW -22R-201910	Nitrogen	J	Result <RL
60319115	MW-194-201910	Organic Carbon (dissolved)	J	Result <RL
60319115	MW-194-201910	Organic Carbon (total)	J	Result <RL
60319115	MW-61R-201910	Organic Carbon (dissolved)	J	Result <RL
60319115	MW-61R-201910	Organic Carbon (total)	J	Result <RL
60319115	RW -69-201910	Organic Carbon (total)	J	Result <RL
60319115	MW -87-201910	Organic Carbon (total)	J	Result <RL
60319115	MW -58R-201910	Organic Carbon (total)	J	Result <RL
60319115	TMW -22R-201910	Organic Carbon (dissolved)	U	Method blank contamination;

SDG	Field ID	Analyte	Qualifier	Reason for Qualification
				qualify non-detect at RL
60319115	ITMW -9-201910	Iron	J	Result <RL
60319115	MW-56R-201910	Vinyl Chloride	J	Result <RL
60319115	MW-56R-201910	trans-1,2-Dichloroethene	J	Result <RL
60319115	MW-57R-201910	Vinyl Chloride	J	Result <RL
60319115	MW-57R-201910	trans-1,2-Dichloroethene	J	Result <RL
60319115	TMW-19-201910	1,1-Dichloroethane	J	Result <RL
60319115	DUP-06-201910	1,1-Dichloroethane	J	Result <RL
60319115	MW-82-201910	trans-1,2-Dichloroethene	J	Result <RL
60319115	MW-82-201910	Chloromethane	J	Result <RL
60319115	MW-82-201910	Bromomethane	J	Result <RL
60319115	MW-82-201910	Bromoform	J	Result <RL
60319115	DUP-02-201910	Chloromethane	J	Result <RL
60319115	DUP-02-201910	1,2-Dichloroethane	J	Result <RL
60319115	DUP-02-201910	cis-1,2-Dichloroethene	J	Result <RL
60319115	IW-78-201910	Bromomethane	J	Result <RL
60319115	IW-78-201910	Carbon Disulfide	J	Result <RL
60319115	IW-78-201910	Acetone	J	Result <RL
60319115	ITMW-1R-201910	Vinyl Chloride	J	Result <RL
60319115	ITMW-1R-201910	Benzene	J	Result <RL
60319115	ITMW-1R-201910	Carbon Disulfide	J	Result <RL
60319115	ITMW-1R-201910	Tetrachloroethene	U	Method blank contamination; qualify non-detect at RL
60319115	ITMW-1R-201910	1,2-Dichloroethane	U	Method blank contamination; qualify non-detect at RL
60319115	MW-175-201910	Tetrachloroethene	U	Method blank contamination; qualify non-detect at RL
60319115	MW-175-201910	1,2-Dichloroethane	U	Method blank contamination; qualify non-detect at RL
60319115	MW-175-201910	Carbon Disulfide	J	Result <RL
60319115	MW-175-201910	1,1-Dichloroethene	J	Result <RL
60319115	MW-175-201910	Vinyl Chloride	J	Result <RL
60319115	TMW-30-201910	Carbon Disulfide	J	Result <RL
60319115	TMW-30-201910	Benzene	J	Result <RL
60319115	TMW-30-201910	Vinyl Chloride	J	Result <RL
60319115	TMW-30-201910	4-Methyl-2-pentanone	J	Result <RL
60319115	TMW-30-201910	2-Hexanone	J	Result <RL
60319115	MW-182-201910	Benzene	J	Result <RL
60319115	MW-182-201910	1,2-Dichloroethane	U	Method blank contamination; qualify non-detect at RL
60319115	MW-29-201910	1,2-Dichloroethane	U	Method blank contamination; qualify non-detect at RL

SDG	Field ID	Analyte	Qualifier	Reason for Qualification
60319115	TMW-27-201910	2-Butanone	J	Result <RL
60319115	ITMW-20-201910	1,2-Dichloroethane	U	Method blank contamination; qualify non-detect at RL
60319115	DUP-05-201910	1,2-Dichloroethane	U	Method blank contamination; qualify non-detect at RL
60319115	MW-26-201910	1,2-Dichloroethane	U	Method blank contamination; qualify non-detect at RL
60319115	MW-84-201910	2-Butanone	J	Result <RL
60319115	MW-84-201910	Chloromethane	J	Result <RL
60319115	MW-84-201910	Dibromochloromethane	J	Result <RL
60319115	MW-84-201910	1,2-Dichloroethane	U	Method blank contamination; qualify non-detect at RL
60319115	MW-84-201910	Acetone	J	Result <RL
60319115	MW-28-201910	1,2-Dichloroethane	U	Method blank contamination; qualify non-detect at RL
60319115	DUP-03-201910	Chloroform	J	Result <RL
60319115	DUP-03-201910	Vinyl Chloride	J	Result <RL
60319115	DUP-03-201910	1,2-Dichloroethane	U	Method blank contamination; qualify non-detect at RL
60319115	DUP-03-201910	trans-1,2-Dichloroethene	J	Result <RL
60319115	MW-60R-201910	Chlorobenzene	J	Result <RL
60319115	MW-60R-201910	1,2-Dichloroethane	U	Method blank contamination; qualify non-detect at RL
60319115	MW-55R-201910	cis-1,2-Dichloroethene	J	Result <RL
60319115	MW-55R-201910	1,1-Dichloroethene	J	Result <RL
60319115	MW-55R-201910	Vinyl Chloride	J	Result <RL
60319115	DUP-04-2019110	Vinyl Chloride	J	Result <RL
60319115	DUP-04-2019110	1,1-Dichloroethene	J	Result <RL
60319115	TMW-24-2019110	1,2-Dichloroethane	U	Method blank contamination; qualify non-detect at RL
60319115	TMW-24-2019110	Tetrachloroethene	U	Method blank contamination; qualify non-detect at RL
60319115	TMW-24-2019110	Chloroform	J	Result <RL
60319115	TMW-24-2019110	Vinyl Chloride	J	Result <RL
60319115	TMW-23-2019110	1,1-Dichloroethene	J	Result <RL
60319115	TMW-23-2019110	1,2-Dichloroethane	U	Method blank contamination;

SDG	Field ID	Analyte	Qualifier	Reason for Qualification
				qualify non-detect at RL
60319115	MW-24-2019110	Chloromethane	J	Result <RL
60319115	MW-24-2019110	cis-1,2-Dichloroethene	J	Result <RL
60319115	MW-24-2019110	1,2-Dichloroethane	U	Method blank contamination; qualify non-detect at RL
60319115	MW-24-2019110	Dibromochloromethane	J	Result <RL
60319115	EB-02-201910	Carbon Disulfide	U	Method blank contamination; qualify non-detect at RL
60319115	EB-02-201910	Methylene Chloride	J	Result <RL
60319115	EB-03-201910	Methylene Chloride	J	Result <RL
60319115	MW-98-201910	Trichloroethene	J	Result <RL
60319115	TB-04-201910	Carbon Disulfide	U	Method blank contamination; qualify non-detect at RL
60319115	VP-10-201910	Ethyl Benzene	J	Result <RL
60319115	VP-10-201910	2-Butanone	J	Result <RL
60319115	VP-10-201910	Carbon Disulfide	U	Method blank contamination; qualify non-detect at RL
60319115	VP-10-201910	Methylene Chloride	J	Result <RL
60319115	VP-10-201910	Trichloroethene	J	Result <RL
60319115	VP-10-201910	Benzene	J	Result <RL
60319115	VP-10-201910	trans-1,2-Dichloroethene	J	Result <RL
60319115	VP-10-201910	Vinyl Chloride	J	Result <RL
60319115	VP-10-201910	4-Methyl-2-pentanone	J	Result <RL
60319115	VP-12-201910	Carbon Disulfide	U	Method blank contamination; qualify non-detect at RL
60319115	VP-12-201910	Chloroform	J	Result <RL
60319115	VP-12-201910	Benzene	J	Result <RL
60319115	VP-7-201910	2-Hexanone	J	Result <RL
60319115	VP-7-201910	Toluene	J	Result <RL
60319115	VP-7-201910	4-Methyl-2-pentanone	J	Result <RL
60319115	VP-7-201910	Chloromethane	J	Result <RL
60319115	VP-8-201910	2-Hexanone	J	Result <RL
60319115	VP-8-201910	cis-1,2-Dichloroethene	J	Result <RL
60319115	VP-8-201910	Toluene	J	Result <RL
60319115	VP-8-201910	Benzene	J	Result <RL
60319115	VP-8-201910	4-Methyl-2-pentanone	J	Result <RL
60319115	VP-8-201910	Vinyl Chloride	J	Result <RL
60319115	VP-8-201910	Chloromethane	J	Result <RL
60319115	VP-14-201910	Benzene	J	Result <RL
60319115	VP-14-201910	Chloroform	J	Result <RL
60319115	VP-14-201910	trans-1,2-Dichloroethene	J	Result <RL
60319115	MW-194-201910	Acetone	J	Result <RL
60319115	MW-194-201910	cis-1,2-Dichloroethene	J	Result <RL

SDG	Field ID	Analyte	Qualifier	Reason for Qualification
60319115	TMW-26-201910	Carbon Disulfide	U	Method blank contamination; qualify non-detect at RL
60319115	TMW-26-201910	1,1-Dichloroethene	J	Result <RL
60319115	TMW-26-201910	Benzene	J	Result <RL
60319115	TMW-26-201910	4-Methyl-2-pentanone	J	Result <RL
60319115	TMW-26-201910	Toluene	J	Result <RL
60319115	MW-46R-201910	Chloroform	J	Result <RL
60319115	MW-46R-201910	Vinyl Chloride	J	Result <RL
60319115	MW-46R-201910	trans-1,2-Dichloroethene	J	Result <RL
60319115	MW-183R-201910	Chloroform	J	Result <RL
60319115	MW-99-201910	1,1-Dichloroethene	J	Result <RL
60319115	I W-77-201910	1,1-Dichloroethene	J	Result <RL
60319115	I W-77-201910	Chloroform	J	Result <RL
60319115	I W-77-201910	Acetone	J	Result <RL
60319115	I W-77-201910	Bromoform	J	Result <RL
60319115	I W-77-201910	trans-1,2-Dichloroethene	J	Result <RL
60319115	TMW-12-201910	trans-1,2-Dichloroethene	J	Result <RL
60319115	TMW-12-201910	Vinyl Chloride	J	Result <RL
60319115	TMW-14-201910	cis-1,2-Dichloroethene	J	Result <RL
60319115	MW -50R-201910	Trichloroethene	J	Result <RL
60319115	RW -69-201910	Vinyl Chloride	J	Result <RL
60319115	ITMW -9-201910	1,1,2-Trichloroethane	J	Result <RL
60319115	ITMW -9-201910	Chloroform	J	Result <RL
60319115	ITMW -9-201910	Methylene Chloride	J	Result <RL
60319115	MW -87-201910	trans-1,2-Dichloroethene	J	Result <RL
60319115	MW -87-201910	Vinyl Chloride	J	Result <RL
60319115	MW -58R-201910	trans-1,2-Dichloroethene	J	Result <RL
60319115	MW -58R-201910	Vinyl Chloride	J	Result <RL
60319115	MW -38-201910	Benzene	J	Result <RL
60319115	MW -38-201910	Toluene	J	Result <RL
60319115	DUP -01-201910	Vinyl Chloride	J	Result <RL
60319115	DUP -01-201910	trans-1,2-Dichloroethene	J	Result <RL
60319115	DUP -07-201910	1,1,2-Trichloroethane	J	Result <RL
60319115	DUP -07-201910	Chloroform	J	Result <RL
60319115	TMW -16-201910	Chlorobenzene	J	Result <RL
60319115	TMW -16-201910	4-Methyl-2-pentanone	J	Result <RL
60319115	TMW -16-201910	Toluene	J	Result <RL
60319115	TMW -16-201910	Carbon Disulfide	J	Result <RL
60319115	TMW -16-201910	trans-1,2-Dichloroethene	J	Result <RL
60319115	TMW -16-201910	Benzene	J	Result <RL
60319115	TMW -22R-201910	Benzene	J	Result <RL
60319115	TMW -22R-201910	1,1-Dichloroethene	J	Result <RL
60319115	TMW -22R-201910	Toluene	J	Result <RL
60319241002	TMW-32-201910	Nitrate/Nitrite	J	Result <RL
60319241	TMW-34-201910	Organic Carbon (total)	J	Result <RL
60319241	TMW-32-201910	Organic Carbon (dissolved)	J+	Method blank contamination
60319241	IW-147-201910	Iron	J	Result <RL
60319241	MW-95-201910	Iron	J	Result <RL
60319241	TMW-34-201910	Carbon Disulfide	J	Result <RL
60319241	TMW-34-201910	1,1-Dichloroethane	J	Result <RL
60319241	TMW-32-201910	Vinyl Chloride	J	Result <RL

SDG	Field ID	Analyte	Qualifier	Reason for Qualification
60319241	MW-186-201910	Carbon Disulfide	J	Result <RL
60319241	MW-186-201910	4-Methyl-2-pentanone	J	Result <RL
60319241	TMW-25-201910	Vinyl Chloride	J	Result <RL
60319241	TMW-25-201910	Carbon Disulfide	J	Result <RL
60319241	TMW-25-201910	Toluene	J	Result <RL
60319241	IW-147-201910	Ethyl Benzene	J	Result <RL
60319241	IW-147-201910	Dibromochloromethane	J	Result <RL
60319241	IW-147-201910	Vinyl Chloride	J	Result <RL
60319241	IW-147-201910	Carbon Disulfide	J	Result <RL
60319241	IW-147-201910	Benzene	J	Result <RL
60319241	MW-95-201910	1,1-Dichloroethane	J	Result <RL
60319241	MW-95-201910	Carbon Tetrachloride	J	Result <RL
60319241	MW-83-201910	Chloromethane	J	Result <RL
60319241	MW-83-201910	trans-1,2-Dichloroethene	J	Result <RL
60319241	MW-83-201910	cis-1,2-Dichloroethene	J	Result <RL
60319241	ITMW-18-201910	Chloroform	J	Result <RL
60319241	ITMW-18-201910	Tetrachloroethene	J	Result <RL
60319241	ITMW-18-201910	1,1-Dichloroethane	J	Result <RL
60319241	ITMW-19-201910	Bromodichloromethane	J	Result <RL
60319241	ITMW-19-201910	Trichloroethene	J	Concentration exceeded the calibration range
60319241	ITMW-19-201910	1,1,2,2-Tetrachloroethane	J	Result <RL
60319241	ITMW-19-201910	trans-1,2-Dichloroethene	J	Result <RL
60319241	ITMW-19-201910	Dibromochloromethane	J	Result <RL
60319241	ITMW-19-201910	Tetrachloroethene	J	Result <RL
60319241	MW-93-201910	Toluene	J	Result <RL
60319241	MW-93-201910	1,1,2-Trichloroethane	J	Result <RL
60319241	MW-93-201910	Bromoform	J	Result <RL
60319241	MW-93-201910	1,1,1-Trichloroethane	J	Result <RL
60319241	MW-189-201910	1,1-Dichloroethane	J	Result <RL
60319241	MW-189-201910	Vinyl Chloride	J	Result <RL
60319241	MW-189-201910	Chloroform	J	Result <RL
60319241	MW-189-201910	1,1,1-Trichloroethane	J	Result <RL
60319241	MW-189-201910	Tetrachloroethene	J	Result <RL
60319241	MW-189-201910	1,2-Dichloroethane	J	Result <RL
60319241	TMW-36-201910	1,2-Dichloroethane	J	Result <RL
60319241	TMW-36-201910	1,1-Dichloroethane	J	Result <RL
60319241	TMW-36-201910	Vinyl Chloride	J	Result <RL
60319241	MW-185-201910	Vinyl Chloride	J	Result <RL
60319241	MW-185-201910	1,1-Dichloroethane	J	Result <RL
60319241	MW-185-201910	1,1-Dichloroethene	J	Result <RL
60319241	MW-27-201910	cis-1,2-Dichloroethene	J	Result <RL
60319241	ITMW-11-201910	cis-1,2-Dichloroethene	J	Result <RL
60319241	ITMW-12R-201910	Toluene	J	Result <RL
60319241	ITMW-12R-201910	1,1,2-Trichloroethane	J	Result <RL
60319241	ITMW-12R-201910	Benzene	J	Result <RL
60319241	ITMW-12R-201910	Carbon Disulfide	J	Result <RL
60319241	MW-91-201910	Vinyl Chloride	J	Result <RL
60319241	MW-91-201910	trans-1,2-Dichloroethene	J	Result <RL
60319241	ITMW-21-201910	cis-1,2-Dichloroethene	J	Result <RL
60319241	MW-85R-201910	Ethyl Benzene	J	Result <RL
60319241	MW-85R-201910	1,2-Dichloroethane	J	Result <RL
60319241	MW-85R-201910	Bromodichloromethane	J	Result <RL

SDG	Field ID	Analyte	Qualifier	Reason for Qualification
60319241	MW-85R-201910	Chloromethane	J	Result <RL
60319241	IW-134-201910	Dibromochloromethane	J	Result <RL
60319241	IW-134-201910	Tetrachloroethene	J	Result <RL
60319241	IW-134-201910	Chloroform	J	Result <RL
60319241	MW-37-201910	Ethyl Benzene	J	Result <RL
60319241	MW-37-201910	1,1,2-Trichloroethane	J	Result <RL
60319241	MW-37-201910	Bromoform	J	Result <RL
60319241	MW-37-201910	Benzene	J	Result <RL
60319241	MW-37-201910	Chloromethane	J	Result <RL
60319241	ITMW-10-201910	Tetrachloroethene	J	Result <RL
60319241	ITMW-10-201910	1,1-Dichloroethane	J	Result <RL
60319241	ITMW-10-201910	Vinyl Chloride	J	Result <RL
60319241	ITMW-10-201910	Toluene	J	Result <RL
60319241	ITMW-10-201910	1,1-Dichloroethene	J	Result <RL
60319241	ITMW-5-201910	Chloroform	J	Result <RL
60319241	ITMW-5-201910	trans-1,2-Dichloroethene	J	Result <RL
60319241	ITMW-5-201910	1,1,2-Trichloroethane	J	Result <RL
60319241	IW-132-201910	cis-1,2-Dichloroethene	J	Result <RL
60319241	IW-132-201910	1,1-Dichloroethene	J	Result <RL
60319241	DUP-08-201910	Chloroform	J	Result <RL
60319241	DUP-08-201910	Vinyl Chloride	J	Result <RL
60319241	DUP-08-201910	1,1-Dichloroethane	J	Result <RL
60319241	DUP-08-201910	1,1-Dichloroethene	J	Result <RL
60319241	DUP-09-201910	Chloromethane	J	Result <RL
60319241	DUP-09-201910	1,2-Dichloroethane	J	Result <RL
60319241	DUP-09-201910	Ethyl Benzene	J	Result <RL
60319241	DUP-09-201910	Bromodichloromethane	J	Result <RL
60319241	DUP-10-201910	1,1,1-Trichloroethane	J	Result <RL
60319241	DUP-10-201910	cis-1,2-Dichloroethene	J	Result <RL
60319241	MW-179-201910	cis-1,2-Dichloroethene	J	Result <RL
60322105	IW-73-201910	Hydrogen	J	Hold time exceeded
60322105	IW-73-201910	Chloroform	J	Result <RL
60322105	IW-73-201910	1,1,-Dichloroethene	J	Result <RL
60322105	IW-73-201910	Vinyl chloride	J	Result <RL
60322105	IW-73-201910	Organic Carbon (total)	J	Result <RL

Data Validation Qualifier Codes:
U = Non-detect. The compound was analysed for, but not detected.
J = Estimated. The associated numerical value is an estimated quantity. The analyte was detected but the reported value may not be accurate or precise.
J+ = Estimated with a high bias. The associated numerical value is an estimated quantity. The analyte was detected but the reported value may not be accurate or precise.
J- = Estimated with a low bias. The associated numerical value is an estimated quantity. The analyte was detected but the reported value may not be accurate or precise.
UJ = Estimated Non-detect. The analyte was not detected above the method detection limit. However, it is an estimated quantity due to poor accuracy or precision. This qualification is also used to flag possible false negative results in the case where low bias in the analytical system is indicated by low calibration response, surrogate or another spike recovery.
R = Rejected. The sample results are unusable due to the quality of the data generated.

Attachment E
TCE Mass Estimate Calculations

TABLE 1
THICKNESS OF SATURATED SOILS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Ground Elevation	Top of Saturated Soils	Bottom of Saturated Soils	Saturated Soil Interval
North Plume				
IW-72	472.2	450.2	446.4	3.8
IW-73	472.1	NA[2]	NA[2]	NA[2]
IW-74	472.3	454.3	446.3	8.0
IW-75	472.8	NA[2]	NA[2]	NA[2]
IW-76	473.2	NA[2]	NA[2]	NA[2]
IW-77	473.8	454.8	445.8	9.0
IW-78	474.2	NA[2]	NA[2]	NA[2]
IW-79	474.1	NA[2]	NA[2]	NA[2]
IW-80	473.7	454.7	446.7	8.0
MW-23	475.8	453.8	447.8	6.0
MW-24	476.6	453.6	447.1	6.5
MW-27	475.7	451.7	447.4	4.3
MW-28	470.6	447.1	445.9	1.2
MW-31	476.1	448.1	447.1	1.0
MW-32	475.7	NA[2]	NA[2]	NA[2]
MW-33	474.9	NA[2]	NA[2]	NA[2]
MW-35R	474.0	NA[2]	NA[2]	NA[2]
MW-36	473.4	NA[2]	NA[2]	NA[2]
MW-39	475.6	450.1	447.6	2.5
MW-40	473.4	450.1	447.1	3.0
MW-41	472.3	453.3	445.8	7.5
MW-42B	471.8	449.8	446.3	3.5
MW-43	471.0	451.0	446.3	4.7
MW-46R	466.5	450.5	445.8	4.7
MW-50	463.2	451.2	445.6	5.6
MW-55	465.5	447.5	446.8	0.7
MW-56	463.4	445.4	444.9	0.5
MW-57	463.1	447.1	446.5	0.6
MW-58	462.9	446.3	445.9	0.4
MW-60	461.0	447.2	445.6	1.6 [3]
MW-61	459.8	445.5	444.7	0.8 [3]
MW-62	464.5	446.0	444.2	1.8
MW-63	464.0	444.7	444.5	0.2 [3]
MW-65	474.1	453.6	445.7	7.9
MW-66	462.7	450.7	446.5	4.2 [3]
MW-67	459.4	448.4	445.2	3.2 [3]
MW-68	470.0	448.0	446.5	1.5
MW-70	471.7	NA[2]	NA[2]	NA[2]
MW-71	471.5	NA[2]	NA[2]	NA[2]
RW-69	471.5	449.5	445.5	4.0
			Average Thickness (feet)	**3.7**

RAMBOLL

TABLE 1
THICKNESS OF SATURATED SOILS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Ground Elevation	Top of Saturated Soils	Bottom of Saturated Soils	Saturated Soil Interval
South Plume				
ITMW-1	474.6	450.6	444.1	6.5
ITMW-10	478.6	451.6	446.1	5.5
ITMW-11	474.0	457.5	444.5	13.0
ITMW-12	474.7	456.7	444.7	12.0
ITMW-13	475.4	450.4	446.4	4.0
ITMW-14	475.7	455.7	445.7	10.0
ITMW-15	474.8	454.0	444.8	9.2
ITMW-16	476.5	458.5	445.3	13.2
ITMW-17	476.1	454.1	447.1	7.0
ITMW-18	473.9	457.9	444.9	13.0
ITMW-19	474.3	457.8	445.3	12.5
ITMW-2	475.1	457.1	445.6	11.5
ITMW-20	475.7	453.2	447.4	5.8
ITMW-21	474.4	449.4	446.4	3.0
ITMW-3	472.8	451.6	444.6	7.0
ITMW-4	477.6	458.1	447.1	11.0
ITMW-5	476.6	452.1	446.1	6.0
ITMW-6	481.1	455.4	445.6	9.8
ITMW-7	479.7	NA[2]	NA[2]	NA[2]
ITMW-9	479.5	460.2	446.3	13.9
MW-22	473.9	450.9	449.9	1.0
MW-25	474.7	446.7	445.0	1.8
MW-26	476.1	451.1	446.9	4.2
MW-29	475.1	452.1	447.1	5.0
MW-30	479.2	446.7	443.7	3.0
MW-37	474.0	457.0	445.5	11.5
MW-38	474.9	NA[2]	NA[2]	NA[2]
MW-92	473.9	451.9	444.9	7.0
MW-93	478.0	456.0	443.5	12.5
MW-94	478.0	455.0	445.0	10.0
MW-95	478.0	452.0	445.0	7.0
MW-172	473.4	459.4	445.8	13.6
			Average Thickness (feet)	**8.3**

RAMBOLL

TABLE 1
THICKNESS OF SATURATED SOILS
Whirlpool Facility - Fort Smith, Arkansas

Well ID	Ground Elevation	Top of Saturated Soils	Bottom of Saturated Soils	Saturated Soil Interval
NE Corner Plume				
MW-87	471.0	451.0	447.8	3.2
MW-88	469.1	453.6	449.1	4.5
MW-89	467.1	451.6	449.5	2.1
MW-90	467.0	452.0	447.0	5.0
MW-91	469.2	451.7	449.2	2.5
MW-96	458.3	449.8	444.0	5.8
MW-97	459.9	451.9	445.9	6.0
MW-98	462.0	451.0	444.4	6.6
MW-99	467.1	449.3	445.1	4.2
			Average Thickness (feet)	**4.4**

Notes:

1. Saturated thickness calculated from soil description in boring log.
2. NA - Boring log not available
3. No saturated soil observation recorded in boring log during drilling. Interval inferred based on soil description.

TABLE 2
ESTIMATED QUANTITY OF TCE IN GROUNDWATER
Whirlpool Facility - Fort Smith, Arkansas

GROUNDWATER	Volume of Water						TCE Concentration		Mass of TCE		Volume of TCE	
Date	Plume Area (Square Feet)	Saturated Thickness (Feet)	Total Porosity[2]	Plume Area (Cubic Feet)	Gallons	Liters	Estimated Avg. Min. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Estimated Avg. Max. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Min. Kg.	Max. Kg.	Min. Vol. (Gallons)	Max. Vol. (Gallons)
North Plume												
March 2014 - 5 to 100 µg/L	*246,800*	3.7[1]	0.4	366,251	2,739,559	10,369,231	5	100	0.1	1.0	0.0	0.2
March 2014 - 100 to 1,000 µg/L	*184,500*	3.7[1]	0.4	273,798	2,048,009	7,751,714	100	1,000	0.8	7.8	0.1	1.4
March 2014 - > 1,000 µg/L	*100*	3.7[1]	0.4	148	1,110	4,201	1,000	1,500	0.0	0.0	0.0	0.0
March 2014 Subtotal	431,400								0.8	8.8	0.2	1.6
May 2014 - 5 to 100 µg/L	*279,000*	3.7[1]	0.4	414,036	3,096,989	11,722,104	5	100	0.1	1.2	0.0	0.2
May 2014 - 100 to 1,000 µg/L	*185,110*	3.7[1]	0.4	274,703	2,054,780	7,777,343	100	1,000	0.8	7.8	0.1	1.4
May 2014 - > 1,000 µg/L	*100*	3.7[1]	0.4	148	1,110	4,201	1,000	1,500	0.0	0.0	0.0	0.0
May 2014 Subtotal	464,210								0.8	9.0	0.2	1.6
July 2014 - 5 to 100 µg/L	*294,300*	3.7[1]	0.4	436,741	3,266,824	12,364,930	5	100	0.1	1.2	0.0	0.2
July 2014 - 100 to 1,000 µg/L	*192,500*	3.7[1]	0.4	285,670	2,136,812	8,087,832	100	1,000	0.8	8.1	0.1	1.5
July 2014 - > 1,000 µg/L	*200*	3.7[1]	0.4	297	2,220	8,403	1,000	1,500	0.0	0.0	0.0	0.0
July 2014 Subtotal	487,000								0.9	9.3	0.2	1.7
October 2014 - 5 to 100 µg/L	*299,500*	3.7[1]	0.4	444,458	3,324,546	12,583,406	5	100	0.1	1.3	0.0	0.2
October 2014 - 100 to 1,000 µg/L	*199,900*	3.7[1]	0.4	296,652	2,218,954	8,398,741	100	1,000	0.8	8.4	0.2	1.5
October 2014 - > 1,000 µg/L	*400*	3.7[1]	0.4	594	4,440	16,806	1,000	1,500	0.0	0.0	0.0	0.0
October 2014 Subtotal	499,800								0.9	9.7	0.2	1.8
January 2015 - 5 to 100 µg/L	*296,000*	3.7[1]	0.4	439,264	3,285,695	12,436,355	5	100	0.1	1.2	0.0	0.2
January 2015 - 100 to 1,000 µg/L	*180,466*	3.7[1]	0.4	267,812	2,003,230	7,582,227	100	1,000	0.8	7.6	0.1	1.4
January 2015 - > 1,000 µg/L	*0*	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
January 2015 Subtotal	476,466								0.8	8.8	0.1	1.6
April 2015 - 5 to 100 µg/L	308,950	3.7[1]	0.4	458,482	3,429,444	12,980,445	5	100	0.1	1.3	0.0	0.2
April 2015 - 100 to 1,000 µg/L	177,037	3.7[1]	0.4	262,723	1,965,167	7,438,158	100	1,000	0.7	7.4	0.1	1.3
April 2015 - > 1,000 µg/L	0	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
April 2015 Subtotal	485,987								0.8	8.7	0.1	1.6

RAMBOLL

TABLE 2
ESTIMATED QUANTITY OF TCE IN GROUNDWATER
Whirlpool Facility - Fort Smith, Arkansas

GROUNDWATER	Volume of Water						TCE Concentration		Mass of TCE		Volume of TCE	
Date	Plume Area (Square Feet)	Saturated Thickness (Feet)	Total Porosity[2]	Plume Area (Cubic Feet)	Gallons	Liters	Estimated Avg. Min. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Estimated Avg. Max. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Min. Kg.	Max. Kg.	Min. Vol. (Gallons)	Max. Vol. (Gallons)
July 2015 - 5 to 100 µg/L	334,058	3.7[1]	0.4	495,742	3,708,151	14,035,350	5	100	0.1	1.4	0.0	0.3
July 2015 - 100 to 1,000 µg/L	165,146	3.7[1]	0.4	245,077	1,833,173	6,938,561	100	1,000	0.7	6.9	0.1	1.3
July 2015 - > 1,000 µg/L	0	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
July 2015 Subtotal	499,204								0.8	8.3	0.1	1.5
October 2015 - 5 to 100 µg/L	303,199	3.7[1]	0.4	449,947	3,365,606	12,738,818	5	100	0.1	1.3	0.0	0.2
October 2015 - 100 to 1,000 µg/L	152,180	3.7[1]	0.4	225,835	1,689,247	6,393,799	100	1,000	0.6	6.4	0.1	1.2
October 2015 - > 1,000 µg/L	0	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
October 2015 Subtotal	455,379								0.7	7.7	0.1	1.4
January 2016 - 5 to 100 µg/L	302,982	3.7[1]	0.4	449,625	3,363,194	12,729,690	5	100	0.1	1.3	0.0	0.2
January 2016 - 100 to 1,000 µg/L	159,991	3.7[1]	0.4	237,427	1,775,954	6,721,985	100	1,000	0.7	6.7	0.1	1.2
January 2016 - > 1,000 µg/L	0	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
January 2016 Subtotal	462,973								0.7	8.0	0.1	1.4
May 2016 - 5 to 100 µg/L	299,669	3.7[1]	0.4	444,709	3,326,422	12,590,506	5	100	0.1	1.3	0.0	0.2
May 2016 - 100 to 1,000 µg/L	163,732	3.7[1]	0.4	242,978	1,817,478	6,879,153	100	1,000	0.7	6.9	0.1	1.2
May 2016 - > 1,000 µg/L	0	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
May 2016 Subtotal	463,401								0.8	8.1	0.1	1.5
November 2016 - 5 to 100 µg/L	345,581	3.7[1]	0.4	512,842	3,836,060	14,519,486	5	100	0.1	1.5	0.0	0.3
November - 100 to 1,000 µg/L	151,493	3.7[1]	0.4	224,816	1,681,621	6,364,935	100	1,000	0.6	6.4	0.1	1.2
November 2016 - > 1,000 µg/L	0	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
November 2016 Subtotal	497,074								0.7	7.8	0.1	1.4
April 2017 - 5 to 100 µg/L	295,575	3.7[1]	0.4	438,634	3,280,980	12,418,509	5	100	0.1	1.2	0.0	0.2
April 2017 - 100 to 1,000 µg/L	206,761	3.7[1]	0.4	306,833	2,295,109	8,686,988	100	1,000	0.9	8.7	0.2	1.6
April 2017 - > 1,000 µg/L	0	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
April 2017 Subtotal	502,336								0.9	9.9	0.2	1.8

RAMBOLL

TABLE 2
ESTIMATED QUANTITY OF TCE IN GROUNDWATER
Whirlpool Facility - Fort Smith, Arkansas

GROUNDWATER	Volume of Water						TCE Concentration		Mass of TCE		Volume of TCE	
Date	Plume Area (Square Feet)	Saturated Thickness (Feet)	Total Porosity[2]	Plume Area (Cubic Feet)	Gallons	Liters	Estimated Avg. Min. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Estimated Avg. Max. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Min. Kg.	Max. Kg.	Min. Vol. (Gallons)	Max. Vol. (Gallons)
October 2017 - 5 to 100 µg/L	254,136	3.7[1]	0.4	377,138	2,820,990	10,677,446	5	100	0.1	1.1	0.0	0.2
October 2017 - 100 to 1,000 µg/L	226,195	3.7[1]	0.4	335,673	2,510,837	9,503,520	100	1,000	1.0	9.5	0.2	1.7
October 2017 - > 1,000 µg/L	0	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
October 2017 Subtotal	480,331								1.0	10.6	0.2	1.9
April 2018 - 5 to 100 µg/L	222,380	3.7[1]	0.4	330,012	2,468,488	9,343,228	5	100	0.0	0.9	0.0	0.2
April 2018 - 100 to 1,000 µg/L	249,941	3.7[1]	0.4	370,913	2,774,429	10,501,215	100	1,000	1.1	10.5	0.2	1.9
April 2018 - > 1,000 µg/L	0	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
April 2018 Subtotal	472,321								1.1	11.4	0.2	2.1
November 2018 - 5 to 100 µg/L	245,812	3.7[1]	0.4	364,785	2,728,591	10,327,718	5	100	0.1	1.0	0.0	0.2
November 2018 - 100 to 1,000 µg/L	232,887	3.7[1]	0.4	345,604	2,585,118	9,784,672	100	1,000	1.0	9.8	0.2	1.8
November 2018 - > 1,000 µg/L	0	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
November 2018 Subtotal	478,698.78								1.03	10.82	0.19	1.96
April 2019 - 5 to 100 µg/L	248,034	3.7[1]	0.4	368,083	2,753,261	10,421,092	5	100	0.1	1.0	0.0	0.2
April 2019 - 100 to 1,000 µg/L	250,584	3.7[1]	0.4	371,867	2,781,565	10,528,222	100	1,000	1.1	10.5	0.2	1.9
April 2019 - > 1,000 µg/L	0	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
April 2019 Subtotal	498,618.54								1.10	11.57	0.20	2.09
October 2019 - 5 to 100 ug/l	271,997	3.7[1]	0.4	403,644	3,019,258	11,427,893	5	100	0.1	1.1	0.0	0.2
October 2019 - 100 to 1,000 ug/l	252,556	3.7[1]	0.4	374,793	2,803,452	10,611,067	100	1,000	1.1	10.6	0.2	1.9
October 2019 - > 1,000 ug/l	0	3.7[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
October 2019 Subtotal	524,553.40								1.12	11.75	0.20	2.13

TABLE 2
ESTIMATED QUANTITY OF TCE IN GROUNDWATER
Whirlpool Facility - Fort Smith, Arkansas

GROUNDWATER	Volume of Water						TCE Concentration		Mass of TCE		Volume of TCE	
Date	Plume Area (Square Feet)	Saturated Thickness (Feet)	Total Porosity[2]	Plume Area (Cubic Feet)	Gallons	Liters	Estimated Avg. Min. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Estimated Avg. Max. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Min. Kg.	Max. Kg.	Min. Vol. (Gallons)	Max. Vol. (Gallons)
South Plume												
October 2014 - 5 to 100 µg/L	*519,800*	8.3[1]	0.4	1,727,815	12,924,058	48,917,558	5	100	0.2	4.9	0.0	0.9
October 2014 - 100 to 1,000 µg/L	*261,500*	8.3[1]	0.4	869,226	6,501,810	24,609,353	100	1,000	2.5	24.6	0.4	4.5
October 2014 - > 1,000 µg/L	*119,000*	8.3[1]	0.4	395,556	2,958,759	11,198,902	1,000	1,500	11.2	16.8	2.0	3.0
October 2014 Subtotal	900,300								13.9	46.3	2.5	8.4
January 2015 - 5 to 100 µg/L	*442,344*	8.3[1]	0.4	1,470,351	10,998,229	41,628,296	5	100	0.2	4.2	0.0	0.8
January 2015 - 100 to 1,000 µg/L	*324,537*	8.3[1]	0.4	1,078,761	8,069,132	30,541,665	100	1,000	3.1	30.5	0.6	5.5
January 2015 - 1,000 to 10,000 µg/L	*86,311*	8.3[1]	0.4	286,898	2,145,995	8,122,592	1,000	1,500	8.1	12.2	1.5	2.2
January 2015 - > 10,000 µg/L	*16,637*	8.3[1]	0.4	55,301	413,654	1,565,682	10,000	40,000	15.7	62.6	2.8	11.3
January 2015 Subtotal	869,829								27.0	109.5	4.9	19.8
April 2015 - 5 to 100 µg/L	446,025	8.3[1]	0.4	1,482,587	11,089,752	41,974,709	5	100	0.2	4.2	0.0	0.8
April 2015 - 100 to 1,000 µg/L	320,887	8.3[1]	0.4	1,066,628	7,978,380	30,198,170	100	1,000	3.0	30.2	0.5	5.5
April 2015 - 1,000 to 10,000 µg/L	82,635	8.3[1]	0.4	274,679	2,054,597	7,776,650	1,000	1,500	7.8	11.7	1.4	2.1
April 2015 - > 10,000 µg/L	19,906	8.3[1]	0.4	66,168	494,933	1,873,322	10,000	40,000	18.7	74.9	3.4	13.6
April 2015 Subtotal	869,453								29.7	121.0	5.4	21.9
July 2015 - 5 to 100 µg/L	366,826	8.3[1]	0.4	1,219,330	9,120,586	34,521,416	5	100	0.2	3.5	0.0	0.6
July 2015 - 100 to 1,000 µg/L	439,964	8.3[1]	0.4	1,462,440	10,939,054	41,404,318	100	1,000	4.1	41.4	0.7	7.5
July 2015 - 1,000 to 10,000 µg/L	158,420	8.3[1]	0.4	526,588	3,938,879	14,908,656	1,000	1,500	14.9	22.4	2.7	4.0
July 2015 - > 10,000 µg/L	17,739	8.3[1]	0.4	58,964	441,054	1,669,389	10,000	40,000	16.7	66.8	3.0	12.1
July 2015 Subtotal	982,949								35.9	134.0	6.5	24.3
October 2015 - 5 to 100 µg/L	452,019	8.3[1]	0.4	1,502,511	11,238,783	42,538,795	5	100	0.2	4.3	0.0	0.8
October 2015 - 100 to 1,000 µg/L	410,850	8.3[1]	0.4	1,365,665	10,215,177	38,664,446	100	1,000	3.9	38.7	0.7	7.0
October 2015 - 1,000 to 10,000 µg/L	178,334	8.3[1]	0.4	592,782	4,434,011	16,782,732	1,000	1,500	16.8	25.2	3.0	4.6
October 2015 - > 10,000 µg/L	26,442	8.3[1]	0.4	87,893	657,441	2,488,415	10,000	40,000	24.9	99.5	4.5	18.0
October 2015 Subtotal	1,067,645								45.7	167.6	8.3	30.4
January 2016 - 5 to 100 µg/L	471,252	8.3[1]	0.4	1,566,442	11,716,984	44,348,784	5	100	0.2	4.4	0.0	0.8
January 2016 - 100 to 1,000 µg/L	432,480	8.3[1]	0.4	1,437,562	10,752,966	40,699,976	100	1,000	4.1	40.7	0.7	7.4
January 2016 - 1,000 to 10,000 µg/L	185,422	8.3[1]	0.4	616,344	4,610,254	17,449,810	1,000	1,500	17.4	26.2	3.2	4.7
January 2016 - > 10,000 µg/L	26,570	8.3[1]	0.4	88,320	660,636	2,500,506	10,000	40,000	25.0	100.0	4.5	18.1
January 2016 Subtotal	1,115,725								46.7	171.3	8.5	31.0
May 2016 - 5 to 100 µg/L	500,800	8.3[1]	0.4	1,664,659	12,451,651	47,129,498	5	100	0.2	4.7	0.0	0.9
May 2016 - 100 to 1,000 µg/L	411,507	8.3[1]	0.4	1,367,849	10,231,513	38,726,275	100	1,000	3.9	38.7	0.7	7.0
May 2016 - 1,000 to 10,000 µg/L	182,314	8.3[1]	0.4	606,012	4,532,968	17,157,283	1,000	1,500	17.2	25.7	3.1	4.7
May 2016 - > 10,000 µg/L	26,570	8.3[1]	0.4	88,320	660,636	2,500,506	10,000	40,000	25.0	100.0	4.5	18.1
May 2016 Subtotal	1,121,191								46.3	169.2	8.4	30.6

RAMBOLL

TABLE 2
ESTIMATED QUANTITY OF TCE IN GROUNDWATER
Whirlpool Facility - Fort Smith, Arkansas

GROUNDWATER	Volume of Water						TCE Concentration		Mass of TCE		Volume of TCE	
Date	Plume Area (Square Feet)	Saturated Thickness (Feet)	Total Porosity[2]	Plume Area (Cubic Feet)	Gallons	Liters	Estimated Avg. Min. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Estimated Avg. Max. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Min. Kg.	Max. Kg.	Min. Vol. (Gallons)	Max. Vol. (Gallons)
November 2016 - 5 to 100 µg/L	610,474	8.3[1]	0.4	2,029,216	15,178,533	57,450,746	5	100	0.3	5.7	0.1	1.0
November 2016 - 100 to 1,000 µg/L	448,303	8.3[1]	0.4	1,490,159	11,146,391	42,189,088	100	1,000	4.2	42.2	0.8	7.6
November 2016 - 1,000 to 10,000 µg/L	183,846	8.3[1]	0.4	611,104	4,571,059	17,301,457	1,000	1,500	17.3	26.0	3.1	4.7
November 2016 - > 10,000 µg/L	27,485	8.3[1]	0.4	91,360	683,374	2,586,570	10,000	40,000	25.9	103.5	4.7	18.7
November 2016 Subtotal	1,270,108								47.7	177.3	8.6	32.1
April 2017 - 5 to 100 µg/L	491,932	8.3[1]	0.4	1,635,183	12,231,169	46,294,976	5	100	0.2	4.6	0.0	0.8
April 2017 - 100 to 1,000 µg/L	552,838	8.3[1]	0.4	1,837,632	13,745,491	52,026,682	100	1,000	5.2	52.0	0.9	9.4
April 2017 - 1,000 to 10,000 µg/L	179,440	8.3[1]	0.4	596,460	4,461,522	16,886,860	1,000	1,500	16.9	25.3	3.1	4.6
April 2017 - > 10,000 µg/L	29,275	8.3[1]	0.4	97,309	727,869	2,754,983	10,000	40,000	27.5	110.2	5.0	20.0
April 2017 Subtotal	1,253,485								49.9	192.2	9.0	34.8
October 2017 - 5 to 100 µg/L	446,517	8.3[1]	0.4	1,484,222	11,101,980	42,020,996	5	100	0.2	4.2	0.0	0.8
October 2017 - 100 to 1,000 µg/L	494,647	8.3[1]	0.4	1,644,208	12,298,677	46,550,493	100	1,000	4.7	46.6	0.8	8.4
October 2017 - 1,000 to 10,000 µg/L	249,441	8.3[1]	0.4	829,144	6,201,994	23,474,546	1,000	1,500	23.5	35.2	4.3	6.4
October 2017 - > 10,000 µg/L	29,275	8.3[1]	0.4	97,309	727,869	2,754,983	10,000	40,000	27.5	110.2	5.0	20.0
October 2017 Subtotal	1,219,880								55.9	196.2	10.1	35.5
April 2018 - 5 to 100 µg/L	484,216	8.3[1]	0.4	1,609,533	12,039,309	45,568,785	5	100	0.2	4.6	0.0	0.8
April 2018 - 100 to 1,000 µg/L	486,883	8.3[1]	0.4	1,618,398	12,105,614	45,819,749	100	1,000	4.6	45.8	0.8	8.3
April 2018 - 1,000 to 10,000 µg/L	250,959	8.3[1]	0.4	834,187	6,239,719	23,617,338	1,000	1,500	23.6	35.4	4.3	6.4
April 2018 - > 10,000 µg/L	29,275	8.3[1]	0.4	97,309	727,869	2,754,983	10,000	40,000	27.5	110.2	5.0	20.0
April 2018 Subtotal	1,251,332								56.0	196.0	10.1	35.5
November 2018 - 5 to 100 µg/L	560,886	8.3[1]	0.4	1,864,385	13,945,600	52,784,097	5	100	0.3	5.3	0.0	1.0
November 2018 - 100 to 1,000 µg/L	323,024	8.3[1]	0.4	1,073,731	8,031,510	30,399,263	100	1,000	3.0	30.4	0.6	5.5
November 2018 - 1,000 to 10,000 µg/L	313,571	8.3[1]	0.4	1,042,309	7,796,470	29,509,637	1,000	1,500	29.5	44.3	5.3	8.0
November 2018 - > 10,000 µg/L	29,275	8.3[1]	0.4	97,309	727,869	2,754,983	10,000	40,000	27.5	110.2	5.0	20.0
November 2018 Subtotal	1,226,755								60.4	190.1	10.9	34.4
April 2019 - 5 to 100 µg/L	583,609	8.3[1]	0.4	1,939,915	14,510,564	54,922,483	5	100	0.3	5.5	0.0	1.0
April 2019 - 100 to 1,000 µg/L	332,400	8.3[1]	0.4	1,104,899	8,264,646	31,281,686	100	1,000	3.1	31.3	0.6	5.7
April 2019 - 1,000 to 10,000 µg/L	313,979	8.3[1]	0.4	1,043,666	7,806,625	29,548,076	1,000	1,500	29.5	44.3	5.3	8.0
April 2019 - > 10,000 µg/L	29,275	8.3[1]	0.4	97,309	727,869	2,754,983	10,000	40,000	27.5	110.2	5.0	20.0
April 2019 Subtotal	1,259,263								60.5	191.3	11.0	34.6
October 2019 - 5 to 100 ug/l	549,687	8.3[1]	0.4	1,827,158	13,667,144	51,730,140	5	100	0.3	5.2	0.0	0.9
October 2019 - 100 to 1,000 ug/l	375,589	8.3[1]	0.4	1,248,457	9,338,461	35,346,075	100	1,000	3.5	35.3	0.6	6.4
October 2019 - 1,000 to 10,000 ug/l	312,943	8.3[1]	0.4	1,040,224	7,780,876	29,450,615	1,000	1,500	29.5	44.2	5.3	8.0
October 2019 - > 10,000 ug/l	27,365	8.3[1]	0.4	90,960	680,381	2,575,242	10,000	40,000	25.8	103.0	4.7	18.7
October 2019 Subtotal	1,265,584								59.0	187.7	10.7	34.0

RAMBOLL

TABLE 2
ESTIMATED QUANTITY OF TCE IN GROUNDWATER
Whirlpool Facility - Fort Smith, Arkansas

GROUNDWATER	Volume of Water						TCE Concentration		Mass of TCE		Volume of TCE	
Date	Plume Area (Square Feet)	Saturated Thickness (Feet)	Total Porosity[2]	Plume Area (Cubic Feet)	Gallons	Liters	Estimated Avg. Min. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Estimated Avg. Max. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Min. Kg.	Max. Kg.	Min. Vol. (Gallons)	Max. Vol. (Gallons)
Northeast Plume												
October 2014 - 5 to 100 µg/L	*187,600*	4.4[1]	0.4	330,926	2,475,329	9,369,122	5	100	0.0	0.9	0.0	0.2
October 2014 - 100 to 1,000 µg/L	*69,200*	4.4[1]	0.4	122,069	913,075	3,455,987	100	1,000	0.3	3.5	0.1	0.6
October 2014 - > 1,000 µg/L	*0*	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
October 2014 Subtotal	256,800								0.4	4.4	0.1	0.8
January 2015 - 5 to 100 µg/L	*166,439*	4.4[1]	0.4	293,598	2,196,116	8,312,299	5	100	0.0	0.8	0.0	0.2
January 2015 - 100 to 1,000 µg/L	*74,000*	4.4[1]	0.4	130,536	976,409	3,695,709	100	1,000	0.4	3.7	0.1	0.7
January 2015 - > 1,000 µg/L	*0*	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
January 2015 Subtotal	240,439								0.4	4.5	0.1	0.8
April 2015 - 5 to 100 µg/L	183,000	4.4[1]	0.4	322,812	2,414,634	9,139,389	5	100	0.0	0.9	0.0	0.2
April 2015 - 100 to 1,000 µg/L	70,500	4.4[1]	0.4	124,362	930,228	3,520,912	100	1,000	0.4	3.5	0.1	0.6
April 2015 - > 1,000 µg/L	0	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
April 2015 Subtotal	253,500								0.4	4.4	0.1	0.8
July 2015 - 5 to 100 µg/L	176,731	4.4[1]	0.4	311,753	2,331,916	8,826,302	5	100	0.0	0.9	0.0	0.2
July 2015 - 100 to 1,000 µg/L	76,915	4.4[1]	0.4	135,678	1,014,872	3,841,290	100	1,000	0.4	3.8	0.1	0.7
July 2015 - > 1,000 µg/L	0	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
July 2015 Subtotal	253,646								0.4	4.7	0.1	0.9
October 2015 - 5 to 100 µg/L	160,153	4.4[1]	0.4	282,510	2,113,174	7,998,364	5	100	0.0	0.8	0.0	0.1
October 2015 - 100 to 1,000 µg/L	77,178	4.4[1]	0.4	136,142	1,018,342	3,854,425	100	1,000	0.4	3.9	0.1	0.7
October 2015 - > 1,000 µg/L	0	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
October 2015 Subtotal	237,331								0.4	4.7	0.1	0.8
January 2016 - 5 to 100 µg/L	160,000	4.4[1]	0.4	282,240	2,111,156	7,990,726	5	100	0.0	0.8	0.0	0.1
January 2016 - 100 to 1,000 µg/L	80,142	4.4[1]	0.4	141,370	1,057,448	4,002,441	100	1,000	0.4	4.0	0.1	0.7
January 2016 - > 1,000 µg/L	0	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
January 2016 Subtotal	240,142								0.4	4.8	0.1	0.9
May 2016 - 5 to 100 µg/L	160,000	4.4[1]	0.4	282,240	2,111,156	7,990,726	5	100	0.0	0.8	0.0	0.1
May 2016 - 100 to 1,000 µg/L	80,142	4.4[1]	0.4	141,370	1,057,448	4,002,441	100	1,000	0.4	4.0	0.1	0.7
May 2016 - > 1,000 µg/L	0	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
May 2016 Subtotal	240,142								0.4	4.8	0.1	0.9
November 2016 - 5 to 100 µg/L	189,715	4.4[1]	0.4	334,657	2,503,236	9,474,749	5	100	0.0	0.9	0.0	0.2
November 2016 - 100 to 1,000 µg/L	82,223	4.4[1]	0.4	145,041	1,084,909	4,106,382	100	1,000	0.4	4.1	0.1	0.7
November 2016 - > 1,000 µg/L	0	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
November 2016 Subtotal	271,938								0.5	5.1	0.1	0.9

RAMBOLL

TABLE 2
ESTIMATED QUANTITY OF TCE IN GROUNDWATER
Whirlpool Facility - Fort Smith, Arkansas

GROUNDWATER	Volume of Water						TCE Concentration		Mass of TCE		Volume of TCE	
Date	Plume Area (Square Feet)	Saturated Thickness (Feet)	Total Porosity[2]	Plume Area (Cubic Feet)	Gallons	Liters	Estimated Avg. Min. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Estimated Avg. Max. Concentration Assumed to be Present Throughout the Respective Section of Plume (µg/L)	Min. Kg.	Max. Kg.	Min. Vol. (Gallons)	Max. Vol. (Gallons)
April 2017 - 5 to 100 µg/L	188,939	4.4[1]	0.4	333,289	2,493,003	9,436,015	5	100	0.0	0.9	0.0	0.2
April 2017 - 100 to 1,000 µg/L	85,399	4.4[1]	0.4	150,644	1,126,819	4,265,009	100	1,000	0.4	4.3	0.1	0.8
April 2017 - > 1,000 µg/L	0	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
April 2017 Subtotal	274,339								0.5	5.2	0.1	0.9
October 2017 - 5 to 100 µg/L	185,157	4.4[1]	0.4	326,617	2,443,099	9,247,129	5	100	0.0	0.9	0.0	0.2
October 2017 - 100 to 1,000 µg/L	85,517	4.4[1]	0.4	150,853	1,128,378	4,270,911	100	1,000	0.4	4.3	0.1	0.8
October 2017 - > 1,000 µg/L	0	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
October 2017 Subtotal	270,675								0.5	5.2	0.1	0.9
April 2018 - 5 to 100 µg/L	161,368	4.4[1]	0.4	284,653	2,129,204	8,059,037	5	100	0.0	0.8	0.0	0.1
April 2018 - 100 to 1,000 µg/L	85,517	4.4[1]	0.4	150,853	1,128,378	4,270,911	100	1,000	0.4	4.3	0.1	0.8
April 2018 - > 1,000 µg/L	0	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
April 2018 Subtotal	246,885								0.5	5.1	0.1	0.9
November 2018 - 5 to 100 µg/L	174,355	4.4[1]	0.4	307,562	2,300,565	8,707,637	5	100	0.0	0.9	0.0	0.2
November 2018 - 100 to 1,000 µg/L	85,517	4.4[1]	0.4	150,853	1,128,378	4,270,911	100	1,000	0.4	4.3	0.1	0.8
November 2018 - > 1,000 µg/L	0	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
November 2018 Subtotal	259,872								0.5	5.1	0.1	0.9
April 2019 - 5 to 100 µg/L	174,355	4.4[1]	0.4	307,562	2,300,565	8,707,637	5	100	0.0	0.9	0.0	0.2
April 2019 - 100 to 1,000 µg/L	85,517	4.4[1]	0.4	150,853	1,128,378	4,270,911	100	1,000	0.4	4.3	0.1	0.8
April 2019 - > 1,000 µg/L	0	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
April 2019 Subtotal	259,872								0.5	5.1	0.1	0.9
October 2019 - 5 to 100 ug/l	176,154	4.4[1]	0.4	310,735	2,324,300	8,797,476	5	100	0.0	0.9	0.0	0.2
October 2019 - 100 to 1,000 ug/l	85,517	4.4[1]	0.4	150,853	1,128,378	4,270,911	100	1,000	0.4	4.3	0.1	0.8
October 2019 - > 1,000 ug/l	0	4.4[1]	0.4	0	0	0	1,000	1,500	0.0	0.0	0.0	0.0
October 2019 Subtotal	261,671								0.5	5.2	0.1	0.9

Notes:
1: Saturated thickness estimated from 4th Quarter 2014 RADD sampled wells and new 4th Quarter well completions (see Table 1).
2: Total porosity estimated from Freeze and Cherry (1979).
TCE: Trichloroethylene
µg/L: Micrograms per liter

RAMBOLL

Attachment F
Well and Hydropunch Construction Logs

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-09-Shallow	Date(s): **11/18/2019**
Location: **Fort Smith, Arkansas**	
Logged By: **N. Zurweller, RG**	Checked By: **M. Wilson**
Contractor: **Environmental Works, Inc.**	Purpose: **Soil Boring/Hydropunch**
Drilling Method: **Direct Push**	GS Elevation: **486.25 ft amsl** / TOC Elevation: **NM**
Sampling Method: **Continuous Sampler**	North: **367533.89** / East: **590936.99**
Borehole Dia.: **2.25 inches**	Total Depth: **30.5 feet**
Project Number: **1690015592**	
Project Name: **Whirlpool Corporation**	
Remarks:	

Well Construction:

Blank Casing: Sch. 40 PVC 1 Inch 0 FT to 20.5 FT

Screen: Sch. 40 1 Inch 0.010 PVC 20.5 FT to 30.5 FT

Annular Fill: Nothing in Annulus

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	USCS Code	Material Description
485	0	3		0.5	MH	Fill, very dark brown, gravel and silt, loose, moist
				0.3		Clayey Silt, dark brown, with gray brown, trace fill, slightly plastic, stiff, dry
	5					Clayey Silt, orange brown, trace dark brown and orange, slightly plastic, stiff, dry
480		2.5		0.3	ML	Silt, gray brown, cohesive, slightly stiff, dry
					CL	Silty Clay, red brown and gray, plastic, stiff, dry
				0.0	MH	Clayey Silt, yellow brown and light gray, slightly plastic, stiff, dry
	10				CH	Clay, orange brown, with gray mottling, trace sand, coarse, fine, plastic, very stiff, dry
475		5		0.0		
				0.0	MH	Clayey Silt, orange brown, trace red, with sand, fine, trace coarse, slightly plastic, slightly stiff, dry
	15				CL	Silty Clay, orange brown, very stiff, plastic, dry
470		2.5		0.0		
				0.0		
	20					Silty Clay, red brown, trace gray mottling and black streaks, plastic, very stiff, dry
465		4		0.0		
				0.0		Silty Clay, red brown, trace gay mottling and black streaks, plastic, very stiff, moist, increasing silt with depth
	25			0.0		Silty Clay as above, trace sand, fine
460		4		0.0	SC	Clayey Sand, orange brown, trace gray, trace black, plastic, soft, moist
		0.5		0.0		Clayey Sand, yellow brown, trace gray, some silt, fine, cohesive, soft, wet
	30			0.0		
455						

Water Level

Well Construction

1" PVC Riser, Nothing in Annulus

1" PVC Screen, Nothing in Annulus

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 1/15/20

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-09-Deep	Date(s): **11/18/2019**
Location: **Fort Smith, Arkansas**	
Logged By: **N. Zurweller, RG**	Checked By: **M. Wilson**
Contractor: **Environmental Works, Inc.**	Purpose: **Soil Boring/Hydropunch**
Drilling Method: **Direct Push**	GS Elevation: **486.25 ft amsl** / TOC Elevation: **NM**
Sampling Method: **Continuous Sampler**	North: **367533.89** / East: **590936.99**
Well Construction:	Borehole Dia.: **2.25 inches** / Total Depth: **42.5 feet**
Blank Casing: 0.5 Inch Stainless Steel 0 FT to 36 FT	Project Number: **1690015592**
Screen: Stainless Steel 0.010 36 FT to 39 FT	Project Name: **Whirlpool Corporation**
Annular Fill: No Annulus	Remarks:

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
485		3		0.5		MH	Fill, very dark brown, gravel and silt, loose, moist		
				0.3			Clayey Silt, dark brown, with gray brown, trace fill, slightly plastic, stiff, dry		
	5					ML	Clayey Silt, orange brown, trace dark brown and orange, slightly plastic, stiff, dry		
480		2.5		0.3		CL	Silt, gray brown, cohesive, slightly stiff, dry		
				0.0			Silty Clay, red brown and gray, plastic, stiff, dry		
	10					MH	Clayey Silt, yellow brown and light gray, slightly plastic, stiff, dry		
475		5		0.0		CH	Clay, orange brown, with gray mottling, trace sand, coarse, fine, plastic, very stiff, dry		
				0.0					
	15					MH	Clayey Silt, orange brown, trace red, with sand, fine, trace coarse, slightly plastic, slightly stiff, dry		
470		2.5		0.0		CL	Silty Clay, orange brown, very stiff, plastic, dry		
				0.0					
	20						Silty Clay, red brown, trace gray mottling and black streaks, plastic, very stiff, dry		
465		4		0.0					
				0.0			Silty Clay, red brown, trace gay mottling and black streaks, plastic, very stiff, moist, increasing silt with depth		
	25			0.0			Silty Clay as above, trace sand, fine		
460		4		0.0		SC	Clayey Sand, orange brown, trace gray, trace black, plastic, soft, moist		
				0.0			Clayey Sand, yellow brown, trace gray, some silt, fine, cohesive, soft, wet		
	30	3.5		0.0		CL	Silty Clay, red brown, with gray, some sand, fine, plastic, slightly stiff, moist		
455				0.0					
		3.5		0.0		SM	Silty Sand, orange brown, with gray, trace clay, fine, slightly cohesive, moist		

Geoprobe SS Pipe, no annulus

Geoprobe SS Drop Screen, no annulus

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 1/15/20

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-09-Deep

Project Name: **Whirlpool Corporation**

Project Number: **1690015592**

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
450				0.0		GC	Silty Sand as above, wet		
		2		0.0		GC	Clayey Gravel, red brown, fine to coarse, subrounded, with sand, fine to coarse, slightly cohesive, moist		
				0.0			Sand and Gravel, red brown, with clay, sand, fine to coarse, gravel, fine to coarse, subrounded. slightly cohesive, moist		
	40			0.0		MH	Clayey Silt (Weathered Shale), yellow brown, trace gray and orange brown, slightly plastic, very stiff, slightly laminated, dry		
445		2.5		0.0			Shale, very dark gray, very stiff, laminated, dry		
	45								
440									
	50								
435									
	55								
430									
	60								
425									
	65								
420									
	70								
415									
	75								
410									
	80								
405									

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-10	Date(s): **11/18/2019**
Location: **Fort Smith, Arkansas**	
Logged By: **N. Zurweller, RG**	Checked By: **M. Wilson**
Contractor: **Environmental Works, Inc.**	Purpose: **Soil Boring/Hydropunch**
Drilling Method: **Direct Push**	GS Elevation: **486.99 ft amsl** / TOC Elevation: **NM**
Sampling Method: **Continuous Sampler**	North: **367530.90** / East: **590987.58**
Well Construction:	Borehole Dia.: **2.25 inches** / Total Depth: **42.5 feet**
Blank Casing: 0.5" Stainless Steel 0 FT to 28 FT and 37.5 FT to 41.5 FT	Project Number: **1690015592**
Screen: Stainless Steel 0.010 28 FT to 32 FT and 37.5 FT to 41.5 FT	Project Name: **Whirlpool Corporation**
Annular Fill: No Annulus	Remarks:

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
485	0	3		0.0		MH	Fill, gravel and silt, very dark brown, trace root hairs, loose, moist		
				0.0			Clayey Silt, brown and dark brown, slightly cohesive, stiff, dry		
	5			0.0		ML	Silt, light gray, with dark gray, trace root hairs, soft, moist		
480		3		0.0					
	10			0.0		CL	Silty Clay, orange brown and yellow brown, trace red, plastic, stiff, moist		
475		5		0.0					
				0.0			Silty Clay, orange brown and gray, trace sand, coarse, plastic, slightly stiff, moist		
	15			0.0		MH	Clayey Silt, orange brown, with sand, fine, trace coarse, plastic, stiff, dry		
470		1.5		0.0		CL	Silty Clay, orange brown, with gray, trace sand, coarse, plastic, very stiff, dry		
	20			0.0			Silty Clay as above, trace black nodules, increasing silt with depth		
465		4		0.0					
	25			0.0			Silty Clay as above, slightly stiff, moist		
		4		0.0		SC	Clayey Sand, red brown, with gray, trace black, fine, with silt, cohesive, slighlty stiff, moist		
460				0.0		SP	Sand, light gray, with silt, trace clay, fine, soft, wet		
	30	3.5		0.0		SM	Silty Sand, yellow brown, trace gray, trace clay, fine, slightly cohesive, soft, wet		
455				0.0		SP	Sand, red brown, fine to medium, loose, soft, wet		
		3.5		0.0		SM	Silty Sand, red brown, trace light gray, trace clay, fine, slightly cohesive, wet		

Geoprobe SS Pipe, no annulus

Geoprobe SS Drop Screen, no annulus

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 1/15/20

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-10
Project Name: **Whirlpool Corporation**
Project Number: **1690015592**

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
450	40	3		0.0 0.0		SW	Sand, brown, some clay, fine to coarse, slightly cohesive, wet		
				0.0		GC	Clayey Gravel, red brown, fine to coarse, subrounded, with sand, fine to coarse, cohesive, moist		
		2.5		0.0 0.0		MH	Clayey Silt (weathered shale), slightly plastic, very stiff, slightly laminated, dry		
445							Shale, very dark gray, very stiff, laminated, dry		
	45								
440									
	50								
435									
	55								
430									
	60								
425									
	65								
420									
	70								
415									
	75								
410									
	80								

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 1/15/20

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-11	Date(s): **11/19/2019**
Location: **Fort Smith, Arkansas**	
Logged By: **N. Zurweller, RG**	Checked By: **M. Wilson**
Contractor: **Environmental Works, Inc.**	Purpose: **Soil Boring/Hydropunch**
Drilling Method: **Direct Push**	GS Elevation: **485.08 ft amsl** / TOC Elevation: **NM**
Sampling Method: **Continuous Sampler**	North: **367548.49** / East: **590826.45**
Borehole Dia.: **2.25 inches**	Total Depth: **42.0 feet**
Project Number: **1690015592**	
Project Name: **Whirlpool Corporation**	
Remarks:	

Well Construction:

Blank Casing: 0.5" Stainless Steel 0 FT to 27.5 FT and 31.5 FT to 38 FT

Screen: Stainless Steel 0.010 27.5 FT to 31.5 FT and 38 FT to 42 FT

Annular Fill: No Annulus

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	USCS Code	Material Description
		3		3.6	ML	Fill, gravel and silt, dark gray brown, loose, moist
				2.4		Silt, gray brown, trace red brown, slightly stiff, moist
480	5	3		2.6	CL	Silty Clay, orange brown, trace red and gray, plastic, stiff, moist
				2.0		
475	10	5		2.0		Silty Clay, orange brown, with gray, trace red and gray, trace sand, coarse, plastic, stiff, dry
				1.8		Silty Clay as above, very stiff
470	15	4		2.1		Silty Clay as above, some black streaks
				2.2		
465	20	4		2.2		Silty Clay, red brown, with gray, trace black streaks, plastic, stiff, dry, increasing silt with depth
				2.5		
460	25	4		2.4		Silty Clay as above, slightly stiff, moist
				2.2	CL	Sandy Clay, red brown, with gray, fine, plastic, slightly stiff, moist
					SM	Silty Sand, gray, trace clay, fine, slightly cohesive, moist
				2.5	SP	Sand, red brown, fine, slightly cohesive, wet
455	30	4		2.2		
		3		2.0	CL	Sandy Clay, red brown, fine, plastic, slightly stiff, moist
				2.1	SP	Sand, yellow brown and red brown, fine, slightly cohesive, wet

Water Level

Well Construction

Geoprobe SS Pipe, no annulus

Geoprobe SS Drop Screen, no annulus

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 1/15/20

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-11
Project Name: **Whirlpool Corporation**
Project Number: **1690015592**

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
				2.1		GC	Sand and Gravel, red brown, with dark brown, with clay, sand, fine to coarse, gravel, fine to coarse, subrounded, slightly cohesive, moist		
		4		2.7					
				1.3					
445	40						Clayey Gravel, red brown, fine to coarse, subrounded, trace sand, fine to coarse, stiff, moist		
		2		1.0		MH	Clayey Gravel as above, with sand		
				0.6			Clayey Silt (weathered shale), yellow brown and very dark gray, slightly plastic, stiff, slightly laminated, dry		
							Shale, very dark gray, crushed, dry		
440	45								
435	50								
430	55								
425	60								
420	65								
415	70								
410	75								
405	80								

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-12-Shallow	Date(s): **11/20/2019**
Location: **Fort Smith, Arkansas**	
Logged By: **N. Zurweller, RG**	Checked By: **M. Wilson**
Contractor: **Environmental Works, Inc.**	Purpose: **Soil Boring/Hydropunch**
Drilling Method: **Direct Push**	GS Elevation: **485.90 ft amsl** / TOC Elevation: **NM**
Sampling Method: **Continuous Sampler**	North: **367525.00** / East: **591098.70**
Borehole Dia.: **2.25 inches**	Total Depth: **30.0 feet**
Project Number: **1690015592**	
Project Name: **Whirlpool Corporation**	
Remarks:	

Well Construction:

Blank Casing: Sch. 40 PVC 1 Inch 0 FT to 20 FT and 30 FT to 36 FT

Screen: Sch. 40 1 Inch 0.010 PVC 20 FT to 30 FT

Annular Fill: Nothing in Annulus

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
485		3		1.1 1.1		CL	Silty Clay, red brown, trace red, plastic, slightly stiff, moist		
	5								
480		2		6.2		ML	Silt, gray, trace yellow brown, soft, moist		
				1.9		CL	Silty Clay, yellow brown, with gray, plastic, stiff, moist		
	10								
475		5		1.6			Silty Clay, yellow brown, with gray, plastic, stiff, dry		
				1.6			Silty Clay, orange brown, trace gray, red and black, plastic, very stiff, dry		
	15								
470		4		1.1					
				1.6			Silty Clay as above, increasing silt with depth		
	20								
465		4		2.9 1.4			Silty Clay, red brown, trace gray, with black streaks, plastic, stiff, moist, increasing silt with depth		
				2.3		SC	Clayey Sand, red brown, trace gray, trace black streaks, with silt, fine, cohesive, wet		
	25	4							
460				1.9					
		1		1.1		SM	Silty Sand, orange brown, some gray, slightly cohesive, wet		
				1.9					
	30								
455									

1" PVC Riser, Nothing in Annulus

1" PVC Screen, Nothing in Annulus

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 1/15/20

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-12-Deep	Date(s): **11/20/2019**
Location: **Fort Smith, Arkansas**	
Logged By: **N. Zurweller, RG**	Checked By: **M. Wilson**
Contractor: **Environmental Works, Inc.**	Purpose: **Soil Boring/Hydropunch**
Drilling Method: **Direct Push**	GS Elevation: **485.90 ft amsl** / TOC Elevation: **NM**
Sampling Method: **Continuous Sampler**	North: **367525.00** / East: **591098.70**
Borehole Dia.: **2.25 inches**	Total Depth: **40.0 feet**
Project Number: **1690015592**	
Project Name: **Whirlpool Corporation**	
Remarks:	

Well Construction:

Blank Casing: 0.5 Inch Stainless Steel 0 FT to 36 FT

Screen: Stainless Steel 0.010 36 FT to 37.5 FT

Annular Fill: No Annulus

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
485		3		1.1 1.1		CL	Silty Clay, red brown, trace red, plastic, slightly stiff, moist		
	5								
480		2		6.2		ML	Silt, gray, trace yellow brown, soft, moist		
				1.9		CL	Silty Clay, yellow brown, with gray, plastic, stiff, moist		
	10								
475		5		1.6			Silty Clay, yellow brown, with gray, plastic, stiff, dry		
				1.6			Silty Clay, orange brown, trace gray, red and black, plastic, very stiff, dry		
	15								
470		4		1.1					
				1.6			Silty Clay as above, increasing silt with depth		
	20								
465		4		2.9 1.4			Silty Clay, red brown, trace gray, with black streaks, plastic, stiff, moist, increasing silt with depth		
				2.3		SC	Clayey Sand, red brown, trace gray, trace black streaks, with silt, fine, cohesive, wet		
	25								
460		4		1.9 1.1		SM	Silty Sand, orange brown, some gray, slightly cohesive, wet		
				1.9					
	30								
455		4		1.3		SP	Sand, orange brown, trace gray, with silt, fine, slightly cohesive, wet		
		3.5		1.3		GC	Sand and Gravel, red brown, tace clay, sand, fine to coarse, gravel, fine, subrounded, wet		

Geoprobe SS Pipe, no annulus

Geoprobe SS Drop Screen, no annulus

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 1/15/20

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-12-Deep
Project Name: **Whirlpool Corporation**
Project Number: **1690015592**

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
450		3.5		1.0 0.5		GC			
	40	1		0.7			Clayey Gravel, red brown, fine to coarse, subrounded, some sand, fine to coarse, moist, probe refusal at approximately 40' bgs		
445									
	45								
440									
	50								
435									
	55								
430									
	60								
425									
	65								
420									
	70								
415									
	75								
410									
	80								
405									

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 1/15/20

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-13	Date(s): **11/21/2019**
Location: **Fort Smith, Arkansas**	
Logged By: **N. Zurweller, RG**	Checked By: **M. Wilson**
Contractor: **Environmental Works, Inc.**	Purpose: **Soil Boring/Hydropunch**
Drilling Method: **Direct Push**	GS Elevation: **481.25 ft amsl** / TOC Elevation: **NM**
Sampling Method: **Continuous Sampler**	North: **367511.27** / East: **591721.57**
Borehole Dia.: **2.25 inches**	Total Depth: **38.0 feet**
Project Number: **1690015592**	
Project Name: **Whirlpool Corporation**	
Remarks:	

Well Construction:

Blank Casing: 0.5 Inch Stainless Steel 0 FT to 34 FT

Screen: Stainless Steel 0.010 34 FT to 38 FT

Annular Fill: No Annulus

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	USCS Code	Material Description
480	0	3		2.1	CL	Asphalt; Subbase Fill and Gravel; Silty Clay, yellow brown, with gray, trace red, trace sand, coarse, plastic, stiff, dry
				1.5		
	5					
475		3		1.7	MH	Clayey Silt, gray brown, trace black, plastic, soft, wet
					CL	Silty Clay, orange brown, trace black streaks, plastic, stiff, dry
				2.2		
	10					
470		5		2.0	MH	Clayey Silt, orange brown, with black nodules, trace sand, find and coarse, crumbles, stiff, dry
				1.5	CL	Silty Clay, orange brown, with black nodules, trace gray, plastic, stiff, moist
	15					
465		4		1.4		Silty Clay, orange brown, with gray, trace black nodules, plastic, stiff to very stiff, dry
				2.0		
	20			2.2	CL	Sandy Clay, orange brown, trace black nodules, fine, plastic, slightly stiff, moist
460		4		2.2	CL	Silty Clay, orange brown, with gray, with black streaks, plastic, stiff, moist
					SC	Clayey Sand, red brown, some gray, fine, cohesive, soft, wet
				3.1	SP	Sand, red brown, with silt and clay, fine to medium, slightly cohesive, soft, wet
	25	4				
455				3.1	SW	Sand, brown, fine to coarse, trace gravel, fine, subrounded, trace clay, loose, soft, wet
		2.5		2.4	GC	Sand and Gravel, red brown, with clay, fine to coarse, subrounded, slightly cohesive, wet
	30			2.3		
450		2		2.5		
				2.7		

Water Level

Well Construction

Geoprobe SS Pipe, no annulus

Geoprobe SS Drop Screen, no annulus

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 1/15/20

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-13
Project Name: **Whirlpool Corporation**
Project Number: **1690015592**

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
445		3.5		2.4			Sand and Gravel as above, with clay		
				2.9		MH	Clayey Silt (weathered shale), red brown, slightly plastic, stiff, slightly laminated, dry		
							Shale, very dark gray, very stiff, laminated, dry		
	40								
440									
	45								
435									
	50								
430									
	55								
425									
	60								
420									
	65								
415									
	70								
410									
	75								
405									
	80								
400									

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-14	Date(s): **11/21/2019**
Location: **Fort Smith, Arkansas**	
Logged By: **N. Zurweller, RG**	Checked By: **M. Wilson**
Contractor: **Environmental Works, Inc.**	Purpose: **Soil Boring/Hydropunch**
Drilling Method: **Direct Push**	GS Elevation: **485.16 ft amsl** / TOC Elevation: **NM**
Sampling Method: **Continuous Sampler**	North: **367533.00** / East: **591420.95**
Well Construction:	Borehole Dia.: **2.25 inches** / Total Depth: **42.0 feet**
Blank Casing: 0.5 Inch Stainless Steel 0 FT to 38 FT	Project Number: **1690015592**
Screen: Stainless Steel 0.010 38 FT to 42 FT	Project Name: **Whirlpool Corporation**
Annular Fill: No Annulus	Remarks:

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
		3		1.9		CL	Asphalt Subbase Gravel and Fill Silty Clay, gray brown, trace orange brown, plastic, stiff, moist		
				1.3					
480	5	4		3.3			Silty Clay, yellow, brown and gray brown, some gray, some black nodules, trace sand, coarse, plastic, stiff, moist		
				2.8					
475	10	2		3.0			Silty Clay, orange brown, with black nodules, trace gray, plastic, stiff, dry		
				2.9					
470	15	4		2.5					
				3.9					
465	20	4		3.3			Silty Clay as above, stiff to very stiff		
				4.1					
460	25	4		4.2					
				3.3			Silty Clay as above, with gray, stiff, increasing silt with depth		
		3		2.6					
455	30	3		2.6			Silty Clay, orange brown, with gray, plastic, slightly stiff, moist		
				3.0			Silty Clay as above, trace black streaks, trace sand, fine, probe refusal, off-set and resume logging 33.5' bgs		
				3.2		GC	Sand and Gravel, red brown, some clay, sand, fine to coarse, gravel, fine, subrounded, slightly cohesive, moist		

Geoprobe SS Pipe, no annulus

Geoprobe SS Drop Screen, no annulus

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 1/15/20

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-14
Project Name: **Whirlpool Corporation**
Project Number: **1690015592**

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
		3.5		2.8		GC			
		2		3.0 1.9			Sand and Gravel as above, gravel, fine to coarse, wet, probe refusal		
445	40						Not logged, hydropunch advanced further than soil sampler on 11/20/19, hydropunch refusal		
440	45								
435	50								
430	55								
425	60								
420	65								
415	70								
410	75								
405	80								

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 1/15/20

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-15	Date(s): **11/21/2019**
Location: **Fort Smith, Arkansas**	
Logged By: **N. Zurweller, RG**	Checked By: **M. Wilson**
Contractor: **Environmental Works, Inc.**	Purpose: **Soil Boring/Hydropunch**
Drilling Method: **Direct Push**	GS Elevation: **485.75 ft amsl** / TOC Elevation: **NM**
Sampling Method: **Not Sampled**	North: **367630.41** / East: **591300.60**
Well Construction:	Borehole Dia.: **2.25 inches** / Total Depth: **42.5 feet**
Blank Casing: 0.5 Inch Stainless Steel 0 FT to 38.5 FT	Project Number: **1690015592**
Screen: Stainless Steel 0.010 38.5 FT to 42.5 FT	Project Name: **Whirlpool Corporation**
Annular Fill: No Annulus	Remarks:

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
485	0						Not logged. Hydropunch only.		
480	5								
475	10								
470	15								
465	20								
460	25								
455	30								

Geoprobe SS Pipe, no annulus

Geoprobe SS Drop Screen, no annulus

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 1/15/20

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: HP-15

Project Name: **Whirlpool Corporation**

Project Number: **1690015592**

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
450									
	40								
445									
	45								
440									
	50								
435									
	55								
430									
	60								
425									
	65								
420									
	70								
415									
	75								
410									
	80								
405									

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 1/15/20

RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: TMW-36B	Date(s): **11/20/2019**
Location: **Fort Smith, Arkansas**	
Logged By: **N. Zurweller, RG**	Checked By: **M. Wilson, PG**
Contractor: **McCray Drilling, LLC**	Purpose: **Temporary Monitoring Well**
Drilling Method: **Hollow Stem Auger/Direct Push**	GS Elevation: **485.71 ft amsl** / TOC Elevation: **485.35 ft amsl**
Sampling Method: **Direct Push**	North: **367548.33** / East: **590884.71**
Borehole Dia.: **8.25 inches**	Total Depth: **31.0 feet**
Project Number: **1690015592**	
Project Name: **Whirlpool Corporation**	

Well Construction:

Blank Casing: Sch. 40 PVC 2 Inch — 0 FT to 25 FT

Screen: Sch. 40 2 Inch 0.010 PVC — 25 FT to 30 FT

Annular Fill: Cement Grout — 0 FT to 21 FT; Bentonite — 21 FT to 23 FT; Sand — 23 FT to 30 FT

Remarks: **Lithology from TMW-36 drilling log dated 6/13/2019.**

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	USCS Code	Material Description
485	0	1.5		0	MH	Topsoil, dark brown, with root hairs, dry
				0		Clayey Silt, brown and grayish brown, plastic, slightly stiff, moist
	5	1.5		0		Clayey Silt, orange brown, with gray mottling, trace sand, coarse, slightly plastic, slightly stiff, dry
480				0		
				0		
	10	4		0	CL	Silty Clay, orange brown, with gray mottling, trace sand, coarse, plastic, stiff, moist
475				0	CL	Sandy Clay, reddish brown, fine to coarse, plastic, slightly cohesive, stiff, moist
		4		0	CL	Silty Clay, orange brown, with gray mottling, plastic, very stiff, moist
	15			0		Silty Clay, orange brown, with gray mottling, with black nodules, slightly plastic, very stiff, moist
470		4		0		Silty Clay, orange brown, some gray mottling, trace black nodules, plastic, very stiff, dry
	20			0.3		Silty Clay, reddish brown, some gray mottling, with black streaks/nodules, plastic, very stiff, dry
465		4		0.3		Silty Clay, reddish brown, with gray mottling, with black streaks/nodules, plastic, slightly stiff, moist, increasing silt with depth
	25			0.5		
460		2		0.3	ML	Sandy Silt, orange brown, with gray mottling, very fine, with clay, cohesive, plastic, soft, moist
						Sandy Silt as above, wet
	30	3		0.9	SM	Sandy Silt, orange brown, with gray mottling, very fine, with clay, cohesive, plastic, slightly stiff, moist, increasing clay content with depth
455				0.3		Silty Sand, orange brown, with gray mottling, very fine, with clay, slightly cohesive, soft, wet (free water)

Water Level

Well Construction

1 pipe, in bentonite/cement (volclay/enviroplug)

1 pipe, in bentonite pellets

#1 filter pack sand

0.010" slotted screen

Slough at bottom of hole

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 12/9/19

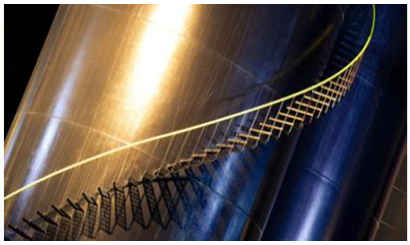
RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID:	SBTS-1	Date(s):	**11/22/2019**
Location:	**Fort Smith, Arkansas**		
Logged By:	**N. Zurweller, RG**		
Consulting Firm:	**Ramboll**	Checked By:	**M. Wilson**
Contractor:	**Environmental Works, Inc.**	Purpose:	**Soil Boring/Hydropunch**
Drilling Method:	**Direct Push**	Datum: **NAVD88**	Elevation: **473.11**
Sampling Method:	**Direct Push**	North: **367533.00**	East: **591420.95**
Remarks:		Borehole Dia.: **2.25 inches**	Total Depth: **28.0 feet**
		Project Number:	**1690015592**
		Project Name:	**Whirlpool Corporation**

Elevation (ft)	Water Level	Depth (ft)	Recovery (feet)	Sample ID.	PID (ppm)	Graphic Log	USCS Code	Material Description
								Not logged. Advance to 20' bgs with point on rods.
470		5						
465		10	NA			NA		
460		15						
455		20			2		CL	Silty Clay, orange brown, trace gray, with gravel, fine to coarse, subrounded, with sand, fine to coarse, plastic, slightly stiff, moist
450			2		32.6		GC	Sand and Gravel, red brown, some clay, sand, fine to coarse, gravel, fine to coarse, subrounded, cohesive, wet
		25	3.5	SBTS-1-SL (22-27 FT)-112219	95.7 112.9			
445								

Report: SOIL_LOG_REV 1_MKE2; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 1/22/20


ATTACHMENT G

2019 Area 1 Supplemental Investigation Report

Whirlpool Facility
Fort Smith, Arkansas

Prepared for:
Whirlpool Corporation

Prepared by:
Ramboll US Corporation

Date:
February 2020

Project Number:
1690015592

RAMBOLL

Table of Contents

Page

1 Introduction 1

2 Recovery Well Installation 2
2.1 DNAPL Assessment 3
2.2 Groundwater Sampling 3
2.3 Results 4

3 Constant Rate Pumping Test 5
3.1 Field Procedures 5
3.2 Pumping Test Data Analysis 6
3.3 Pumping Test Results 7

4 Summary and Conclusions 8

LIST OF TABLES

Table 1: RW-1 Groundwater Field Parameters Measurements (Fourth Quarter 2019)
Table 2: RW-1 Groundwater Sample VOC Results (Fourth Quarter 2019)
Table 3: Summary of Area 1 Hydraulic Conductivity Testing Results
Table 4: Summary of Pumping Test Water Level Measurements (December 2019)

LIST OF FIGURES

Figure 1: Area 1 Locations (November 2019)

LIST OF APPENDICES

Appendix A: Area 1 Well Construction and Soil Logs
Appendix B: Pumping Test Analysis Report
Appendix C: Laboratory Analytical Reports

1 Introduction

On behalf of Whirlpool Corporation (Whirlpool), Ramboll US Corporation (Ramboll) has prepared this 2019 Area 1 Supplemental Investigation Report (Report) for the former Whirlpool facility on Jenny Lind Road in Fort Smith, Arkansas (Site) (see Figure 1). This report summarizes the installation of a recovery well and completion of a pumping test in Area 1 located at the exterior northwest corner of the former Whirlpool building. Area 1 was designated in the Remedial Action Decision Document (RADD) from 2013 and represents the location of soil and groundwater impacts that exhibit the highest constituent concentrations at the former Whirlpool site.

The new recovery well (RW-1) was installed within the limestone gravel backfill of large diameter boring (LDB) LDB-11. LDB-11 was completed at former soil probe DP-08 which exhibited the highest trichloroethene (TCE) concentration in soil. RW-1/LDB-11 is immediately west of IW-141 which has exhibited one the highest TCE concentrations in groundwater (see Figure 1).

In October 2014, nineteen LDBs were completed along the former linear drainage feature northwest of the existing building to remove TCE impacted Vadose Zone and Basal Transmissive Zone soils in and around Area 1. After drilling was completed to the surface of the underlying shale at each LDB location, the LDBs were backfilled with crushed limestone gravel to the approximate groundwater potentiometric level [approximately 15 feet below ground surface (bgs)] followed by lean cement (i.e. sand with Portland cement) to the surface. Further discussion of the LDB remediation event was provided in the Large Diameter Borings Summary Report prepared by Ramboll dated February 2015.

The purpose of recovery well installation is to: (1) continue to assess whether dense non-aqueous phase liquid (DNAPL) may be present in Area 1 and the former linear drainage feature; (2) assess whether potential DNAPL, if present, may be recovered if a hydraulic gradient is created by pumping from the recovery well and (3) confirm aquifer hydraulic characteristics within the LDB to support further assessment of remedial activities within Area 1 including mass removal and hydraulic control (limit further migration of constituents to the south plume) via pump-and-treat and injection of reagents to facilitate in-situ chemical reduction (ISCR). A secondary purpose is to continue to assess if the limestone gravel backfill in the LDBs has influenced the pH in groundwater in Area 1 by providing greater buffering capacity regarding the naturally low pH in groundwater.

2 Recovery Well Installation

RW-1 was installed within LDB-11 (see Figure 1), is 4 inches in diameter and was completed with a solid cased sump just below the top of the shale bedrock surface at the base of the Basal Transmissive Zone, below the well screen, to facilitate collection of DNAPL if present. The gravel backfill at LDB-11 extends from approximately 14 to 29 feet bgs. The drilling and installation of the recovery well was completed using sonic drilling techniques to a depth advancing approximately 5.5 feet into the underlying shale bedrock to allow for sump installation. The borehole was logged by a Ramboll geologist. The well was constructed with a 4 inch diameter polyvinyl chloride (PVC) casing and a 15 feet long, 0.01 inch slot PVC well screen installed within the gravel backfill of LDB-11 with the well screen extending approximately 1 foot into the underlying shale (approximately 29.5 feet bgs) to facilitate draining any potential free product that may be present at the surface of the shale. Approximately 4.5 feet of solid PVC pipe was installed below the well screen to construct a solid cased 4.5 feet long sump into the underlying shale to a total depth of 34 feet bgs. Cement bentonite grout was installed with a tremie pipe to seal the annular space surrounding the solid cased sump and was placed from the bottom of the boring and extended up to within less than 0.5 feet from the bottom of the well screen. The cement bentonite grout was placed as close as practical to the base of the well screen (i.e. to preclude as much as practical any potential free product collecting in the sand pack annular space). The recovery well construction log is provided in Appendix A.

After the cement bentonite grout was allowed to set for approximately 18 hours, a sand pack was installed in the well annulus around the PVC screen to approximately 2 feet above the top of the screen followed by approximately 2 feet of annular seal consisting of hydrated bentonite above the top of the sand pack. The depth to the top of the bentonite was confirmed to ensure it is within the lean cement portion of the large diameter to avoid loss of grout to the gravel portion of the large diameter boring. The remainder of the annular space was grouted with a cement bentonite grout. The top of the well casing was set slightly lower than grade and a traffic rated flush-mount well surface protector was installed within a concrete apron.

RW-1 was developed by the driller and Ramboll after installation in accordance with Arkansas Department of Environmental Quality (ADEQ) guidance. Development consisted of pumping from RW-1 until the well consistently produced groundwater exhibiting low turbidity. Pumping continued until approximately 750 gallons (approximately 1.50 pore volumes) of water were purged from the gravel backfilled portion of LDB-11. Approximately 15 feet of gravel are present in the bottom portion of the 4 foot diameter LDB-11 and assuming 30% porosity, approximately 425 gallons of water was one pore volume. Following development pumping and stabilization of water quality parameters, a groundwater sample was collected. Sample results are summarized in Section 2.3.

A licensed Arkansas surveyor surveyed the well for location and elevation after installation.

Drill cuttings and purge water from well installation and development were containerized and are temporarily stored on the site pending proper disposal.

The lithology encountered at the northwest portion of the site near Area 1 in the vicinity of RW-1 consists predominately of clayey silts and silty clays from the surface to depths ranging from 15 to 20 feet with occasional fine to medium sandy clay and clayey sand with silt to depths ranging from 18 to 24 feet followed by a medium to coarse clayey sand and subrounded gravel zone to depths ranging from 20 to 29 feet which is underlain by clayey silt that transitions to underlying shale. Top of shale bedrock is typically encountered at depths ranging from 27 to 30 feet. Well and soil boring logs in the vicinity of RW-1, including RW-1 are provided in Appendix A.

2.1 DNAPL Assessment

Previous assessments for DNAPL have been negative for the presence of a discernable free product layer (i.e. DNAPL) or globules of free product in Area 1. The DNAPL assessment at RW-1 included the following steps:

- Measuring the total depth of RW-1 with a product interface probe to evaluate if the sump of the well has accumulated silt while measuring for product detection with the meter;
- Collecting groundwater from the base of RW-1 with a peristaltic pump and subsequently with a bailer for visual observation to assess the presence of DNAPL; and
- Field testing of water removed from the base of RW-1 with Sudan IV, a hydrophobic dye, to determine if DNAPL was present.

A second assessment for DNAPL in RW-1 was performed during and after the pump test (described below). No evidence of a discernable free product layer was identified from RW-1 during the DNAPL assessment.

2.2 Groundwater Sampling

Groundwater samples were collected from RW-1 approximately 24 hours following development at the approximate half-way point during the pumping test and at the end of the of pumping test prior to shutting off the pump. Samples were collected using low flow methods via the use of a peristaltic pump and dedicated polyethylene tubing. The tubing was placed within the bottom half of the RW-1 screen approximately 25 and 29 feet below the top of the well casing (btoc). Samples were collected at a rate of approximately 0.1 to 0.2 liters (L) per minute.

Water quality field parameters were recorded at RW-1 approximately 24 hours after well development on November 22, 2019, periodically during the pumping test on December 5-6, 2019, and after the pumping test on December 6, 2019. Measured parameters included dissolved oxygen (DO), specific conductance, temperature, pH, and oxidation reduction potential (ORP). In addition, ferrous iron and persulfate readings were measured prior to sample collections using field kits. Table 1 presents the results of measured water quality parameters.

Groundwater from RW-1 was sampled for volatile organic compounds (VOCs). Sample containers were labeled and packed on ice in insulated coolers before being shipped under chain of custody to Pace Analytical Services in Lenexa, Kansas. Chain of custody procedures were followed from the point of sample collection through completion of analysis.

2.3 Results

The water quality field parameters recorded at RW-1 indicate groundwater conditions are reducing with negative ORP [-98 to -306 Millivolts (mV)], low DO [0.59 milligrams per liter (mg/l)] and the pH is elevated at 9.2 to 11.0 standard units. Table 1 presents the results of measured water quality parameters.

Analytical results from RW-1 are summarized in Table 2 and laboratory reports are included in Appendix C. The following is a summary of groundwater VOC concentrations for contaminants of concern from RW-1:

SAMPLE LOCATION	SAMPLE DATE	ANALYTICAL RESULTS (µg/L)		
		TCE	cis-1,2,-DCE	VINYL CHLORIDE
RW-1	11/22/2019	54,600	1,260	93.1
RW-1*	12/6/2019	6,860	427J	53.7
RW-1**	12/6/2019	26,300	583 J	40.3

J: Estimated Concentration
11/22/19 sample collected approximately 24 hours after well development.
*Sample collected at approximate half-way point (after approximately 1,800 gallons purged) during pumping test.
**Sample collected at end of pumping test (after approximately 3,700 gallons purged).

TCE concentrations were detected above the RADD remedial action level (RAL) of 5 micopgrams per liter (µg/L), cis-1,2-DCE concentrations were detected above the RAL of 70 µg/L and VC concentrations were detected above the RAL of 2 µg/L in all samples.

In addition to the above VOCs, concentrations were detected above the RADD RALs in VOCs 1,1-dichloroethene (1,1-DCE), 1,1,2,2-tetrachloroethane (1,1,2,2-TCA) and tetrachloroethene (PCE) in all samples collected from RW-1. Concentrations of 1,1-DCE ranged from 41.2 µg/L to 69.6 µg/L (vs RAL of 7 µg/L). Concentrations of 1,1,2,2-TCA ranged from 1.3 µg/L to 3.5 µg/L (vs RAL of 0.066 µg/L). Concentrations of PCE ranged from 8.9 µg/L to 17.8 µg/L (vs RAL of 5 µg/L).

3 Constant Rate Pumping Test

The calculated hydraulic conductivities within Area 1 have ranged from 5.18 E-04 centimeters per second (cm/sec) (1.5 feet per day) at ITMW-19 to 1.01 E-02 cm/sec (28.5 feet per day) at ITMW-17. These results are typical of hydraulic conductivities associated with silts, sandy silts and clayey sands. Table 3 summarizes hydraulic conductivity results from slug tests and pumping tests conducted in Area 1.

For comparison and reference regarding hydraulic conductivities in Area 1, during the third in-situ chemical oxidation (ISCO) injection event in October/November 2014 injection flow rates ranged from 1.06 gallons per minute (gal/min) to 4.00 gallons per minute at measured well head pressures ranging from 0 psi to 20 pounds per square inch (psi). Injection locations exhibiting the highest flow rates in the vicinity of the LDBs were recorded at (see Figure 1 for well locations):

- IW-133 at 3.64 gallons per minute (IW-133 was abandoned in June 2019 and was located approximately 40 feet northeast of LDB-11);
- IW-142 at 3.57 gallons per minute (IW-142 is located approximately 20 feet east of LDB-11);
- IW-147 at 3.17 gallons per minute (IW-147 is located approximately 50 feet southwest of LDB-11); and
- IW-148 at 3.03 gallons per minute (IW-148 is located approximately 20 feet south of LDB-11).

As mentioned earlier, the performance of a pumping test and assessment of the hydraulic conductivity at the recovery well will provide data to assess potential constituent mass removal and hydraulic control in Area 1 as well as provide data for assessment of injection of reagents to facilitate ISCR.

3.1 Field Procedures

A constant rate pumping test was performed at RW-1 on December 5 and 6, 2019. The well network, including RW-1 and observation wells, are depicted on Figure 1. The following list of wells were used as observation wells during the pump test and describes the approximate distance and direction of each relative to RW-1:

- IW-142 located approximately 20 feet east;
- IW-143 located approximately 45 feet east;
- IW-144 located approximately 70 feet east;
- IW-132 located approximately 25 feet north;
- IW-147 located approximately 50 feet southwest; and
- IW-148 located approximately 25 feet south.

Water levels were monitored during the pumping test using a vented In-Situ LevelTroll transducer in RW-1 and unvented In-Situ LevelTroll transducers in observation wells. The

transducers were securely deployed in RW-1 and observation wells IW-132, IW-142, IW-147 and IW-148 by a direct-read cable allowing real-time viewing of data. The transducers were positioned below static water levels to approximately 20 feet below top of casing in RW-1 to avoid interfering with pump installation in RW-1 and similar depths in the observation wells. Manual water level measurements were also measured and recorded using an electronic water level indicator before the pumping test to determine static water levels as well as during and after the test to confirm the transducer data. Manual water levels are summarized on Table 3.

An In-Situ BaroTroll was installed in MW-85R during the pumping test above static water levels to record barometric pressure for converting absolute pressure data recorded by unvented transducers to relative pressure. In addition, the transducers and a barologger were installed on November 22, 2019, and allowed to record data until December 4, 2019, to record background water levels and associated barometric pressure. Pumping rates during the pumping test were measured by a flow meter and confirmed visually using graduated measuring equipment.

Following deployment of all equipment and initial static water level measurements the pumping test was initiated at a pumping rate assessed during step drawdown testing (conducted on December 4, 2019) at a rate of 2.5 gallons per minute. The pump used during the step drawdown testing and the pumping test was a Grundfos Redi Flo2 submersible pump. The pumping test was conducted for 24 hours. Periodic manual water level measurements of the well network were recorded during the pumping test to confirm transducer readings and in observation wells IW-143 and IW-144 where transducers were not installed.

As noted earlier, geochemical parameters of purge water generated from RW-1 during the pumping test were periodically measured and recorded and are presented on Table 1.

After pumping test completion on December 6, 2019, the transducers continued to record data while the pump was shut off to initiate a recovery test and manual water level measurements of the well network were recorded during the recovery period to confirm transducer readings. Recovery occurred for approximately three days. Following the recovery period, a final manual water level of the well network was recorded, transducer data was downloaded and transducers were removed from the well network. Approximately 3,700 gallons were purged during the pumping test period.

As noted earlier, a second DNAPL assessment was performed in RW-1 after the pumping test was completed. No evidence of a discernable free product layer was identified.

All field equipment in contact with groundwater was decontaminated by washing with a detergent solution followed by rinsing with deionized water. All wastewater generated during decontamination and pumping was containerized and is temporarily stored on the site property pending disposal.

3.2 Pumping Test Data Analysis

After completion of field activities, the test data was analyzed to evaluate the aquifer response and hydraulic conductivity.

Data from non-vented sensors was corrected for barometric pressure using Win-Situ Baro Merge proprietary software. Corrected data was manipulated and reformatted in order to be analyzed with Aquifer Test Solver (AQTSOLV) software. Following transducer data processing, water level displacement (i.e. drawdown) data was summarized from the pumping test well and from observation wells.

Initial data, including drawdown versus time, was analyzed using AQTSOLV software to support the selection of the appropriate pumping test analysis methods.

AQTESOLV software for pumping test data analysis features a comprehensive set of solution methods for confined, leaky confined, unconfined and fractured aquifers and was used to analyze the pumping test. Analysis involves matching the solution to drawdown data collected during the pumping test.

The Moench solution provided the better fit to the data compared to other available solutions[1]. The model fit was focused on pumping portion of the data.

3.3 Pumping Test Results

Water level drawdown and recovery was observed in RW-1 and observation wells during the pumping test and is summarized in Table 4. Approximately 1.4 feet of total drawdown was observed in RW-1 during the test. Similar drawdown was observed in observation wells IW-132, IW-142, IW-147 and IW-148 ranging from 0.87 feet in IW-147 (50 feet southwest of RW-1) to 0.95 feet in IW-142 (20 feet east of RW-1, the closest observation well). Drawdown of 0.7 feet in IW-143 (45 feet east of RW-1) and 0.62 feet in IW-144 (70 feet east of RW-1) were slightly less however static water levels were not established in these wells prior to the pumping test.

The solution results for RW-1 indicated a K value of 1.95 feet per day for the pumping period. Curve matching parameters and model curve fits for the pumping test are provided in Appendix B.

[1] Moench (1997) derived an analytical solution for unsteady flow to a fully or partially penetrating, finite-diameter well with wellbore storage and wellbore skin in a homogeneous, anisotropic unconfined aquifer with delayed gravity response.

4 Summary and Conclusions

This report has presented the results of an Area 1 supplemental investigation conducted in November and December of 2019. As part of the investigation, Ramboll completed a DNAPL assessment and a 24 hour constant rate pumping test at RW-1. Six observation wells (IW-132, IW-142, IW-143, IW-144, IW-147 and IW-148) were utilized during the pumping test. The results indicate the following:

- The water quality field parameters recorded at RW-1 indicate groundwater conditions are reducing with negative ORP, low DO and the pH is elevated.
- TCE levels were elevated post RW-1 development at 54,600 µg/L. During the test, TCE levels increased from 6,860 µg/L to 26,300 µg/L at the end of the test. TCE breakdown products cis-1,2-DCE and vinyl chloride were also detected in the post development and pump testing groundwater samples.
- The results of the test indicate an estimated K value of 1.95 feet per day which is within the range of previous single well (slug) testing results.
- Approximately 1.40 feet of total drawdown was observed in RW-1. The radius of influence from the pumping well was considerable as drawdown was observed in observation wells ranging from 0.95 feet 20 feet east of RW-1 to 0.87 feet 50 feet southwest of RW-1. Additional water level monitoring during the test indicated approximate water level drawdowns of 0.7 feet 45 feet east of RW-1 and 0.62 feet 70 feet east of RW-1.
- No evidence of a discernable free product layer was identified from RW-1 during the DNAPL assessment.

Whirlpool is evaluating additional remedial efforts based on the work completed during this investigation. Further analysis and discussion based on data collected during this supplemental investigation is anticipated as remedial evaluation for Area 1 progresses.

Tables

TABLE 1
RW-1 GROUNDWATER FIELD PARAMETERS MEASUREMENTS
(FOURTH QUARTER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Well Casing Diameter (in)	Date Sampled	Water Level prior to Purging (ft btoc)	Total Depth of Well Casing (ft btoc)	Measurement Depth (ft btoc)	Time Sampled	Water Level after Purging (ft btoc)	Purge Volume (Gallons)	Purge Rate (ml/min)	Temperature (°C)	Specific Conductivity (µS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTUs)	Ferrous Iron (mg/L)	Persulfate (mg/L)	Color
Post Development Prior to Pumping Test																		
RW-1	4	11/22/19 13:15	8.90	33.75	29.0	13:15	8.90	5.0	150	20.5	1,598	0.59	9.22	-187.9	27.80	NM	2.10	Clear
During Pumping Test																		
RW-1	4	12/5/19 16:05	8.79	33.75	15.0	16:05	NA	213	9,464	22.3	472	0.24	11.00	-305.6	NM	NM	NM	Clear
		12/5/19 17:25	8.79	33.75	15.0	17:25	NA	413	9,464	22.4	468	NM	10.99	-285.7	NM	NM	NM	Clear
		12/5/19 20:58	8.79	33.75	15.0	21:00	NA	951	9,464	22.4	460	NM	10.43	-209.6	NM	NM	NM	Clear
		12/5/19 23:46	8.79	33.75	15.0	23:45	NA	1,364	9,464	22.4	426	NM	10.08	-177.4	NM	NM	NM	Clear
		12/6/19 2:46	8.79	33.75	15.0	2:45	NA	1,746	9,464	22.4	439	NM	10.16	-194.7	NM	0.11	2.10	Clear
		12/6/19 12:52	8.79	33.75	15.0	12:50	NA	3,259	9,464	22.4	1,417	NM	9.32	-128.3	NM	NM	NM	Clear
After Pumping Test																		
RW-1	4	12/6/19 16:20	8.79	33.75	15.0	4:20	NA	3,670	NA	22.4	1,450	NM	9.24	-97.9	NM	NM	NM	Clear

Notes:

ft btoc = Feet below top of casing
in = Inches
ORP = Oxidation reduction potential
DO = Dissolved oxygen
(°C) = Degrees Celcius
mV = Millivolts
NA = Not Applicable

mL/min = Milliliters per minute
mg/L = Milligrams per liter
NTUs = Nephelometric turbidity units
NM = Not measured
(µS/cm) = Microsiemens per centimeter

Purge volumes on 12/5 and 12/6 represent cummulitive volume purged during pumping test.
9,464 ml/min = 2.5 gallons/minute

TABLE 2
RW-1 GROUNDWATER SAMPLE VOC RESULTS
(FOURTH QUARTER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued Dec 2013	RW-1		
Field Sample ID		RW-1-201911	RW-1-201912-1	RW-1-201912-2
Lab Sample ID(s)		60322267002	60323607001	60323607003
Sample Date		11/22/2019	12/6/2019	12/6/2019
Sample Method		Low Flow	Low Flow	Low Flow
Volatile Organic Compounds (µg/L)				
Acetone	12,000	8.1 J (3.3)	U (7.4)	U (7.4)
Benzene	5	0.41 J (0.079)	U (0.13)	U (0.13)
Bromodichloromethane	80	0.28 J (0.17)	0.40 J (0.14)	U (0.14)
Bromoform	80	0.52 J (0.21)	1.7 (0.28)	1.8 (0.28)
Bromomethane	7	U (0.32)	U (2.8)	U (2.8)
2-Butanone	4,900	2.6 J (0.70)	U (1.8)	U (1.8)
Carbon Disulfide	720	0.60 J (0.16)	U (0.086)	U (0.086)
Carbon Tetrachloride	5	0.28 J (0.084)	1.7 (0.070)	1.7 (0.070)
Chlorobenzene	100	U (0.13)	U (0.17)	U (0.17)
Chloroethane	12,000	U (0.42)	U (0.83)	U (0.83)
Chloroform	80	11.3 (0.10)	6.4 (0.25)	6.0 (0.25)
Chloromethane	190	0.25 J (0.16)	U (0.51)	U (0.51)
Dibromochloromethane	80	U (0.15)	U (0.15)	U (0.15)
1,1-Dichloroethane	2.4	1.1 (0.097)	U (0.12)	0.59 J (0.12)
1,2-Dichloroethane	5	0.47 J (0.14)	U (0.33)	U (0.33)
1,1-Dichloroethene	7	69.6 (0.22)	41.2 (0.14)	42.9 (0.14)
cis-1,2-Dichloroethene	70	1,260 (170)	427 J (170)	583 J (170)
trans-1,2-Dichloroethene	100	13.5 (0.17)	10.4 (0.082)	8.3 (0.082)
Ethyl Benzene	700	0.46 J (0.12)	U (0.20)	U (0.20)
2-Hexanone	34	U (1.0)	U (1.6)	U (1.6)
4-Methyl-2-pentanone	1,000	0.94 J (0.56)	U (1.3)	U (1.3)
Methylene Chloride	5	4.3 (0.27)	3.2 (0.35)	2.5 (0.35)
1,1,2,2-Tetrachloroethane	0.066	3.5 (0.31)	1.3 (0.23)	1.5 (0.23)
Tetrachloroethene	5	17.8 (0.22)	9.2 (0.14)	8.9 (0.14)
Toluene	1,000	9.3 (0.14)	2.4 (0.17)	2.3 (0.17)
1,1,1-Trichloroethane	200	14.6 (0.12)	13.8 (0.12)	15.0 (0.12)
1,1,2-Trichloroethane	5	1.9 (0.10)	2.2 (0.10)	2.1 (0.10)
Trichloroethene	5	54,600 (170)	6,860 (170)	26,300 (170)
Vinyl Chloride	2	93.1 (0.11)	53.7 (0.17)	40.3 (0.17)
Xylenes (total)	10,000	2.5 J (0.34)	U (0.42)	U (0.42)

Notes:

1 Only compounds with at least one detection are shown.

2 The detection limit for VOCs is the sample quantitation limit.

3 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued Dec 2013 are double underlined.

U = Not detected

J = Estimated concentration

( ) = Method detection limit for VOCs; reporting detection limit for other

RADD = Remedial action decision document

ADEQ = Arkansas Department of Environmental Quality

RAMBOLL

TABLE 3
SUMMARY OF AREA 1 HYDRAULIC CONDUCTIVITY TESTING RESULTS
Whirlpool Facility - Fort Smith, Arkansas

Year	Location		Results		Method	Source
	Well/Point ID	Flow Regime	cm/sec	feet/day		
2019	RW-1	Southern	6.90E-04	2.0	PT	Ramboll 2019
2014	Slug-06	Southeast of Source	8.80E-04	2.5	PN	Ramboll Environ 2014
2014	Slug-08	Southeast of Source	3.50E-04	1.0	PN	Ramboll Environ 2014
1999	ITMW-7	Southern	9.45E-04	2.7	ST	ERM Supplemental Site Investigation, 2000
1999	ITMW-11	Southern	4.27E-03	12.1	ST	ERM Supplemental Site Investigation, 2000
1999	ITMW-12	Southern	1.77E-03	5.0	ST	ERM Supplemental Site Investigation, 2000
1999	ITMW-13	Southern	9.75E-04	2.8	ST	ERM Supplemental Site Investigation, 2000
1999	ITMW-15	Southern	2.35E-03	6.7	ST	ERM Supplemental Site Investigation, 2000
1999	ITMW-17	Southern	1.01E-02	28.5	ST	ERM Supplemental Site Investigation, 2000
1999	ITMW-18	Southern	1.73E-03	4.9	ST	ERM Supplemental Site Investigation, 2000
1999	ITMW-19	Southern	5.18E-04	1.5	ST	ERM Supplemental Site Investigation, 2000
1999	MW-25	Southern	1.16E-03	3.3	ST	ERM Supplemental Site Investigation, 2000
1997	ITMW-11[1]	Southern	4.60E-03	13.0	PT	Malcolm Pirnie Supplemental Site Investigation, 1997
1997	ITMW-12[1]	Southern			PT	Malcolm Pirnie Supplemental Site Investigation, 1997
1997	ITMW-13[1]	Southern			PT	Malcolm Pirnie Supplemental Site Investigation, 1997
		Average	**2.47E-03**	**7.0**		

Notes:

cm/sec = Centimeters per second

PT= Pumping Test

ST = Slug Test

PN = Pneumatic Slug Test through Geoprobe rods with pullback screen

1 - average hydraulic conductivity reported for ITMW-11,12,13 Malcom Pirnie, 1997

TABLE 4
SUMMARY OF PUMPING TEST WATER LEVEL MEASUREMENTS
(DECEMBER 2019)
Whirlpool Facility - Fort Smith, Arkansas

Well	Diameter (inches)	Total Depth (ft btoc)	Screen Length (ft)	Screen Interval (ft bgs)	Before Pump Test	Before Pump Shut-Off	End of Recovery	Total Drawdown (ft)	Percent Recovery (%)
					12/5/20 13:45	12/6/20 14:40	12/9/20 8:29		
					Static DTW (ft btoc)	DTW (ft btoc)	DTW (ft btoc)	DTW (ft)	DTW (ft)
RW-1	4	33.75	15	14.5-29.5	8.79	10.19	8.73	1.40	100.7
IW-132	2	28	5	23-28	11.41	12.29	11.35	0.88	100.5
IW-142	2	25	5	20-25	8.84	9.79	8.83	0.95	100.1
IW-147	2	25	5	20-25	9.02	9.89	8.96	0.87	100.7
IW-148	2	25	5	20-25	9.20	10.13	9.13	0.93	100.8
IW-143	2	25	5	20-25	9.08	9.78	8.83	0.70	102.8
IW-144	2	25	5	20-25	9.19	9.81	8.9	0.62	103.3

Notes:

DTW = Depth to water

ft = Feet

btoc = Below top of casing

bgs = Below ground surface

% = Percent

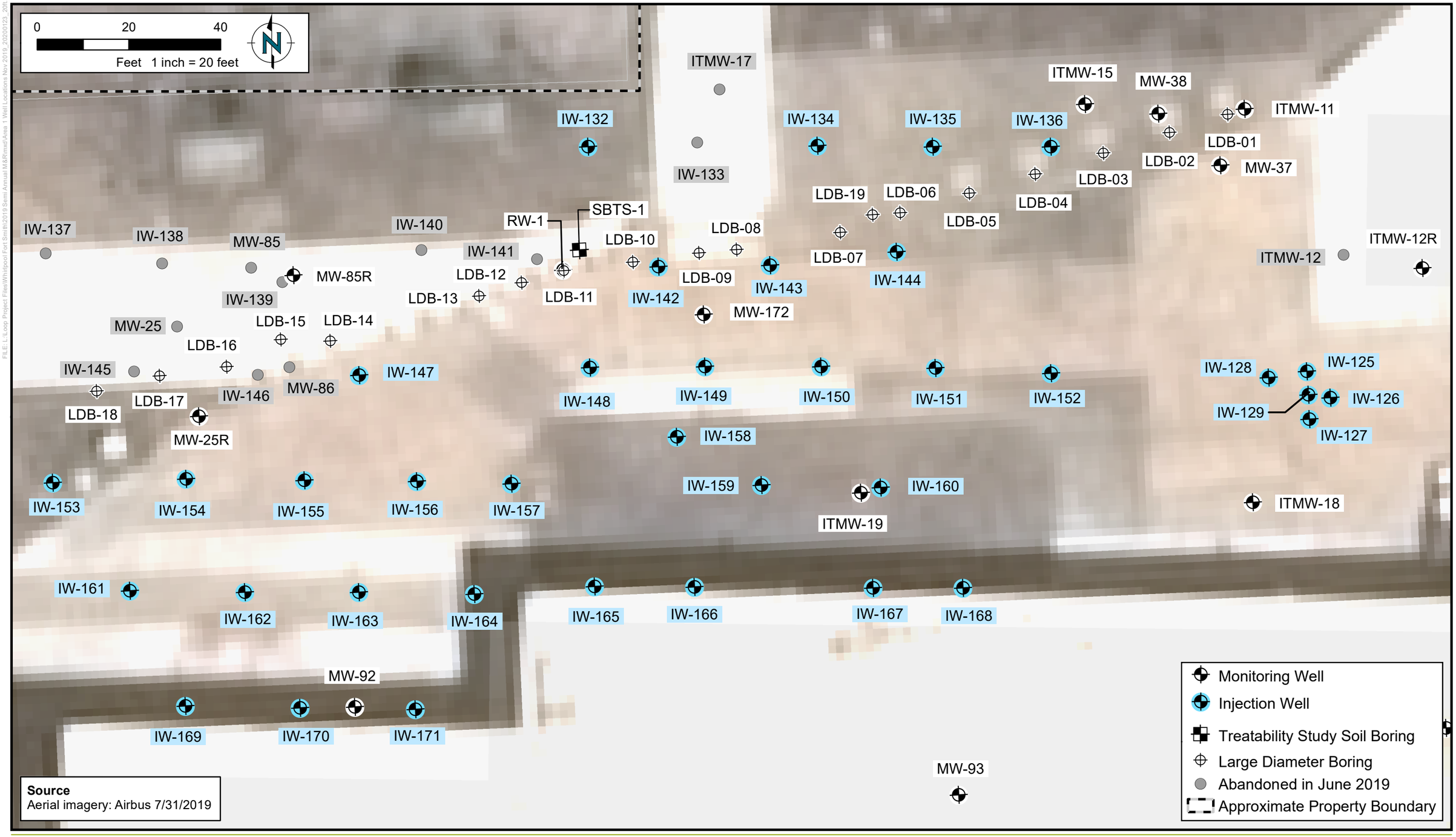
NA = Not available

Water levels were not measured in IW-143 and IW-144 until after pump test commencement at 17:22 and 18:50, respectively.

RAMBOLL

Figures

FILE: L:\Loop Project Files\Whirlpool Fort Smith\2019 Semi Annual M&R\mxd\Area 1 Well Locations Nov 2019_20200123_20ft.mxd



RAMBOLL

DRAFTED BY: FK | DATE: 01/23/2020

AREA 1 LOCATIONS, NOVEMBER 2019

Whirlpool Facility - Fort Smith, Arkansas

Figure
1

PROJECT: 1690009230

Appendix A
Area 1 Well Construction and Soil Logs

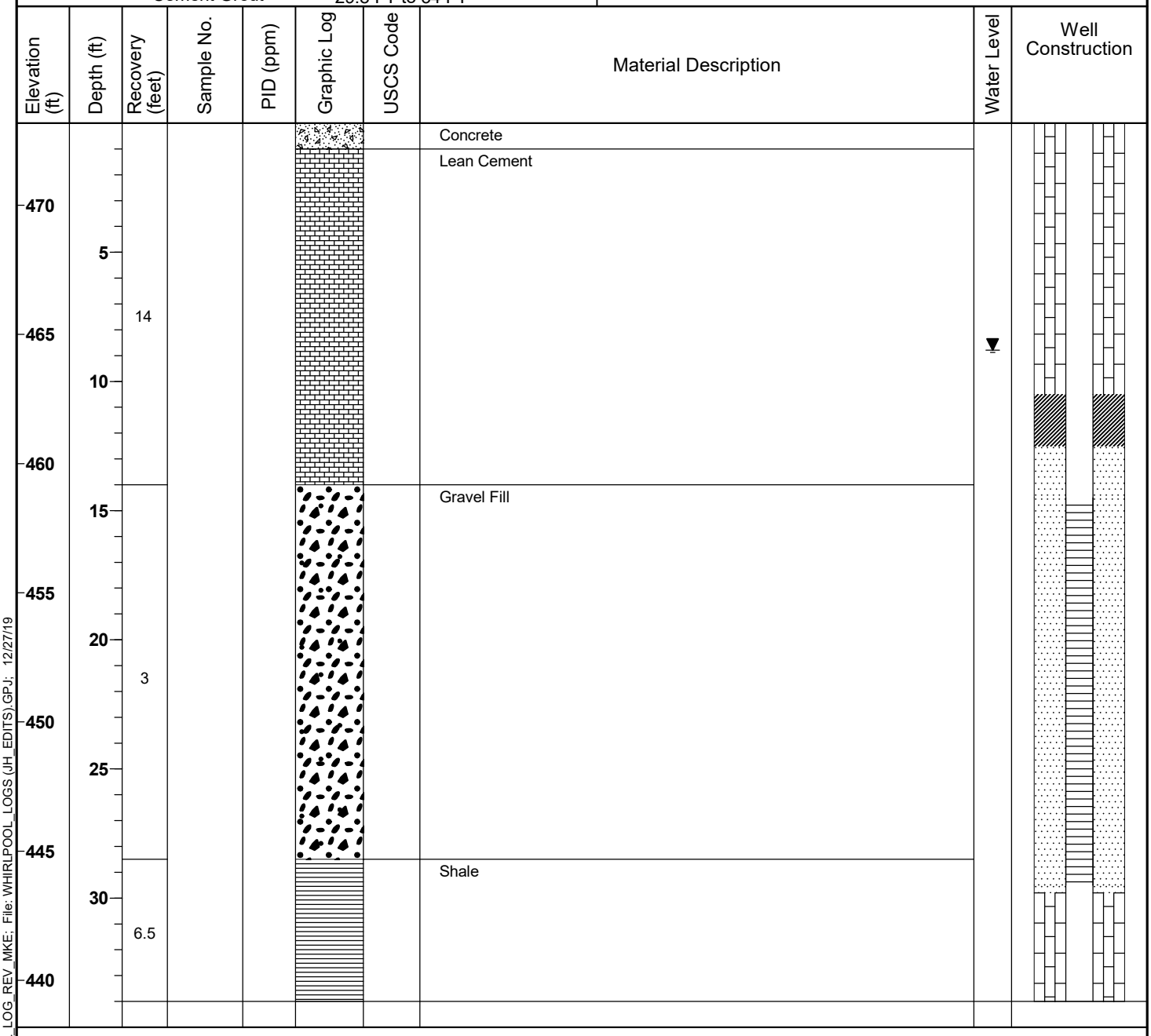
RAMBOLL

1807 Park 270 Drive Suite 320, St. Louis, MO 63146

Site ID: RW-1	Date(s): **11/20/2019**
Location: **Fort Smith, Arkansas**	
Logged By: **N. Zurweller**	Checked By: **M. Wilson**
Contractor: **Environmental Works, Inc.**	Purpose: **Recovery Well**
Drilling Method: **Sonic**	GS Elevation: **473.18 ft amsl** / TOC Elevation: **472.91 ft amsl**
Sampling Method: **Sonic**	North: **369013.35** / East: **590828.09**
Borehole Dia.: **8 inches**	Total Depth: **34.0 feet**
Project Number: **1690015592**	
Project Name: **Whirlpool Corporation**	
Remarks:	

Well Construction:

Blank Casing:	Sch 40 PVC 4 Inch	0 FT to 14.5 FT
Screen:	Sch. 40 0.10 PVC	14.5 FT to 29.5 FT
Annular Fill:	Cement Grout	0 FT to 10.5 FT
	Bentonite	10.5 FT to 12.5 FT
	Sand	12.5 FT to 29.8 FT
	Cement Grout	29.8 FT to 34 FT



bentonite/cement grout | bentonite pellets | filter pack sand | 0.010" slotted screen | Static ground water

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS (JH_EDITS).GPJ; 12/27/19

ENVIRON

2118 N. Tyler Road, Wichita, Kansas 67212

Site ID: IW-132	Date(s): **10/8/2014**
Location: **Fort Smith, Arkansas**	
Logged By: **M. Eddings**	Checked By: **K. Stonestreet**
Contractor: **Able Environmental**	Purpose: **Injection Well**
Drilling Method: **Hollow Stem Auger**	GS Elevation: **475.87 amsl** / TOC Elevation: **475.49 amsl**
Sampling Method: **Soil Cuttings**	North: **369039.91** / East: **590834.96**
Well Construction:	Borehole Dia.: **8.25 inches** / Total Depth: **28.0 feet**
Blank Casing: Sch 40 PVC 2 Inch — 0 FT to 23 FT	Project Number: **3434446A**
Screen: Sch. 40 0.10 PVC — 23 FT to 28 FT	Project Name: **Whirlpool Corporation**
Annular Fill: Cement Grout — 0 FT to 19 FT; Bentonite — 19 FT to 21 FT; Sand — 21 FT to 28 FT	Remarks:

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
475						CL	GRAVEL FILL CLAY, RED BROWN, SLIGHTLY SILTY, VERY FIRM, SLIGHTLY MOIST		Flush Mount
470	5								
465	10						CLAY, RED BROWN, VERY SILTY, SLIGHTLY SANDY, FINE GRAIN, SLIGHTLY MOIST		
460	15								
455	20					SC	SAND, BROWN, FINE TO MEDIUM GRAIN, SILTY, SLIGHTLY CLAYEY, SATURATED		
450	25					GC	GRAVEL, BROWN, FINE TO MEDIUM GRAIN, SANDY, FINE TO MEDIUM GRAIN, SOME COARSE GRAVEL, SILTY, SATURATED		

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS.GPJ; 10/31/14

ENVIRON

2118 N. Tyler Road, Wichita, Kansas 67212

Site ID: IW-141		Date(s): **10/14/2014**	
Location: **Fort Smith, Arkansas**			
Logged By: **M. Eddings**		Checked By: **K. Stonestreet**	
Contractor: **Able Environmental**		Purpose: **Injection Well**	
Drilling Method: **Hollow Stem Auger**		GS Elevation: **473.70 amsl**	TOC Elevation: **473.36 amsl**
Sampling Method: **Soil Cuttings**		North: **369015.98**	East: **590822.69**
Well Construction:		Borehole Dia.: **8.25 inches**	Total Depth: **27.0 feet**
Blank Casing: Sch 40 PVC 2 Inch	0 FT to 22 FT	Project Number: **3434446A**	
Screen: Sch. 40 0.10 PVC	22 FT to 27 FT	Project Name: **Whirlpool Corporation**	
Annular Fill: Cement Grout Bentonite Sand	0 FT to 18 FT 18 FT to 20 FT 20 FT to 27 FT	Remarks:	

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
							GRAVEL FILL		Flush Mount
470	5					CL	CLAY, RED BROWN, FIRM, SLIGHTLY SILTY, SLIGHTLY MOIST		
465	10								
460	15						CLAY, RED BROWN, SILTY, SLIGHTLY FIRM, SLIGHTLY MOIST		
455	20								
450	25					GC	GRAVEL, BROWN, FINE TO MEDIUM GRAIN, SAND, FINE TO COARSE GRAIN, VERY SILTY, CLAYEY, SATURATED		
445									

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS.GPJ; 10/31/14

ENVIRON

2118 N. Tyler Road, Wichita, Kansas 67212

Site ID: IW-142	Date(s): **10/15/2014**
Location: **Fort Smith, Arkansas**	
Logged By: **M. Eddings**	Checked By: **K. Stonestreet**
Contractor: **Able Environmental**	Purpose: **Injection Well**
Drilling Method: **Hollow Stem Auger**	GS Elevation: **473.20 amsl** / TOC Elevation: **472.95 amsl**
Sampling Method: **HSA Continuous Sampler**	North: **369012.86** / East: **590848.79**
Well Construction:	Borehole Dia.: **8.25 inches** / Total Depth: **25.0 feet**
Blank Casing: Sch 40 PVC 2 Inch — 0 FT to 20 FT	Project Number: **3434446A**
Screen: Sch. 40 0.10 PVC — 20 FT to 25 FT	Project Name: **Whirlpool Corporation**
Annular Fill: Cement Grout — 0 FT to 16 FT; Bentonite — 16 FT to 18 FT; Sand — 18 FT to 25 FT	Remarks:

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
							CONCRETE		Flush Mount
							GRAVEL FILL		
470	0	5		89		CL	CLAY, RED BROWN, SILTY, FIRM, SLIGHTLY MOIST		
	5			160.5					
465		5		354.6					
	10						CLAY, RED BROWN, VERY SILTY, SLIGHTLY SANDY, FINE GRAIN, SLIGHTLY MOIST		
				6930					
460		5		>15000					
	15								
				4578					
455		5		914.8			CLAY, RED BROWN, VERY SILTY, SANDY, SATURATED		
	20					GC	GRAVEL, BROWN, FINE TO COARSE GRAIN, SAND, FINE TO MEDIUM GRAIN, SLIGHTLY SILTY, SLIGHTLY CLAYEY		
				66.5					
450		5		220			GRAVEL, BROWN, FINE TO COARSE GRAIN, SAND, FINE TO MEDIUM GRAIN, VERY SILTY, CLAYEY		
	25								
445									

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS.GPJ; 10/31/14

ENVIRON

2118 N. Tyler Road, Wichita, Kansas 67212

Site ID: IW-143	Date(s): **10/15/2014**
Location: **Fort Smith, Arkansas**	
Logged By: **M. Eddings**	Checked By: **K. Stonestreet**
Contractor: **Able Environmental**	Purpose: **Injection Well**
Drilling Method: **Hollow Stem Auger**	GS Elevation: **473.30 amsl** / TOC Elevation: **473.03 amsl**
Sampling Method: **Soil Cuttings**	North: **369012.01** / East: **590873.18**
Borehole Dia.: **8.25 inches**	Total Depth: **25.0 feet**
Project Number: **3434446A**	
Project Name: **Whirlpool Corporation**	
Remarks:	

Well Construction:

Blank Casing:	Sch 40 PVC 2 Inch	0 FT to 20 FT
Screen:	Sch. 40 0.10 PVC	20 FT to 25 FT
Annular Fill:	Cement Grout	0 FT to 16 FT
	Bentonite	16 FT to 18 FT
	Sand	18 FT to 25 FT

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
							CONCRETE		Flush Mount
							GRAVEL FILL		
470						CL	CLAY, RED BROWN, SILTY, FIRM, SLIGHTLY MOIST		
	5								
465									
	10						CLAY, RED BROWN, VERY SILTY, SLIGHTLY SANDY, FINE GRAIN, SLIGHTLY MOIST		
460									
	15								
455									
	20					GC	GRAVEL, BROWN, FINE TO COARSE GRAIN, SAND, FINE TO MEDIUM GRAIN, SILTY, SLIGHTLY CLAYEY, SATURATED		
450									
	25						GRAVEL, BROWN, FINE TO COARSE GRAIN, SAND, FINE TO MEDIUM GRAIN, VERY SILTY, VERY CLAYEY, SATURATED		
445									

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS.GPJ; 10/31/14

ENVIRON

2118 N. Tyler Road, Wichita, Kansas 67212

Site ID: IW-144	Date(s): **10/15/2014**
Location: **Fort Smith, Arkansas**	
Logged By: **M. Eddings**	Checked By: **K. Stonestreet**
Contractor: **Able Environmental**	Purpose: **Injection Well**
Drilling Method: **Hollow Stem Auger**	GS Elevation: **473.29 amsl** / TOC Elevation: **473.04 amsl**
Sampling Method: **HSA Continuous Sampler**	North: **369013.39** / East: **590900.97**
Well Construction:	Borehole Dia.: **8.25 inches** / Total Depth: **25.0 feet**
Blank Casing: Sch 40 PVC 2 Inch — 0 FT to 20 FT	Project Number: **3434446A**
Screen: Sch. 40 0.10 PVC — 20 FT to 25 FT	Project Name: **Whirlpool Corporation**
Annular Fill: Cement Grout — 0 FT to 16 FT; Bentonite — 16 FT to 18 FT; Sand — 18 FT to 25 FT	Remarks:

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
							CONCRETE		Flush Mount
							GRAVEL FILL		
470		5		7263		CL	CLAY, RED BROWN, FIRM, VERY STIFF, SLIGHTLY MOIST		
	5			4214					
465		5		2764					
	10			1658			CLAY, RED BROWN, VERY SILTY, SANDY, FINE GRAIN, SOFT, SATURATED AT 19' BGS		
460		5		969					
	15			174.3					
455		5		210.6					
	20			63.6		GC	GRAVEL, BROWN, FINE TO COARSE GRAIN, SAND, FINE TO MEDIUM GRAIN, SILTY, CLAYEY, SATURATED		
450		3					GRAVEL, BROWN, FINE TO COARSE GRAIN, SAND, FINE TO MEDIUM GRAIN, VERY SILTY, VERY CLAYEY, SATURATED		
	25								
445									

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS.GPJ; 10/31/14

ENVIRON

2118 N. Tyler Road, Wichita, Kansas 67212

Site ID: IW-147		Date(s): **10/13/2014**	
Location: **Fort Smith, Arkansas**			
Logged By: **M. Eddings**		Checked By: **K. Stonestreet**	
Contractor: **Able Environmental**		Purpose: **Injection Well**	
Drilling Method: **Hollow Stem Auger**		GS Elevation: **473.30 amsl**	TOC Elevation: **473.13 amsl**
Sampling Method: **HSA Continuous Sampler**		North: **368992.77**	East: **590782.42**
Well Construction:		Borehole Dia.: **8.25 inches**	Total Depth: **25.0 feet**
Blank Casing: Sch 40 PVC 2 Inch	0 FT to 20 FT	Project Number: **3434446A**	
Screen: Sch. 40 0.10 PVC	20 FT to 25 FT	Project Name: **Whirlpool Corporation**	
Annular Fill: Cement Grout Bentonite Sand	0 FT to 16 FT 16 FT to 18 FT 18 FT to 25 FT	Remarks:	

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	USCS Code	Material Description	Water Level	Well Construction
				55.9		CONCRETE CLAY FILL, DARK GRAY, FIRM		Flush Mount
470		5		94	CL	CLAY, RED BROWN AND GRAY, VERY SILTY, SLIGHTLY MOIST		
	5					CLAY, RED BROWN, FIRM, SLIGHTLY SILTY, SLIGHTLY MOIST		
				60.4				
465		5		290.8				
	10							
				3305				
460		5		3760				
	15							
				>15000		CLAY, RED BROWN, SILTY, SLIGHTLY FIRM, SLIGHTLY MOIST		
455		5		11675				
	20					CLAY, RED BROWN, VERY SILTY, SANDY, FINE GRAIN, SLIGHTLY MOIST		
					GC	GRAVEL, BROWN, FINE TO COARSE GRAIN, SAND, FINE TO MEDIUM GRAIN, SILTY, SLIGHTLY CLAYEY, SATURATED		
				2037				
450		5		941.9				
	25					GRAVEL, BROWN, FINE TO COARSE GRAIN, SAND, FINE TO MEDIUM GRAIN, VERY SILTY, VERY CLAYEY, SATURATED		
445								

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS.GPJ; 10/31/14

ENVIRON

2118 N. Tyler Road, Wichita, Kansas 67212

Site ID: IW-148	Date(s): **10/13/2014**
Location: **Fort Smith, Arkansas**	
Logged By: **M. Eddings**	Checked By: **K. Stonestreet**
Contractor: **Able Environmental**	Purpose: **Injection Well**
Drilling Method: **Hollow Stem Auger**	GS Elevation: **473.42 amsl** / TOC Elevation: **473.14 amsl**
Sampling Method: **Soil Cuttings**	North: **368991.86** / East: **590832.97**
Borehole Dia.: **8.25 inches**	Total Depth: **25.0 feet**
Project Number: **3434446A**	
Project Name: **Whirlpool Corporation**	
Remarks:	

Well Construction:

Blank Casing:	Sch 40 PVC 2 Inch	0 FT to 20 FT
Screen:	Sch. 40 0.10 PVC	20 FT to 25 FT
Annular Fill:	Cement Grout	0 FT to 16 FT
	Bentonite	16 FT to 18 FT
	Sand	18 FT to 25 FT

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	Graphic Log	USCS Code	Material Description	Water Level	Well Construction
							CONCRETE		Flush Mount
470	0					CL	CLAY, RED BROWN, FIRM, SLIGHTLY SILTY, SLIGHTLY MOIST		
	5								
465									
	10								
460									
	15						CLAY, RED BROWN, SILTY, SLIGHTLY SANDY, FINE GRAIN, SOFT, SLIGHTLY MOIST		
455									
	20					GC	GRAVEL, BROWN, FINE TO COARSE GRAIN, SAND, FINE TO MEDIUM GRAIN, CLAYEY, SLIGHTLY SILTY, SATURATED		
450									
	25						GRAVEL, BROWN, FINE TO COARSE GRAIN, SAND, FINE TO MEDIUM GRAIN, VERY SILTY, VERY CLAYEY, SATURATED		
445									

Report: WELL_LOG_REV_MKE; File: WHIRLPOOL_LOGS.GPJ; 10/31/14

ENVIRON

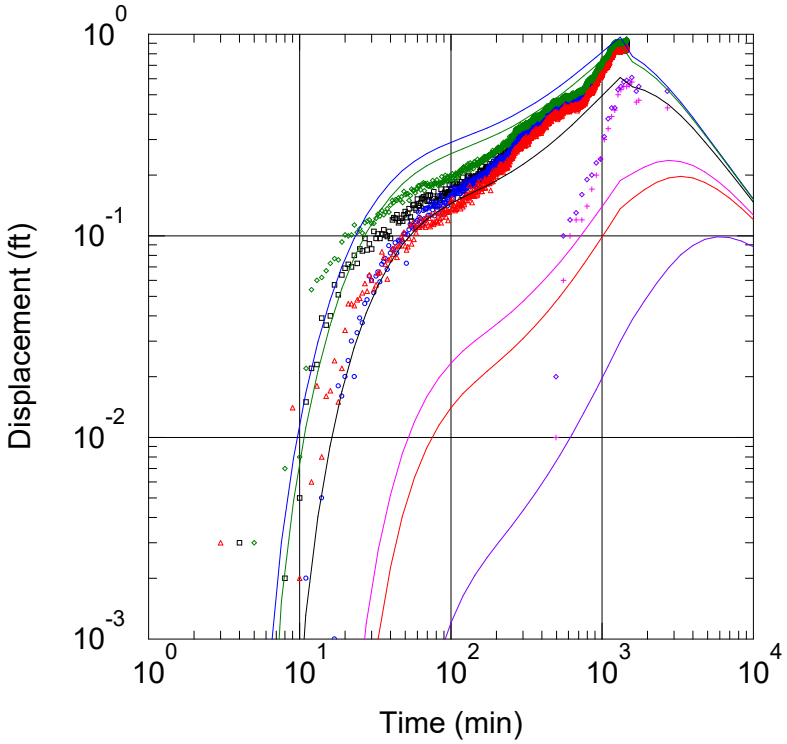
2118 N. Tyler Road, Wichita, Kansas 67212

Site ID: DP-8	Date(s): **1/7/2014**
Location: **Fort Smith, Arkansas**	
Logged By: **N. Zurweller**	
Consulting Firm: **ENVIRON**	Checked By: **K. Stonestreet**
Contractor: **Mohawk Drilling**	Purpose: **Soil Boring**
Drilling Method: **Direct Push**	Datum: **NAVD88** Elevation: **473.33 amsl**
Sampling Method: **Continuous Sampler**	North: **369014.03** East: **590830.47**
Remarks:	Borehole Dia.: **2.5 inches** Total Depth: **24.0 feet**
	Project Number: **3433253A**
	Project Name: **Whirlpool Corporation**

Elevation (ft)	Depth (ft)	Recovery (feet)	Sample No.	PID (ppm)	USCS Code	Material Description
				49.4		SILTY CLAY AND GRAVEL FILL, DARK GRAYISH BROWN, ANGULAR GRAVEL UP TO 1", STIFF, VERY SLIGHTLY MOIST (FROZEN)
		3.7		815.4	CL	SILTY CLAY, STRONG BROWN, WITH LIGHT GRAY MOTTLING, WITH BLACK STREAKING, STIFF, PLASTIC, SLIGHTLY MOIST
470						SILTY CLAY, STRONG BROWN, WITH LIGHT GRAY MOTTLING, SUBROUNDED GRAVEL UP TO 1/4", VERY STIFF, PLASTIC, SLIGHTLY MOIST, SLIGHT SOLVENT ODOR
	5	4	DP-08 (5-5.5)	1555		
				1090		
465				1029		SANDY CLAY, REDDISH BROWN, TRACE LIGHT GRAY, SOME SUBROUNDED GRAVEL UP TO 1/8", SOME BLACK NODULES, FINE SAND, SLIGHTLY COHESIVE, SLIGHTLY STIFF, SLIGHTLY MOIST
	10	4	DP-08 (11-11.5)	3898		SILTY CLAY, STRONG BROWN, SOME LIGHT GRAY, SOME BLACK STREAKING, STIFF, PLASTIC, SLIGHTLY MOIST, SOLVENT ODOR
460				3673		SILTY CLAY, STRONG BROWN, WITH LIGHT GRAY, SOME BLACK STREAKING, STIFF, PLASTIC, SLIGHTLY MOIST, SOLVENT ODOR
	15	3.7		1989		
				4090		SANDY CLAY, LIGHT GRAYISH BROWN, VERY FINE SAND, COHESIVE, SLIGHTLY MOIST, SOLVENT ODOR
455		3.7	DP-08 (18.5-19)	15000	SC	CLAYEY SAND, STRONG BROWN, SOME LIGHT GRAY, COHESIVE, SLIGHTLY PLASTIC, VERY MOIST, SOLVENT ODOR
	20			87.1	GC	SAND AND GRAVEL, STRONG BROWN, WITH CLAY, SUBROUNDED GRAVEL UP TO 1", MEDIUM SAND, COHESIVE, SLIGHTLY STIFF, VERY MOIST TO WET, SOLVENT ODOR
		4				
450				38.9		
	25					
445						

Report: SOIL_LOG_REV_1_MKE2; File: TUESDAY_12PM_NZ2.GPJ; 05/02/14

Appendix B
Pumping Test Analysis Report



WELL TEST ANALYSIS

Data Set: \...\Whirpool_2019_Pumping_Test_v4.aqt
Date: 01/20/20 Time: 16:46:37

PROJECT INFORMATION

Company: Ramboll
Client: Whirpool
Project: 1690015112
Location: Forth Smith, Arkansas
Test Well: RW-1
Test Date: 12/05/2019

AQUIFER DATA

Saturated Thickness: 19.5 ft Anisotropy Ratio (Kz/Kr): 1.055

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
RW-1	590828.09	369013.35

Observation Wells

Well Name	X (ft)	Y (ft)
IW-132	590835.02	369039.94
IW-142	590848.89	369012.91
IW-143	590873.23	369011.95
IW-144	590900.94	369013.29
IW-147	590782.42	368992.85
IW-148	590832.82	368991.84

SOLUTION

Aquifer Model: Unconfined Solution Method: Moench

T = 37.98 ft^2/day S = 0.005567
Sy = 0.09633 Kz/Kr = 1.055
Sw = 0.225 r(w) = 0.334 ft
r(c) = 0.167 ft alpha = 1.0E+30 min^{-1}

Appendix C
Laboratory Analytical Reports

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 26, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on November 23, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Haley Ahlers, Ramboll
Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60322267001	**TMW-36B-201911**	Water	11/22/19 11:10	11/23/19 14:08
60322267002	**RW-1-201911**	Water	11/22/19 13:20	11/23/19 14:08
60322267003	**HP-15-DEEP**	Water	11/22/19 13:35	11/23/19 14:08
60322267004	**TB-04**	Water	11/22/19 08:00	11/23/19 14:08

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60322267001	**TMW-36B-201911**	EPA 5030B/8260	PGH	38	PASI-K
60322267002	**RW-1-201911**	EPA 5030B/8260	PGH	38	PASI-K
60322267003	**HP-15-DEEP**	EPA 5030B/8260	PGH	38	PASI-K
60322267004	**TB-04**	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll_AR
Date: November 26, 2019

General Information:
4 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 624790

B: Analyte was detected in the associated method blank.

- BLANK for HBN 624790 [MSV/1024 (Lab ID: 2547452)
  - Trichloroethene

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 624437

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 624790

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Sample: TMW-36B-201911 **Lab ID: 60322267001** Collected: 11/22/19 11:10 Received: 11/23/19 14:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**9.1J**	ug/L	10.0	3.3	1		11/25/19 14:16	67-64-1	
Benzene	**3.7**	ug/L	1.0	0.079	1		11/25/19 14:16	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/25/19 14:16	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/25/19 14:16	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/25/19 14:16	74-83-9	
2-Butanone (MEK)	**6.8J**	ug/L	10.0	0.70	1		11/25/19 14:16	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/25/19 14:16	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/25/19 14:16	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/25/19 14:16	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/25/19 14:16	75-00-3	
Chloroform	**0.51J**	ug/L	1.0	0.10	1		11/25/19 14:16	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/25/19 14:16	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/25/19 14:16	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/25/19 14:16	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/25/19 14:16	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/25/19 14:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/25/19 14:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/25/19 14:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/25/19 14:16	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/25/19 14:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/25/19 14:16	10061-02-6	
Ethylbenzene	**12.9**	ug/L	1.0	0.12	1		11/25/19 14:16	100-41-4	
2-Hexanone	**8.1J**	ug/L	10.0	1.0	1		11/25/19 14:16	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/25/19 14:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	**9.2J**	ug/L	10.0	0.56	1		11/25/19 14:16	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/25/19 14:16	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/25/19 14:16	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/25/19 14:16	127-18-4	
Toluene	**41.1**	ug/L	1.0	0.14	1		11/25/19 14:16	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/25/19 14:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/25/19 14:16	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/25/19 14:16	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/25/19 14:16	75-01-4	
Xylene (Total)	**60.1**	ug/L	3.0	0.34	1		11/25/19 14:16	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	97	%	80-120		1		11/25/19 14:16	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	77-122		1		11/25/19 14:16	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/25/19 14:16	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/25/19 14:16		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Sample: RW-1-201911 **Lab ID: 60322267002** Collected: 11/22/19 13:20 Received: 11/23/19 14:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**8.1J**	ug/L	10.0	3.3	1		11/25/19 14:31	67-64-1	
Benzene	**0.41J**	ug/L	1.0	0.079	1		11/25/19 14:31	71-43-2	
Bromodichloromethane	**0.28J**	ug/L	1.0	0.17	1		11/25/19 14:31	75-27-4	
Bromoform	**0.52J**	ug/L	1.0	0.21	1		11/25/19 14:31	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/25/19 14:31	74-83-9	
2-Butanone (MEK)	**2.6J**	ug/L	10.0	0.70	1		11/25/19 14:31	78-93-3	
Carbon disulfide	**0.60J**	ug/L	5.0	0.16	1		11/25/19 14:31	75-15-0	
Carbon tetrachloride	**0.28J**	ug/L	1.0	0.084	1		11/25/19 14:31	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/25/19 14:31	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/25/19 14:31	75-00-3	
Chloroform	**11.3**	ug/L	1.0	0.10	1		11/25/19 14:31	67-66-3	
Chloromethane	**0.28J**	ug/L	1.0	0.16	1		11/25/19 14:31	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/25/19 14:31	124-48-1	
1,1-Dichloroethane	**1.1**	ug/L	1.0	0.097	1		11/25/19 14:31	75-34-3	
1,2-Dichloroethane	**0.47J**	ug/L	1.0	0.14	1		11/25/19 14:31	107-06-2	B
1,1-Dichloroethene	**69.6**	ug/L	1.0	0.22	1		11/25/19 14:31	75-35-4	
cis-1,2-Dichloroethene	**1260**	ug/L	1000	170	1000		11/25/19 14:59	156-59-2	
trans-1,2-Dichloroethene	**13.5**	ug/L	1.0	0.17	1		11/25/19 14:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/25/19 14:31	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/25/19 14:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/25/19 14:31	10061-02-6	
Ethylbenzene	**0.46J**	ug/L	1.0	0.12	1		11/25/19 14:31	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/25/19 14:31	591-78-6	
Methylene Chloride	**4.3**	ug/L	1.0	0.27	1		11/25/19 14:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	**0.94J**	ug/L	10.0	0.56	1		11/25/19 14:31	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/25/19 14:31	100-42-5	
1,1,2,2-Tetrachloroethane	**3.5**	ug/L	1.0	0.31	1		11/25/19 14:31	79-34-5	
Tetrachloroethene	**17.8**	ug/L	1.0	0.22	1		11/25/19 14:31	127-18-4	
Toluene	**9.3**	ug/L	1.0	0.14	1		11/25/19 14:31	108-88-3	
1,1,1-Trichloroethane	**14.6**	ug/L	1.0	0.12	1		11/25/19 14:31	71-55-6	
1,1,2-Trichloroethane	**1.9**	ug/L	1.0	0.10	1		11/25/19 14:31	79-00-5	
Trichloroethene	**54600**	ug/L	1000	170	1000		11/25/19 14:59	79-01-6	
Vinyl chloride	**93.1**	ug/L	1.0	0.11	1		11/25/19 14:31	75-01-4	
Xylene (Total)	**2.5J**	ug/L	3.0	0.34	1		11/25/19 14:31	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	95	%	80-120		1		11/25/19 14:31	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/25/19 14:31	17060-07-0	
Toluene-d8 (S)	103	%	80-120		1		11/25/19 14:31	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/25/19 14:31		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Sample: HP-15-DEEP **Lab ID: 60322267003** Collected: 11/22/19 13:35 Received: 11/23/19 14:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**19.0**	ug/L	10.0	3.3	1		11/25/19 14:45	67-64-1	
Benzene	**0.31J**	ug/L	1.0	0.079	1		11/25/19 14:45	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/25/19 14:45	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/25/19 14:45	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/25/19 14:45	74-83-9	
2-Butanone (MEK)	**7.0J**	ug/L	10.0	0.70	1		11/25/19 14:45	78-93-3	
Carbon disulfide	**0.43J**	ug/L	5.0	0.16	1		11/25/19 14:45	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/25/19 14:45	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/25/19 14:45	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/25/19 14:45	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/25/19 14:45	67-66-3	
Chloromethane	**0.18J**	ug/L	1.0	0.16	1		11/25/19 14:45	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/25/19 14:45	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/25/19 14:45	75-34-3	
1,2-Dichloroethane	**0.15J**	ug/L	1.0	0.14	1		11/25/19 14:45	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/25/19 14:45	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/26/19 08:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/25/19 14:45	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/25/19 14:45	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/25/19 14:45	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/25/19 14:45	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/25/19 14:45	100-41-4	
2-Hexanone	**1.7J**	ug/L	10.0	1.0	1		11/25/19 14:45	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/25/19 14:45	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/25/19 14:45	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/25/19 14:45	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/25/19 14:45	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/25/19 14:45	127-18-4	
Toluene	**0.53J**	ug/L	1.0	0.14	1		11/25/19 14:45	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/25/19 14:45	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/25/19 14:45	79-00-5	
Trichloroethene	**0.53J**	ug/L	1.0	0.17	1		11/26/19 08:31	79-01-6	B
Vinyl chloride	**0.27J**	ug/L	1.0	0.11	1		11/25/19 14:45	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/25/19 14:45	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	95	%	80-120		1		11/25/19 14:45	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	77-122		1		11/25/19 14:45	17060-07-0	
Toluene-d8 (S)	105	%	80-120		1		11/25/19 14:45	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/25/19 14:45		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Sample: TB-04 **Lab ID: 60322267004** Collected: 11/22/19 08:00 Received: 11/23/19 14:08 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/25/19 14:02	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/25/19 14:02	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/25/19 14:02	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/25/19 14:02	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/25/19 14:02	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/25/19 14:02	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/25/19 14:02	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/25/19 14:02	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/25/19 14:02	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/25/19 14:02	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/25/19 14:02	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/25/19 14:02	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/25/19 14:02	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/25/19 14:02	75-34-3	
1,2-Dichloroethane	**0.14J**	ug/L	1.0	0.14	1		11/25/19 14:02	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/25/19 14:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/25/19 14:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/25/19 14:02	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/25/19 14:02	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/25/19 14:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/25/19 14:02	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/25/19 14:02	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/25/19 14:02	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/25/19 14:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/25/19 14:02	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/25/19 14:02	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/25/19 14:02	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/25/19 14:02	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/25/19 14:02	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/25/19 14:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/25/19 14:02	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		11/25/19 14:02	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/25/19 14:02	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/25/19 14:02	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	95	%	80-120		1		11/25/19 14:02	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	77-122		1		11/25/19 14:02	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/25/19 14:02	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/25/19 14:02		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

QC Batch: 624437 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60322267001, 60322267002, 60322267003, 60322267004

METHOD BLANK: 2546342 Matrix: Water
Associated Lab Samples: 60322267001, 60322267002, 60322267003, 60322267004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/25/19 13:33	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/25/19 13:33	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/25/19 13:33	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/25/19 13:33	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/25/19 13:33	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/25/19 13:33	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/25/19 13:33	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/25/19 13:33	
2-Hexanone	ug/L	ND	10.0	1.0	11/25/19 13:33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/25/19 13:33	
Acetone	ug/L	ND	10.0	3.3	11/25/19 13:33	
Benzene	ug/L	ND	1.0	0.079	11/25/19 13:33	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/25/19 13:33	
Bromoform	ug/L	ND	1.0	0.21	11/25/19 13:33	
Bromomethane	ug/L	ND	5.0	0.32	11/25/19 13:33	
Carbon disulfide	ug/L	ND	5.0	0.16	11/25/19 13:33	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/25/19 13:33	
Chlorobenzene	ug/L	ND	1.0	0.13	11/25/19 13:33	
Chloroethane	ug/L	ND	1.0	0.42	11/25/19 13:33	
Chloroform	ug/L	ND	1.0	0.10	11/25/19 13:33	
Chloromethane	ug/L	ND	1.0	0.16	11/25/19 13:33	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/25/19 13:33	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/25/19 13:33	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/25/19 13:33	
Ethylbenzene	ug/L	ND	1.0	0.12	11/25/19 13:33	
Methylene Chloride	ug/L	ND	1.0	0.27	11/25/19 13:33	
Styrene	ug/L	ND	1.0	0.15	11/25/19 13:33	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/25/19 13:33	
Toluene	ug/L	ND	1.0	0.14	11/25/19 13:33	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/25/19 13:33	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/25/19 13:33	
Trichloroethene	ug/L	ND	1.0	0.17	11/25/19 13:33	
Vinyl chloride	ug/L	ND	1.0	0.11	11/25/19 13:33	
Xylene (Total)	ug/L	ND	3.0	0.34	11/25/19 13:33	
1,2-Dichloroethane-d4 (S)	%	96	77-122		11/25/19 13:33	
4-Bromofluorobenzene (S)	%	93	80-120		11/25/19 13:33	
Toluene-d8 (S)	%	101	80-120		11/25/19 13:33	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

LABORATORY CONTROL SAMPLE: 2546343

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.7	104	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	20.5	103	71-122	
1,1,2-Trichloroethane	ug/L	20	21.1	106	76-123	
1,1-Dichloroethane	ug/L	20	20.3	101	78-117	
1,1-Dichloroethene	ug/L	20	20.4	102	74-122	
1,2-Dichloroethane	ug/L	20	19.3	97	73-120	
1,2-Dichloropropane	ug/L	20	20.2	101	78-115	
2-Butanone (MEK)	ug/L	100	87.9	88	54-133	
2-Hexanone	ug/L	100	93.2	93	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	100	100	62-130	
Acetone	ug/L	100	84.3	84	54-130	
Benzene	ug/L	20	21.3	107	80-120	
Bromodichloromethane	ug/L	20	20.2	101	78-121	
Bromoform	ug/L	20	22.1	111	62-137	
Bromomethane	ug/L	20	20.3	102	41-145	
Carbon disulfide	ug/L	20	20.7	103	64-119	
Carbon tetrachloride	ug/L	20	21.1	105	77-122	
Chlorobenzene	ug/L	20	22.3	111	80-123	
Chloroethane	ug/L	20	19.7	99	60-146	
Chloroform	ug/L	20	20.3	102	81-116	
Chloromethane	ug/L	20	15.1	76	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.6	103	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.8	104	78-118	
Dibromochloromethane	ug/L	20	22.2	111	73-128	
Ethylbenzene	ug/L	20	21.0	105	80-120	
Methylene Chloride	ug/L	20	22.1	111	80-126	
Styrene	ug/L	20	22.4	112	85-120	
Tetrachloroethene	ug/L	20	23.1	115	77-121	
Toluene	ug/L	20	22.3	112	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.5	98	80-120	
trans-1,3-Dichloropropene	ug/L	20	20.7	104	76-123	
Trichloroethene	ug/L	20	20.0	100	80-121	
Vinyl chloride	ug/L	20	19.9	100	46-162	
Xylene (Total)	ug/L	60	65.6	109	80-120	
1,2-Dichloroethane-d4 (S)	%			96	77-122	
4-Bromofluorobenzene (S)	%			95	80-120	
Toluene-d8 (S)	%			103	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

QC Batch: 624790
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60322267003

METHOD BLANK: 2547452
Matrix: Water
Associated Lab Samples: 60322267003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/26/19 08:17	
Trichloroethene	ug/L	0.26J	1.0	0.17	11/26/19 08:17	
1,2-Dichloroethane-d4 (S)	%	95	77-122		11/26/19 08:17	
4-Bromofluorobenzene (S)	%	95	80-120		11/26/19 08:17	
Toluene-d8 (S)	%	102	80-120		11/26/19 08:17	

LABORATORY CONTROL SAMPLE: 2547453

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/L	20	21.8	109	80-120	
Trichloroethene	ug/L	20	20.6	103	80-121	
1,2-Dichloroethane-d4 (S)	%			101	77-122	
4-Bromofluorobenzene (S)	%			96	80-120	
Toluene-d8 (S)	%			101	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 624437

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 624790

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60322267

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60322267001	**TMW-36B-201911**	EPA 5030B/8260	624437		
60322267002	**RW-1-201911**	EPA 5030B/8260	624437		
60322267003	**HP-15-DEEP**	EPA 5030B/8260	624437		
60322267003	**HP-15-DEEP**	EPA 5030B/8260	624790		
60322267004	**TB-04**	EPA 5030B/8260	624437		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60322267

60322267

Client Name: Ramboll

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 778249477233 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: T296 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): As-read 1.3 Corr. Factor +0.0 Corrected 1.3

Date and initials of person examining contents: VB 11/23/19

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☑Yes ☐No ☐N/A	NEXT DAY
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☑No ☐N/A	NO tests listed on COC
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☐Yes ☐No ☑N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☑Yes ☐No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution: Per Haley, analyze for 8260.

Project Manager Review: Jami Church 11/23/19 Date:

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	Rambol
Address:	
Email To:	
Phone:	Fax:
Requested Due Date/TAT:	Next Day

Section B Required Project Information:

Report To:	Tamara Hause-Knight
Copy To:	Nick Zurweller/Haley Ahlers
Purchase Order No.:	
Project Name:	Whirlpool
Project Number:	

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	603222607	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	TMW-36B-201911	WT	G	11/22/19	1110	n/a	n/a		3				X								001
2	RW-1-201911	↓	↓	↓	1320	↓	↓		↓				↓								002
3	HP-15-Deep	↓	↓	↓	1335	↓	↓		↓				↓								003
4	TB-04								2				↓								004
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Haley Ahlers/Rambol	11/22/19	1820	Valerie B/Pace	11/23/19	0905	1.3	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Haley Ahlers

SIGNATURE of SAMPLER: Haley Ahlers

DATE Signed (MM/DD/YY): 11/22/19

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 20, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323607

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on December 07, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Haley Ahlers, Ramboll
Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323607

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323607

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60323607001	**RW-1-201912-1**	Water	12/06/19 03:05	12/07/19 08:30
60323607002	**RW-1-201912-2**	Water	12/06/19 14:30	12/07/19 08:30
60323607003	**TB-03**	Water	12/06/19 08:00	12/07/19 08:30

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323607

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60323607001	**RW-1-201912-1**	EPA 5030B/8260	CJC, PGH	38	PASI-K
60323607002	**RW-1-201912-2**	EPA 5030B/8260	CJC, PGH	38	PASI-K
60323607003	**TB-03**	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323607

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll_AR
Date: December 20, 2019

General Information:
3 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 628461

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 628462

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323607

Sample: RW-1-201912-1 **Lab ID: 60323607001** Collected: 12/06/19 03:05 Received: 12/07/19 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	7.4	1		12/18/19 21:55	67-64-1	
Benzene	ND	ug/L	1.0	0.13	1		12/18/19 21:55	71-43-2	
Bromodichloromethane	**0.40J**	ug/L	1.0	0.14	1		12/18/19 21:55	75-27-4	
Bromoform	**1.7**	ug/L	1.0	0.28	1		12/18/19 21:55	75-25-2	
Bromomethane	ND	ug/L	5.0	2.8	1		12/18/19 21:55	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1.8	1		12/18/19 21:55	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.086	1		12/18/19 21:55	75-15-0	
Carbon tetrachloride	**1.7**	ug/L	1.0	0.070	1		12/18/19 21:55	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.17	1		12/18/19 21:55	108-90-7	
Chloroethane	ND	ug/L	1.0	0.83	1		12/18/19 21:55	75-00-3	
Chloroform	**6.4**	ug/L	1.0	0.25	1		12/18/19 21:55	67-66-3	
Chloromethane	ND	ug/L	1.0	0.51	1		12/18/19 21:55	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		12/18/19 21:55	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.12	1		12/18/19 21:55	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.33	1		12/18/19 21:55	107-06-2	
1,1-Dichloroethene	**41.2**	ug/L	1.0	0.14	1		12/18/19 21:55	75-35-4	
cis-1,2-Dichloroethene	**427J**	ug/L	1000	170	1000		12/16/19 17:22	156-59-2	
trans-1,2-Dichloroethene	**10.4**	ug/L	1.0	0.082	1		12/18/19 21:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		12/18/19 21:55	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		12/18/19 21:55	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		12/18/19 21:55	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.20	1		12/18/19 21:55	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.6	1		12/18/19 21:55	591-78-6	
Methylene Chloride	**3.2**	ug/L	1.0	0.35	1		12/18/19 21:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1.3	1		12/18/19 21:55	108-10-1	
Styrene	ND	ug/L	1.0	0.19	1		12/18/19 21:55	100-42-5	
1,1,2,2-Tetrachloroethane	**1.3**	ug/L	1.0	0.23	1		12/18/19 21:55	79-34-5	
Tetrachloroethene	**9.2**	ug/L	1.0	0.14	1		12/18/19 21:55	127-18-4	
Toluene	**2.4**	ug/L	1.0	0.17	1		12/18/19 21:55	108-88-3	
1,1,1-Trichloroethane	**13.8**	ug/L	1.0	0.12	1		12/18/19 21:55	71-55-6	
1,1,2-Trichloroethane	**2.2**	ug/L	1.0	0.10	1		12/18/19 21:55	79-00-5	
Trichloroethene	**6860**	ug/L	1000	170	1000		12/16/19 17:22	79-01-6	
Vinyl chloride	**53.7**	ug/L	1.0	0.17	1		12/18/19 21:55	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		12/18/19 21:55	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		12/18/19 21:55	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		12/18/19 21:55	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		12/18/19 21:55	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		12/18/19 21:55		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323607

Sample: RW-1-201912-2 **Lab ID: 60323607002** Collected: 12/06/19 14:30 Received: 12/07/19 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	7.4	1		12/18/19 22:10	67-64-1	
Benzene	ND	ug/L	1.0	0.13	1		12/18/19 22:10	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.14	1		12/18/19 22:10	75-27-4	
Bromoform	**1.8**	ug/L	1.0	0.28	1		12/18/19 22:10	75-25-2	
Bromomethane	ND	ug/L	5.0	2.8	1		12/18/19 22:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1.8	1		12/18/19 22:10	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.086	1		12/18/19 22:10	75-15-0	
Carbon tetrachloride	**1.7**	ug/L	1.0	0.070	1		12/18/19 22:10	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.17	1		12/18/19 22:10	108-90-7	
Chloroethane	ND	ug/L	1.0	0.83	1		12/18/19 22:10	75-00-3	
Chloroform	**6.0**	ug/L	1.0	0.25	1		12/18/19 22:10	67-66-3	
Chloromethane	ND	ug/L	1.0	0.51	1		12/18/19 22:10	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		12/18/19 22:10	124-48-1	
1,1-Dichloroethane	**0.59J**	ug/L	1.0	0.12	1		12/18/19 22:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.33	1		12/18/19 22:10	107-06-2	
1,1-Dichloroethene	**42.9**	ug/L	1.0	0.14	1		12/18/19 22:10	75-35-4	
cis-1,2-Dichloroethene	**583J**	ug/L	1000	170	1000		12/16/19 23:18	156-59-2	
trans-1,2-Dichloroethene	**8.3**	ug/L	1.0	0.082	1		12/18/19 22:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		12/18/19 22:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		12/18/19 22:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		12/18/19 22:10	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.20	1		12/18/19 22:10	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.6	1		12/18/19 22:10	591-78-6	
Methylene Chloride	**2.5**	ug/L	1.0	0.35	1		12/18/19 22:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1.3	1		12/18/19 22:10	108-10-1	
Styrene	ND	ug/L	1.0	0.19	1		12/18/19 22:10	100-42-5	
1,1,2,2-Tetrachloroethane	**1.5**	ug/L	1.0	0.23	1		12/18/19 22:10	79-34-5	
Tetrachloroethene	**8.9**	ug/L	1.0	0.14	1		12/18/19 22:10	127-18-4	
Toluene	**2.3**	ug/L	1.0	0.17	1		12/18/19 22:10	108-88-3	
1,1,1-Trichloroethane	**15.0**	ug/L	1.0	0.12	1		12/18/19 22:10	71-55-6	
1,1,2-Trichloroethane	**2.1**	ug/L	1.0	0.10	1		12/18/19 22:10	79-00-5	
Trichloroethene	**26300**	ug/L	1000	170	1000		12/16/19 23:18	79-01-6	
Vinyl chloride	**40.3**	ug/L	1.0	0.17	1		12/18/19 22:10	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		12/18/19 22:10	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		12/18/19 22:10	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	77-122		1		12/18/19 22:10	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		12/18/19 22:10	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		12/18/19 22:10		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323607

Sample: TB-03 **Lab ID: 60323607003** Collected: 12/06/19 08:00 Received: 12/07/19 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		12/16/19 19:59	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		12/16/19 19:59	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		12/16/19 19:59	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		12/16/19 19:59	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		12/16/19 19:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		12/16/19 19:59	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		12/16/19 19:59	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		12/16/19 19:59	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		12/16/19 19:59	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		12/16/19 19:59	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		12/16/19 19:59	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		12/16/19 19:59	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		12/16/19 19:59	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		12/16/19 19:59	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		12/16/19 19:59	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		12/16/19 19:59	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		12/16/19 19:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		12/16/19 19:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		12/16/19 19:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		12/16/19 19:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		12/16/19 19:59	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		12/16/19 19:59	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		12/16/19 19:59	591-78-6	
Methylene Chloride	**1.2**	ug/L	1.0	0.27	1		12/16/19 19:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		12/16/19 19:59	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		12/16/19 19:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		12/16/19 19:59	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		12/16/19 19:59	127-18-4	
Toluene	**1.4**	ug/L	1.0	0.14	1		12/16/19 19:59	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		12/16/19 19:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		12/16/19 19:59	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.17	1		12/16/19 19:59	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		12/16/19 19:59	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		12/16/19 19:59	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		12/16/19 19:59	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	77-122		1		12/16/19 19:59	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		12/16/19 19:59	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		12/16/19 19:59		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323607

QC Batch: 628461
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60323607001

METHOD BLANK: 2561761 Matrix: Water
Associated Lab Samples: 60323607001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	12/16/19 13:35	
Trichloroethene	ug/L	ND	1.0	0.17	12/16/19 13:35	
1,2-Dichloroethane-d4 (S)	%	97	77-122		12/16/19 13:35	
4-Bromofluorobenzene (S)	%	98	80-120		12/16/19 13:35	
Toluene-d8 (S)	%	98	80-120		12/16/19 13:35	

LABORATORY CONTROL SAMPLE: 2561762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/L	20	20.6	103	80-120	
Trichloroethene	ug/L	20	19.6	98	80-121	
1,2-Dichloroethane-d4 (S)	%			98	77-122	
4-Bromofluorobenzene (S)	%			98	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323607

QC Batch: 628462
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60323607002, 60323607003

METHOD BLANK: 2561763
Matrix: Water
Associated Lab Samples: 60323607002, 60323607003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	12/16/19 19:44	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	12/16/19 19:44	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	12/16/19 19:44	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	12/16/19 19:44	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	12/16/19 19:44	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	12/16/19 19:44	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	12/16/19 19:44	
2-Butanone (MEK)	ug/L	0.86J	10.0	0.70	12/16/19 19:44	
2-Hexanone	ug/L	ND	10.0	1.0	12/16/19 19:44	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	12/16/19 19:44	
Acetone	ug/L	ND	10.0	3.3	12/16/19 19:44	
Benzene	ug/L	ND	1.0	0.079	12/16/19 19:44	
Bromodichloromethane	ug/L	ND	1.0	0.17	12/16/19 19:44	
Bromoform	ug/L	ND	1.0	0.21	12/16/19 19:44	
Bromomethane	ug/L	ND	5.0	0.32	12/16/19 19:44	
Carbon disulfide	ug/L	ND	5.0	0.16	12/16/19 19:44	
Carbon tetrachloride	ug/L	ND	1.0	0.084	12/16/19 19:44	
Chlorobenzene	ug/L	ND	1.0	0.13	12/16/19 19:44	
Chloroethane	ug/L	ND	1.0	0.42	12/16/19 19:44	
Chloroform	ug/L	ND	1.0	0.10	12/16/19 19:44	
Chloromethane	ug/L	ND	1.0	0.16	12/16/19 19:44	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	12/16/19 19:44	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	12/16/19 19:44	
Dibromochloromethane	ug/L	ND	1.0	0.15	12/16/19 19:44	
Ethylbenzene	ug/L	ND	1.0	0.12	12/16/19 19:44	
Methylene Chloride	ug/L	ND	1.0	0.27	12/16/19 19:44	
Styrene	ug/L	ND	1.0	0.15	12/16/19 19:44	
Tetrachloroethene	ug/L	ND	1.0	0.22	12/16/19 19:44	
Toluene	ug/L	ND	1.0	0.14	12/16/19 19:44	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	12/16/19 19:44	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	12/16/19 19:44	
Trichloroethene	ug/L	ND	1.0	0.17	12/16/19 19:44	
Vinyl chloride	ug/L	ND	1.0	0.11	12/16/19 19:44	
Xylene (Total)	ug/L	ND	3.0	0.34	12/16/19 19:44	
1,2-Dichloroethane-d4 (S)	%	100	77-122		12/16/19 19:44	
4-Bromofluorobenzene (S)	%	96	80-120		12/16/19 19:44	
Toluene-d8 (S)	%	101	80-120		12/16/19 19:44	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323607

LABORATORY CONTROL SAMPLE: 2561764

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.4	102	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	18.6	93	71-122	
1,1,2-Trichloroethane	ug/L	20	20.0	100	76-123	
1,1-Dichloroethane	ug/L	20	20.5	102	78-117	
1,1-Dichloroethene	ug/L	20	19.8	99	74-122	
1,2-Dichloroethane	ug/L	20	18.7	94	73-120	
1,2-Dichloropropane	ug/L	20	19.8	99	78-115	
2-Butanone (MEK)	ug/L	100	84.5	85	54-133	
2-Hexanone	ug/L	100	93.9	94	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	98.6	99	62-130	
Acetone	ug/L	100	85.8	86	54-130	
Benzene	ug/L	20	19.9	99	80-120	
Bromodichloromethane	ug/L	20	20.5	102	78-121	
Bromoform	ug/L	20	18.3	91	62-137	
Bromomethane	ug/L	20	16.4	82	41-145	
Carbon disulfide	ug/L	20	20.8	104	64-119	
Carbon tetrachloride	ug/L	20	20.6	103	77-122	
Chlorobenzene	ug/L	20	20.4	102	80-123	
Chloroethane	ug/L	20	19.1	95	60-146	
Chloroform	ug/L	20	20.0	100	81-116	
Chloromethane	ug/L	20	18.4	92	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.9	99	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.9	105	78-118	
Dibromochloromethane	ug/L	20	21.2	106	73-128	
Ethylbenzene	ug/L	20	20.5	102	80-120	
Methylene Chloride	ug/L	20	21.4	107	80-126	
Styrene	ug/L	20	21.0	105	85-120	
Tetrachloroethene	ug/L	20	21.4	107	77-121	
Toluene	ug/L	20	20.1	101	80-120	
trans-1,2-Dichloroethene	ug/L	20	20.7	104	80-120	
trans-1,3-Dichloropropene	ug/L	20	20.5	103	76-123	
Trichloroethene	ug/L	20	18.8	94	80-121	
Vinyl chloride	ug/L	20	19.8	99	46-162	
Xylene (Total)	ug/L	60	61.9	103	80-120	
1,2-Dichloroethane-d4 (S)	%			99	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323607

QC Batch: 629217
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60323607001, 60323607002

METHOD BLANK: 2564119
Matrix: Water
Associated Lab Samples: 60323607001, 60323607002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	12/18/19 21:40	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.23	12/18/19 21:40	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	12/18/19 21:40	
1,1-Dichloroethane	ug/L	ND	1.0	0.12	12/18/19 21:40	
1,1-Dichloroethene	ug/L	ND	1.0	0.14	12/18/19 21:40	
1,2-Dichloroethane	ug/L	ND	1.0	0.33	12/18/19 21:40	
1,2-Dichloropropane	ug/L	ND	1.0	0.14	12/18/19 21:40	
2-Butanone (MEK)	ug/L	ND	10.0	1.8	12/18/19 21:40	
2-Hexanone	ug/L	ND	10.0	1.6	12/18/19 21:40	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	1.3	12/18/19 21:40	
Acetone	ug/L	ND	10.0	7.4	12/18/19 21:40	
Benzene	ug/L	ND	1.0	0.13	12/18/19 21:40	
Bromodichloromethane	ug/L	ND	1.0	0.14	12/18/19 21:40	
Bromoform	ug/L	ND	1.0	0.28	12/18/19 21:40	
Bromomethane	ug/L	ND	5.0	2.8	12/18/19 21:40	
Carbon disulfide	ug/L	ND	5.0	0.086	12/18/19 21:40	
Carbon tetrachloride	ug/L	ND	1.0	0.070	12/18/19 21:40	
Chlorobenzene	ug/L	ND	1.0	0.17	12/18/19 21:40	
Chloroethane	ug/L	ND	1.0	0.83	12/18/19 21:40	
Chloroform	ug/L	ND	1.0	0.25	12/18/19 21:40	
Chloromethane	ug/L	ND	1.0	0.51	12/18/19 21:40	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.18	12/18/19 21:40	
Dibromochloromethane	ug/L	ND	1.0	0.15	12/18/19 21:40	
Ethylbenzene	ug/L	ND	1.0	0.20	12/18/19 21:40	
Methylene Chloride	ug/L	ND	1.0	0.35	12/18/19 21:40	
Styrene	ug/L	ND	1.0	0.19	12/18/19 21:40	
Tetrachloroethene	ug/L	ND	1.0	0.14	12/18/19 21:40	
Toluene	ug/L	ND	1.0	0.17	12/18/19 21:40	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.082	12/18/19 21:40	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.18	12/18/19 21:40	
Vinyl chloride	ug/L	ND	1.0	0.17	12/18/19 21:40	
Xylene (Total)	ug/L	ND	3.0	0.42	12/18/19 21:40	
1,2-Dichloroethane-d4 (S)	%	106	77-122		12/18/19 21:40	
4-Bromofluorobenzene (S)	%	100	80-120		12/18/19 21:40	
Toluene-d8 (S)	%	100	80-120		12/18/19 21:40	

LABORATORY CONTROL SAMPLE: 2564120

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	21.0	105	79-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323607

LABORATORY CONTROL SAMPLE: 2564120

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,2,2-Tetrachloroethane	ug/L	20	19.0	95	71-122	
1,1,2-Trichloroethane	ug/L	20	19.9	99	76-123	
1,1-Dichloroethane	ug/L	20	19.6	98	78-117	
1,1-Dichloroethene	ug/L	20	20.7	104	74-122	
1,2-Dichloroethane	ug/L	20	19.1	96	73-120	
1,2-Dichloropropane	ug/L	20	19.5	97	78-115	
2-Butanone (MEK)	ug/L	100	94.5	94	54-133	
2-Hexanone	ug/L	100	101	101	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	106	106	62-130	
Acetone	ug/L	100	97.8	98	54-130	
Benzene	ug/L	20	20.1	101	80-120	
Bromodichloromethane	ug/L	20	19.7	99	78-121	
Bromoform	ug/L	20	18.8	94	62-137	
Bromomethane	ug/L	20	18.2	91	41-145	
Carbon disulfide	ug/L	20	19.6	98	64-119	
Carbon tetrachloride	ug/L	20	19.7	98	77-122	
Chlorobenzene	ug/L	20	19.5	98	80-123	
Chloroethane	ug/L	20	16.7	84	60-146	
Chloroform	ug/L	20	20.5	102	81-116	
Chloromethane	ug/L	20	16.3	81	29-154	
cis-1,3-Dichloropropene	ug/L	20	20.0	100	78-118	
Dibromochloromethane	ug/L	20	19.6	98	73-128	
Ethylbenzene	ug/L	20	20.3	102	80-120	
Methylene Chloride	ug/L	20	19.6	98	80-126	
Styrene	ug/L	20	19.8	99	85-120	
Tetrachloroethene	ug/L	20	21.3	107	77-121	
Toluene	ug/L	20	19.1	96	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.7	98	80-120	
trans-1,3-Dichloropropene	ug/L	20	19.0	95	76-123	
Vinyl chloride	ug/L	20	17.1	86	46-162	
Xylene (Total)	ug/L	60	59.7	99	80-120	
1,2-Dichloroethane-d4 (S)	%			104	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			101	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323607

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 628461

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 628462

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323607

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60323607001	**RW-1-201912-1**	EPA 5030B/8260	628461		
60323607001	**RW-1-201912-1**	EPA 5030B/8260	629217		
60323607002	**RW-1-201912-2**	EPA 5030B/8260	628462		
60323607002	**RW-1-201912-2**	EPA 5030B/8260	629217		
60323607003	**TB-03**	EPA 5030B/8260	628462		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

WO# : 60323607

60323607

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY

nber or

Company: Ramboll	Billing Information:
Address:	
Report To: Tamara House-Knight	Email To: Tamara House-Knight
Copy To: Nick Zurweller / Haley Ahlers	Site Collection Info/Address:
Customer Project Name/Number: Whirlpool	State: / County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Haley Ahlers	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature): Haley Ahlers	Turnaround Date Required: Standard Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses: 8260 Full List VOC

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	(Y)	N	NA
Custody Signatures Present	(Y)	N	NA
Collector Signature Present	(Y)	N	NA
Bottles Intact	(Y)	N	NA
Correct Bottles	(Y)	N	NA
Sufficient Volume	(Y)	N	NA
Samples Received on Ice	(Y)	N	NA
VOA - Headspace Acceptable	(Y)	N	NA
USDA Regulated Soils	Y	N	(NA)
Samples in Holding Time	(Y)	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips:			
Sample pH Acceptable	Y	N	(NA)
pH Strips:			
Sulfide Present	Y	N	(NA)
Lead Acetate Strips:			

LAB USE ONLY:
Lab Sample # / Comments:

60323607001
60323607002

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns
RW-1-201912-1	GW	G	12/6/19	0305	n/a	n/a		3
RW-1-201912-2	↓	↓	↓	1430	↓	↓		↓
TB-03								2

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used: Bubble Bags

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 778676820905 2444552

Samples received via: (FEDEX) UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: T298
Cooler 1 Temp Upon Receipt: 2.0 °C
Cooler 1 Therm Corr. Factor: +0.0 °C
Cooler 1 Corrected Temp: 2.0 °C
Comments:

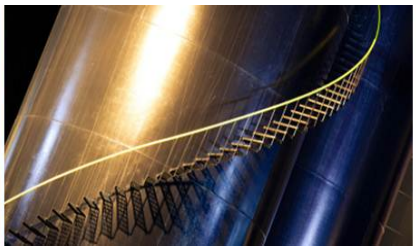
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Haley Ahlers/Ramboll	12/6/19 1745	Victor B Pace	12/7/19 0630
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: (Y) N NA
(HCL) MeOH TSP Other

Non Conformance(s): YES / (NO)

Page: _____ of: _____


ATTACHMENT H

2019 In-situ Chemical Reduction Report

Whirlpool Facility
Fort Smith, Arkansas

Prepared for:
Whirlpool Corporation

Prepared by:
Ramboll US Corporation

Date:
February 2020

Project Number:
1690015112

RAMBOLL

Table of Contents

Page

1 Introduction 1

2 December 2019 Injection Activities 1
2.1 Temporary Injection Point Installation 1
2.2 Mobilization and ISCR Reagent Preparation 1
2.3 ISCR Reagent Injection 1
2.3.1 Northeast Parking Lot 2
2.3.2 6427 Jenny Lind Road Property 2

3 Monitoring 3
3.1 Baseline Groundwater Monitoring 3
3.2 Injection Monitoring 3
3.3 Routine Groundwater Monitoring 3

4 Results 5
4.1 December 2019 Injections 5
4.1.1 Potentiometric Surface 5
4.1.2 Field Water Quality Parameters 5
4.2 July–August 2018 Injections 6
4.2.1 Field Water Quality Parameters 6
4.2.2 Laboratory Analytical Results 7

5 Summary 9

LIST OF TABLES

Table 1: ISCR Water Quality
Table 2: Laboratory Analytical Results Groundwater
Table 3: Summary of TCE Concentrations - Treatment Zones
Table 4: Injection Summary (December 6-8, 2019)

LIST OF FIGURES

Figure 1: 2019 Treatment Zone Injection Points Northeast Plume
Figure 2: 2018 Treatment Zone Injection Points North Plume (TCE Concentrations October 2019)
Figure 3: 2018Treatment Zone Injection Points South Plume (TCE Concentrations October 2019)
Figure 4: 2018 Treatment Zone Injection Points Southeastern Plume (TCE Concentrations October 2019)

LIST OF APPENDICES

Appendix A: IET Report
Appendix B: Reagent Safety Data Sheets
Appendix C: Laboratory Analytical Reports

1 Introduction

An in-situ chemical reduction (ISCR) injection event was performed at the former Whirlpool site on Jenny Lind Road in Fort Smith, Arkansas, December 6-8, 2019. This ISCR injection event was performed in accordance with the 2019 Action Plan, Former Whirlpool Facility, Fort Smith, Arkansas, October 23, 2019 (Work Plan) at the northeast corner parking lot on the subject property and on the down-gradient 6427 Jenny Lind Road property.

The Arkansas Department of Environmental Quality (ADEQ) previously reviewed the Inventory Requirements for "Authorized By Rule" Class V Wells, Whirlpool Corporation, Fort Smith, Arkansas, prepared by Ramboll dated August 31, 2015. ADEQ determined that the described injection activities would be "authorized by rule" as described in 40 CFR 144.84 and summarized in a letter from ADEQ dated September 14, 2015. Ramboll requested approval for the Work Plan from the ADEQ from the Underground Injection Control (UIC) Program and received approval for the injections on December 5, 2019. ADEQ's Technical Branch provided comments on the Action Plan on November 26, 2019, and Ramboll responded to ADEQ comments on the Action Plan on December 2, 2019.

During this event, the ISCR reagent consisting of ProvectIR™ (antimethanogenic ISCR Reagent), zero-valent iron (ZVI), nutrient, hydrolyzed kelp, magnesium hydroxide, calcium propionate, sodium sulfite, yeast extract, vitamins and additional antimethanogenic reagent (AMR) was injected into the contaminated groundwater bearing zone at the northeast portion of the North Plume (Figure 1).

The ISCR technology employed during this supplemental event and the previous 2015 and 2018 events combines abiotic chemical reduction and anaerobic bioremediation for the treatment of chlorinated volatile organic compounds (cVOCs) in groundwater. These physical, chemical and biological processes combine to produce a reducing environment in the saturated zone stimulating chemical and microbiological dechlorination of trichloroethene (TCE). ISCR reagents are typically effective for timeframes of years; therefore, the evaluation of data associated with this supplemental injection is anticipated to continue for a similar period of time.

The total injected ISCR reagent contained 4,468 pounds of ZVI; 365 pounds of nutrient; 1,525 pounds of hydrolyzed kelp; 3,625 pounds of calcium propionate; 480 pounds of sodium sulfite; 7,352 pounds of Provect-IR; 365 pounds of yeast extract; 487 pounds of magnesium hydroxide; 114 gallons of anti-methanogenic reagent (AMR) compound; 495 grams of Vitamin B12 and 3,435 grams of Vitamin B2 suspended in water to create approximately 5,760 gallons of treatment solution consisting of ISCR reagent and potable water (municipal source for water) that was injected into the saturated zone at 37 temporary injection points (20 in the northeast parking lot and 17 on the property at 6427 Jenny Lind Road).

Subsurface conditions in the northeast treatment area (MW-91 and MW-99) are similar to those farther north in the north plume areas treated in 2018. Based upon the results of previous ISCR injection events in the North Plume Area the ISCR reagent was modified for the northeast treatment area with magnesium hydroxide for additional pH control, the particle size of the ZVI

was increased to enhance abiotic activity and longevity and Provectus AMR compound was added to enhance methane inhibition and propionate application was decreased to also reduce methane generation. The reagent mix was also designed considering the total quantity that could likely be injected into the subsurface to minimize daylighting based on past experience, groundwater gradient and current volatile organic compound (VOC) concentrations.

In comparison to the North Plume Treatment Area N1, the ISCR reagent injected in December 2019 onsite near MW-91 [April 2019 TCE 454 micrograms per liter (µg/L)] was modified by:

- Increasing the ZVI particle size and quantity, to enhance abiotic reactions, from approximately 75 pounds per injection point to approximately 150 pounds per injection point.
- The Provect IR product was reduced from approximately 250 pounds of ZVI per injection point to approximately 205 pounds per injection point.
- The propionate was reduced from 200 pounds per injection point to 50 pounds per injection point to reduce methane production.

Magnesium oxide (15 pounds per point) was added for additional pH adjustment and approximately 3 gallons of Provectus AMR compound was added to each point for additional methane control. The permeable subsurface material near MW-91 was very limited, concerns regarding daylighting were greater (some daylighting did occur) and concentrations were much lower than at MW-91, the reagent mix was modified accordingly. The ISCR reagent injected in December 2019 onsite near MW- 99 (April 2019 TCE 23.6 µg/L) was as follows:

- 75 pounds per injection point.
- Provect IR product approximately 200 pounds per injection point.
- Propionate 50 pounds per injection point. Magnesium oxide (10 pounds per point) was added for additional pH adjustment and approximately 3 gallons of Provectus AMR compound was added to each point for additional methane control.

Innovative Environmental Technologies, Inc. (IET), 6071 Easton Road, Pipersville, Pennsylvania, provided materials, equipment and personnel necessary to inject the ISCR reagent into the subsurface environment at the selected locations and assisted Ramboll personnel in monitoring the progress of the injection event.

This report summarizes the activities performed and data collected during and prior to the 2019 Injection Event as well as the ongoing data collection efforts at the wells affected by the 2018 ISCR injections. Locations for the 2019 Injections are included in Figure 1 and locations for the 2018 Injections are included in Figures 2 through 4.

For reference, the injection activities for the 2015 pilot and 2018 supplemental injections are summarized in the Fourth Quarter 2015 ISCR Pilot Study Report and the 2018 ISCR Event Report.

2 December 2019 Injection Activities

The supplemental injection activities performed in December 2019 are described below.

2.1 Temporary Injection Point Installation

The treatment zones were established in the following locations (Figure 1):

- Northeast portion of the Former Whirlpool Property North Parking Lot (PRB-NE-1); and
- Western portion of the property at 6427 Jenny Lind Road (PRB-NE-2).

The temporary injection points for the treatment zones were installed by IET using direct push (AMS Power Probe 9500-VTR) equipment.

Prior to injection activities, Arkansas One-Call Utility Locating Services were notified and a private utility locator was contracted to identify underground utilities and other potential obstructions in the injection areas.

The direct push drill string utilized a specialized stainless steel screen assembly designed to facilitate horizontal injection for bottom up injections. In general, the two foot injection screen was advanced to depths targeting intervals within the upper shallow moist to wet clayey sand and the underlying saturated clayey sand to clayey gravel. Each treatment zone consisted of two injection points spaced approximately 15 feet apart and offset laterally by 7.5 feet so that the injection points between rows were centered to optimize groundwater contact with the ISCR reagent as it flows through the treatment zone (a radius of influence of 10 feet or greater has been observed during ISCR and in-situ chemical oxidation (ISCO) events in 2014, 2015 and 2018). The spacing of the injection points within each treatment zone required field modification due to utilities and subsurface conditions. At some locations multiple attempts, sometimes requiring off-set or additional locations, were required to complete the injection due to tight soils or issues with surface leakage. Additional details for each injection point location are described in the IET report provided in Appendix A.

2.2 Mobilization and ISCR Reagent Preparation

The specialized injection equipment systems were contained in custom box trailers and transported to the site by the injection contractor IET. The ISCR reagent material was delivered by common carrier. Potable water used during the injection event was obtained from a fire hydrant near the intersection of Jenny Lind Place and Ingersoll Avenue (i.e. municipal water). Supplies were staged in the northeast parking area at Whirlpool. The reagent mixing and preparation took place within the self-contained systems in the box trailers mobilized to the site by IET. Safety data sheets (SDSs) for the reagents are provided in Appendix B. Safety procedures outlined in the site-specific Health and Safety Plan (HASP) were followed during reagent preparation.

2.3 ISCR Reagent Injection

The ISCR reagent was prepared as a slurry (using potable water) and delivered into the subsurface using compressed nitrogen and pneumatic diaphragm pumps. Compressed nitrogen

is used for subsurface pathway development and as a carrier for the ISCR reagents as opposed to compressed air to avoid introducing oxygen into the subsurface. During injection the instantaneous flow rate and pressure at the injection pump was monitored and recorded for each injection point. The monitoring data for each point and a detailed description of the injection process is described in detail in Appendix A. The following is a generalized summary of the injection activities:

2.3.1 Northeast Parking Lot

In the northeast portion of the north parking lot, 20 temporary injection points were installed in one treatment zone location positioned generally perpendicular to groundwater flow in this area and located up-gradient of the leading edge of the groundwater plume as depicted on Figure 1. In total, 3,200 gallons of treatment solution consisting of ISCR reagent and potable water was injected into two separate depth intervals within the saturated zone approximately 18-20 feet below ground surface (bgs) and 21-23 feet bgs (see Table 4 for depth intervals for injections at specific locations).

2.3.2 6427 Jenny Lind Road Property

In the western portion of the 6427 Jenny Lind Road property, 17 temporary injection points were installed in one treatment zone location positioned generally perpendicular to groundwater flow in this area and located at and down-gradient of the plume's leading edge as depicted on Figure 1. In total, 2,560 gallons of treatment solution consisting of ISCR reagent and potable water was injected in two separate depth intervals within the saturated zone consisting of approximately 17-19 feet bgs and 20 to 22 feet bgs (see Table 4 for depth intervals for injections at specific locations).

Site conditions required the injection program to be modified at a limited number of injection locations. In areas where surfacing of injection material was an issue, the amount of material injected into the shallow interval was reduced and more material was injected into the deep interval. One injection point was added to distribute the reagent that could not be applied in previous injection points due to surfacing. Table 4 provides of summary of injection details for specific injection points.

Immediately following injection, each injection point was sealed with hydrated bentonite.

3 Monitoring

Monitoring during the 2019 Injection Event included baseline groundwater monitoring for select wells in the respective injection areas and monitoring of injection pressures and injection volumes during the injection process. Water quality parameters were assed in nearby groundwater monitoring wells to assess the radius of influence during and after the injection process.

Groundwater monitoring wells influenced by the previous 2018 Injection Event were monitored as part of the 2019 Annual Groundwater Sampling Event performed during the week of October 21, 2019.

3.1 Baseline Groundwater Monitoring

Baseline groundwater monitoring was conducted on December 3, 2019, at existing monitoring wells located in the treatment zones and included the following:

- Measuring and recording the depth to water (DTW).
- Conducting low flow sampling while monitoring field parameters, including water level, temperature, pH, specific conductivity, dissolved oxygen (DO) and oxidation reduction potential (ORP). The field parameters were stabilized prior to collecting a groundwater sample.
- Measuring ferrous iron following field parameter stabilization.
- Collecting groundwater samples and submitting the samples to PACE Analytical Laboratory for analysis of VOCs, anions (chloride, sulfate, nitrate), total organic carbon (TOC), dissolved organic carbon (DOC), iron (total and ferric), dissolved gasses (ethene, ethane, methane) and volatile fatty acids (VFAs).

Baseline monitoring was conducted at MW-91 (northeast parking lot) and MW-99 (6427 Jenny Lind Road).

3.2 Injection Monitoring

Injection pressures, ISCR reagent slurry volumes and delivery times were monitored and recorded during the injection process. This information is included in Appendix A. During and after injections, field water quality parameters were collected periodically from MW-91 and MW-99. The field water quality data included water levels, temperature, conductivity, DO, pH and ORP. Once the injections were complete, a ferrous iron reading was taken following the stabilization of the monitoring wells. Groundwater samples for field water quality parameters were collected using a peristaltic pump and a flow though cell. The water quality instrumentation was calibrated daily per the manufacture's specifications.

3.3 Routine Groundwater Monitoring

The results of the 2019 Annual Groundwater Sampling Event are summarized in the 2019 Annual Report.

The 2019 Annual Groundwater Sampling event included monitoring at the following locations utilized to assess the influence from the 2018 ISCR Injection Event:

- North Plume (arrays treatment zone-N1, treatment zone-N2, treatment zone-N3 and 61R Ph II): TMW-10, TMW-21, TMW-22, MW-61R and MW-194;
- South Plume (arrays treatment zone-S1, treatment zone-S2, treatment zone-S3 and TMW-25): TMW-16, TMW-26, MW-186 and TMW-32; and
- Southeast Plume (arrays treatment zone-SE1): MW-185 and TMW-34.

4 Results

The monitoring results for the baseline groundwater monitoring event, 2019 Injection Event monitoring and 2019 Annual Groundwater Sampling event are summarized below. The field water quality parameter measurements are presented in Table 1. A summary of the baseline groundwater monitoring laboratory analytical results is presented in Table 2 and assessment regarding the change in mass of TCE present in groundwater at the various treatment areas as a result of the ISCR injections in Table 3. Associated laboratory analytical reports are provided in Appendix C.

Water quality and analytical data approximately 450 days post the 2018 ISCR Injection Event are detailed below.

4.1 December 2019 Injections

4.1.1 Potentiometric Surface

Baseline water levels at MW-91 and MW-99 were measured and recorded prior to ISCR reagent injection. Both wells exhibited a brief rise in groundwater elevations during injections with MW-91 seeing a rise of 3 feet and MW-99 a rise of 1.1 feet (see Table 1).

4.1.2 Field Water Quality Parameters

Field water quality parameters were measured and recorded periodically from MW-91 and MW-99 to assess radius of influence during injections. Field water quality parameters during and after the ISCR reagent injections are presented in Table 1. Notable observations regarding the data collected over these periods are as follows:

- Specific conductivity increased by an order of magnitude at both monitoring wells after injections when compared to baseline measurements. Specifically, it increased from 443 micro-Siemens per centimeter (µS/cm) to 4,153 µS/cm and 212 µS/cm to 6,378 µS/cm at MW-91 and MW-99, respectively.
- ORP values in both MW-91 and MW-99 decreased during and after injection activity when compared to baseline measurements. While neither well had a negative value (indicative of a reducing environment) these results suggest that ORP is trending downward.
- Field measured ferrous iron readings increased from 0 milligrams per liter (mg/L) to 2.91 mg/L at MW-91 and from 0 mg/L to 1.48 mg/L at MW-99 after injections.

In addition to the field water quality information summarized above, color changes in groundwater in the wells were observed during injection activity.

The 90 day post ISCR Injection Event will occur during the 2020 Semi-Annual Sampling Event.

4.2 July–August 2018 Injections

The groundwater quality and analytical data from the 2019 Annual Groundwater Sampling Event were used to assess the 2018 ISCR Injection Event.

Analytical results for MW-61R and TMW-34 indicated higher concentrations of TCE than anticipated during the 2019 Annual Groundwater Sampling Event. MW-61R and TMW-34 were re-developed and resampled for VOCs only during the December 2019 Injection Event. These updated water quality and analytical data values are included in Tables 1, 2 and 3 and included in the discussion of the analytical results presented below.

4.2.1 Field Water Quality Parameters

Field water quality parameters were measured and recorded at approximately 450 days post the 2018 ISCR Injection Event. Recorded data for ORP, conductivity, DO and iron concentrations are presented below.

MW-61R Treatment Zone

- ORP measured values were negative in all ISCR monitoring wells (e.g. -95 mV at MW-61R, -166 mV at TMW-10 and -124 mV at TMW-11). Elevated specific conductivity values continued to be observed in TMW-10 and TMW-11. DO measurements in all the wells were very low, measuring at or below 0.1 mg/L. Ferrous iron concentrations continue to exceed baseline values at 2 to >3 mg/L.

North Plume Treatment Zone

- ORP measured values continue to be negative in all ISCR monitoring wells [e.g. -112 millivolts (mV) at TMW-22R , -212 mV at TMW-21 and -54 at MW-194]. Specific conductivity increases over baseline measurements continued to be observed in all north plume wells included in the ISCR monitoring plan. DO measurements in all the monitoring wells were very low, measuring at <0.5 mg/L. Ferrous iron concentrations continue to exceed baseline values at 2 to >3 mg/L.

South Plume Treatment Zone

- ORP measured values were negative in all ISCR wells (e.g. -71 mV at TMW-32 to -215 mV at TMW-30). Specific conductivity readings over baseline values continued to be observed in all wells included in the ISCR monitoring plan excluding TMW-32. DO measurements in all the monitoring wells were very low, measuring at <0.5 mg/L. Ferrous iron concentrations continue to exceed baseline values at 1.5 to >3 mg/L.

Southeast Plume Treatment Zone

- Field groundwater water quality changes were not expected at up-gradient well MW-185. ORP measured values were positive, specific conductivity values were low (271 µS/cm) and DO was low at 0.59 mg/L. TMW-34 was installed November 5, 2018, a few days before site monitoring took place at this location in November 2018. Currently, the groundwater at TMW-34 is continuing to exhibit a reducing environment (ORP of -21

mV), the DO is very low at 0.10 mg/L and the conductivity is higher than the up-gradient well MW-185. Ferrous iron concentrations exceed the baseline value (ND) at 1.5 mg/L.

4.2.2 Laboratory Analytical Results

Table 2 presents the laboratory analytical results for VOCs and attenuation parameters for the monitoring wells designated in the 2018 ISCR Work Plan to evaluate the progress for the ISCR reagent injections. Only baseline data is available for the monitoring wells designated for in the ISCR Work Plan for the 2019 injections.

The laboratory results in Table 2 are provided for the 2018 injections approximately 90, 245 and 450 days post the 2018 ISCR Injection Event. The 90 and 245 day post injection data indicate that the ISCR reagent injection promoted a significant increase in total iron, sulfate, TOC, DOC, methane and VFA (acetate, propionate, butyrate and pyruvate) in comparison to the baseline data. The increases in total iron, ferric iron, sulfate and ferrous iron were associated with the ZVI and ProvectIR™ products and the various nutrients and vitamins. Likewise, the ISCR reagent injection also resulted in a significant increase in TOC, which was subsequently utilized by the indigenous microbial populations to produce VFA. In addition, dissolved gases concentrations of methane, ethane and ethene were present at concentrations indicating geochemistry was ideal for the reductive process to continue.

The results in Table 2 for the 2018 injections approximately 450 days post injection indicate that total iron remains elevated over baseline values in most wells. TOC, DOC and methane remain elevated at all locations with the exception of MW-61R, TMW-11 and TMW-34. Initial sulfate increases over baseline values (indicative of the ISCR reagent affecting the well) have decreased at many locations with the exception of TMW-32, TMW-34, MW-185 and MW-194. VFA (acetate, propionate, butyrate and pyruvate) remain elevated in one or more of the fatty acids in comparison to the baseline data in all wells with the exception of TMW-34. The elevated concentrations in total iron, TOC (utilized by the indigenous microbial populations to produce VFA) and dissolved gases concentrations of methane, ethane and ethene indicate geochemistry is ideal for the reductive process to continue. The reductions in sulfate levels are also indicative of reducing conditions.

Table 3 compares July 2018 baseline TCE concentrations to TCE concentrations approximately 450 days post injection (490 days post-injection for MW-61R and TMW-34). The percent reduction in TCE concentrations was calculated for individual wells where ISCR reagent injections occurred. The following results indicate TCE concentration decreases in the majority of monitoring wells:

- In the MW-61R Treatment Zone, the TCE concentration decreased from 91.1 µg/L to 8.6 µg/L at TMW-10, which was an 91% decrease in concentration. The TCE concentration

increased at MW-61R from 7.0 µg/L to 15.0 µg/L[1]. Ramboll will produce a work plan to address this increase in concentration as part of the 2020 Semi-Annual Report.

- In the North Plume Treatment Zone, TCE concentration decreases ranged from 19% at MW-194 to 96% at TMW-21. The sum of TCE concentrations in TMW-21, TMW-22 and MW-194 decreased from an approximate baseline of 1,037 µg/L to approximately 179 µg/L in this zone, which represents approximately a 83% decrease in concentration.
- In the South Plume Treatment Zone decreases in TCE concentrations ranged from 55% in TMW-26 to 99% in TMW-16. The sum of TCE concentrations in TMW-16, TMW-26, TMW-32 and MW-186 decreased from an approximate baseline of 1,185 µg/L to approximately 81 µg/L in this zone, which represents approximately a 93% decrease in concentration.
- In the Southeast Treatment Zone, TCE concentrations at MW-185 increased 11.7 µg/L during baseline to 52.7 µg/L. TMW-34 was not installed during baseline sampling but the TCE concentration increased from 7.4 µg/L in November 2018 to 26.7 µg/L.

Increases in daughter product concentrations relative to TCE concentrations in TMW-10 at the MW-61R Treatment Zone; TMW-21 and TMW-22/22R in the North Plume Treatment Zone; MW-186, TMW-16, TMW-25, TMW-26 and TMW-32 in the South Plume Treatment Zone and TMW-34 and MW-185 at the Southeast Treatment Zone were observed in comparison to baseline levels indicating that the ISCR reagent injections enhanced reductive dechlorination in the radius of treatment.

Continued groundwater monitoring will occur at the above locations. As discussed in correspondence in 2019, Whirlpool is assessing a more sustainable and longer lasting remedy or remedies to supplement the remediation efforts performed at the site in 2014 and remedial efforts at plume boundaries during the last few years. Bench scale and field scale tests to supplement remediation efforts commenced in October 2019. A strategy to reduce TCE concentrations at MW-61R and TMW-34 will be presented within the 2020 Semi-Annual Report.

[1] Following the pilot injections in 2015, concentrations in this well were maintained at or below 5 µg/L for six of seven monitoring events to April of 2018. The Phase II injections completed in the pilot area were focused on TMW-10 and up-gradient from MW-61R. It was thought that remaining TCE exceeding 5 µg/L was located between MW-61R and TMW-10 and that by injecting reagent in this area concentrations would be reduced at MW-61R. Both the field water quality data exhibiting negative ORP, low DO and increasing iron and the increase in VFA levels this last monitoring event support continuing reducing conditions appropriate for TCE reduction, Ramboll will produce a work plan to address this increase in concentration as part of the 2020 Semi-Annual Report.

5 Summary

An ISCR injection event was performed December 6-8, 2019, at the former Whirlpool site in Fort Smith, Arkansas. The specific injection locations for this event occurred at the northeast parking lot and on the 6427 Jenny Lind Road property. This ISCR injection event included injection of approximately 5,760 gallons of reagent solution containing 4,468 pounds of ZVI; 365 pounds of nutrient; 1,525 pounds of hydrolyzed kelp; 3,625 pounds of calcium propionate; 480 pounds of sodium sulfite; 7,352 pounds of Provect-IR; 365 pounds of yeast extract; 487 pounds of magnesium hydroxide; 114 gallons of anti-methanogenic reagent (AMR) compound; 495 grams of Vitamin B12 and, 3,435 grams of Vitamin B2. The reagent solution was injected into the saturated zone at 20 injection points in the northeast parking lot and 17 injection points on the property at 6427 Jenny Lind Road property.

The ISCR technology combines abiotic chemical reduction and anaerobic bioremediation for the treatment of cVOCs in groundwater. These physical, chemical and biological processes combine to produce a reducing environment in the saturated zone stimulating chemical and microbiological dechlorination of TCE. ISCR reagents are typically effective for timeframes of years; therefore, the evaluation of data associated with this supplemental injection is anticipated to continue for a similar period of time.

A summary of the field and analytical monitoring data are discussed below:

- Field water quality parameters, field observations and analytical data indicate that the ISCR reagent injections impacted the majority of monitoring wells within the radius of influence of the ISCR reagent injections.
- During both the 2018 and 2019 injection events, the ORP measured values decreased and specific conductivity levels increased at the majority of the wells monitored. Both of these changes indicate the ISCR reagent reached or impacted the groundwater at the respective monitoring wells.
- At the majority of the wells monitored for the 2018 ISCR Event approximately 450 days post injection , the ORP measured values continue to be reducing, the DO measured values remained within the reducing range and specific conductivity levels remained elevated. This indicates the geochemistry is ideal for the reductive process to continue.
- Significant concentrations of total iron, sulfate, TOC, DOC, methane and VFA (acetate, propionate, butyrate and pyruvate) continue to be detected in the ISCR monitoring wells (directly affected by the 2018 injections) approximately 450 days following ISCR injections compared to the baseline, 90 day and 245 day data indicating geochemistry is ideal for the reductive process to continue.
- The increase in cis-1,2-dichlorothylene (cis-1,2-DCE) concentrations in the majority of monitoring wells in comparison to baseline levels indicate that the ISCR injection enhanced reductive dechlorination in the groundwater.
- In the MW-61R Treatment Zone, the TCE concentration decreased from 91.1 µg/L to 8.6 µg/L at TMW-10 (91% decrease in concentration). MW-61R is the only monitoring well that has had a marginal increase in TCE concentration since the ISCR injections; however, the increased reductive conditions now present up-gradient of MW-61R at

TMW-10 are anticipated to effect groundwater chemistry over the next several months ultimately resulting in a reduction in TCE concentrations in MW-61R as has occurred in the past.

- TCE concentration reductions in the North Plume Treatment Zone ranged from 19% to 96%, 450 days after ISCR reagent injections which is indicative of enhanced reductive dechlorination in the groundwater. The sum of TCE concentrations decreased in the wells monitored by 83% in this area approximately 450 days after ISCR reagent injections compared to baseline concentrations.
- TCE concentration reductions in the South Plume Treatment Zone ranged from 55% to 99%, approximately 450 days after ISCR reagent injections which is indicative of enhanced reductive dechlorination in the groundwater. The sum of TCE concentrations decreased in the wells monitored by 93% in this area approximately 450 days after ISCR reagent injections compared to baseline concentrations.

Whirlpool will complete the southern injections as outlined in the Action Plan in early 2020. As discussed in correspondence in 2019, Whirlpool is assessing a more sustainable and longer lasting remedy or remedies to supplement the remediation efforts performed at the site in 2014 and remedial efforts at plume boundaries during the last few years. Bench scale and field scale tests to supplement remediation efforts commenced in October 2019. A strategy to address groundwater impacts throughout the site will be presented within the 2020 Semi-Annual Report.

Tables

TABLE 1
SUMMARY OF WATER QUALITY PARAMETERS
2018 ISCR Event
Whirlpool Facility - Fort Smith, Arkansas

Well	Time - Time Stamp	TOC Elevation (feet)	Static Depth to Water (feet)	Groundwater Elevation (feet)	Temperature (°C)	Specific Conductivity (µS/cm)	DO (mg/L)	pH (SU)	ORP (mV)	Fe(II) (mg/L)	Notes
Northeast Plume Permeable Reactive Barrier Treatment Zone (Injections in 2019)											
MW-91	4/25/2019 9:47	468.9	11.51	457.39	19.80	435	0.57	5.67	124.1	0.00	2019 Semi-Annual Event
	10/24/2019 14:20	468.9	11.54	457.36	20.10	384	0.21	5.67	189.0	0.03	2019 Annual Event
	12/3/2019 14:50	468.9	10.89	458.01	23.90	443	0.34	5.69	167.5	0.00	Pre-Injection Baseline
	12/6/2019 11:20	468.9	7.80	461.1	24.00	1359	1.25	5.85	95.3	NM	Paramaters Recorded During Injections
	12/7/2019 17:35	468.9	12.70	456.2	22.40	4153	0.75	6.02	87.5	2.91	Post-Injection Monitoring
MW-99	4/24/2019 11:53	466.8	9.90	456.9	17.60	179	0.94	6.34	190.8	0.00	2019 Semi-Annual Event
	10/23/2019 0:00	466.8	9.40	457.4	21.20	189	0.57	6.28	114.4	0.03	2019 Annual Event
	12/3/2019 9:30	466.8	9.06	457.74	19.60	212	0.79	5.93	162.5	0.00	Pre-Injection Baseline
	12/8/2019 8:30	466.8	7.90	458.9	19.20	118	2.86	6.63	119.2	NM	Paramaters Recorded During Injections
	12/9/2019 9:42	466.8	12.48	454.32	20.00	6378	0.78	7.08	78.4	1.48	Post-Injection Monitoring
MW-61R Phase II Treatment Area (Injections in 2015 and 2018)											
MW-61R	9/18/2015 15:07	459.31	4.50	454.81	25.09	687	0.38	6.22	-147.3	ND	2015 Pilot pre-injection baseline
	1/8/2016 8:30	459.31	7.10	452.21	16.18	1,207	0.21	6.82	-117.3	>3.00	90 days post pilot injection
	5/3/2016 12:10	459.31	6.40	452.91	18.18	1,250	0.17	6.79	-124.8	>3.00	2nd Quarter 2016 Event, slightly yellow
	10/23/2017 16:52	459.31	6.53	452.78	23.90	1,204	0.18	6.95	-119.3	>3.00	2017 Annual Event, max Fe(II) reading
	4/17/2018 14:00	459.31	7.05	452.26	17.86	1,077	0.12	6.89	-125.5	>3.00	2018 Semi-Annual Event, max Fe(II) reading
	7/31/2018 11:15	459.31	5.75	453.56	24.30	915	0.07	6.78	-87.4	>3.00	Pre-Injection Baseline, max Fe(II) reading
	11/13/2018 14:20	459.31	6.85	452.46	19.75	951	0.12	6.54	-108.9	1.15	90 days post injection (annual monitoring event)
	4/25/2019 15:40	459.31	6.44	452.87	18.60	907	0.12	6.80	-63.5	1.18	2019 Semi-Annual Monitoring Event
	10/23/2019 9:10	459.31	5.05	454.26	22.26	881	0.29	6.70	-105.8	2.13	2019 Annual Monitoring Event, faint blue, slight ISCR odor
	12/7/2019 12:40	459.31	6.99	452.32	19.60	845	0.10	6.54	-95.2	NM	2019 Re-sample
TMW-10	9/18/2015 13:40	460.75	4.20	456.55	23.96	932	0.78	6.31	-183.9	ND	2015 Pilot pre-injection baseline
	1/8/2016 8:40	460.75	5.00	455.75	16.94	822	2.17	6.19	209.8	0.14	90 days post pilot injection
	5/4/2016 10:10	460.75	5.70	455.05	17.10	869	1.12	6.40	135.5	0.13	2nd Quarter 2016 Event, light yellow brown
	10/24/2017 14:50	460.75	4.93	455.82	21.59	904	0.18	6.33	55.1	0.08	2017 Annual Event
	4/17/2018 13:10	460.75	7.30	453.45	18.36	864	0.11	6.33	155.8	0.03	2018 Semi-Annual Event
	7/31/2018 17:20	460.75	4.70	456.05	21.75	833	0.03	6.22	32.5	0.05	Pre-Injection Baseline
	8/2/2018 8:37	460.75	0.37	460.38	21.11	1,202	--**	6.03	166.5	--	During injection, issue with DO sensor
	11/13/2018 16:55	460.75	5.69	455.06	16.46	3,499	0.47	6.63	-127.6	>3.00	90 days post injection (annual monitoring event), max Fe (II) reading, light brown/gray, ISCR odor
	4/25/2019 17:30	460.75	6.22	454.53	16.2	2,373	0.38	6.82	-118.9	1.21	2019 Semi-Annual Monitoring Event, light yellow/brown, ISCR odor
	10/22/2019 14:05	460.75	2.89	457.86	20.9	2,122	0.05	6.83	-166.3	>3.00	2019 Annual Monitoring Event, max Fe (II) reading, light yellow/brown, ISCR odor
TMW-11	9/18/2015 10:05	460.20	3.49	456.71	23.93	1,005	3.07	6.52	12.4	ND	2015 Pilot pre-injection baseline
	1/8/2016 8:53	460.20	4.43	455.77	15.83	3,793	0.16	7.19	-128.0	>3.00	90 days post pilot injection
	5/3/2016 15:10	460.20	4.96	455.24	18.93	2,512	0.15	7.17	-153.8	NM	2nd Quarter 2016 Event, light gray brown
	10/23/2017 16:00	460.20	4.00	456.20	22.99	1,510	0.07	7.07	-137.9	>3.00	2017 Annual Event, light gray tint, max Fe(II) reading
	4/17/2018 12:50	460.20	6.58	453.62	19.29	1,332	0.06	7.16	-130.9	>3.00	2018 Semi-Annual Event, clear, slight organic odor, max Fe(II) reading
	8/2/2018 11:00	460.20	1.72	458.48	22.40	5,132	--**	6.39	-138.1	--	During injection, issue with DO sensor
	11/13/2018 16:45	460.20	5.34	454.86	16.96	2,157	0.05	6.98	-162.1	1.91	90 days post injection (annual monitoring event), light yellow/gray, slight odor
	4/25/2019 12:55	460.20	5.59	454.61	16.50	1,404	0.21	6.97	-112.7	1	2019 Semi-Annual Monitoring Event, light yellow/clear, no odor
	10/22/2019 13:45	460.20	2.11	458.09	22.50	1,438	0.07	7	-124.4	>3.00	2019 Annual Monitoring Event, max Fe (II) reading, clear w/ black flecks, slight odor
North Plume Permeable Reactive Barrier Treatment Zone (Injections in 2018)											
TMW-21	10/24/2017 14:26	460.01	3.36	456.65	19.93	810	0.60	6.12	22.4	--	2017 Annual Event
	4/19/2018 10:48	460.01	2.84	457.17	14.30	873	0.56	6.15	118.1	0.02	2018 Semi-Annual Event
	7/31/2018 16:00	460.01	3.50	456.51	22.04	774	0.03	5.97	45.3	ND	Pre-Injection Baseline
	8/3/2018 9:13	460.01	3.39	456.62	21.58	772	0.32	6.06	159.0	--	During injection
	8/7/2018 12:55	460.01	6.00	454.01	25.67	11,844	0.34	6.48	-183.0	--	During injection
	11/15/2018 15:15	460.01	2.60	457.41	18.47	6,574	0.05	6.45	-101.8	>3.00	90 days post injection (annual monitoring event), max Fe (II) reading, strong odor, yellow/gray

RAMBOLL

TABLE 1
SUMMARY OF WATER QUALITY PARAMETERS
2018 ISCR Event
Whirlpool Facility - Fort Smith, Arkansas

Well	Time - Time Stamp	TOC Elevation (feet)	Static Depth to Water (feet)	Groundwater Elevation (feet)	Temperature (°C)	Specific Conductivity (µS/cm)	DO (mg/L)	pH (SU)	ORP (mV)	Fe(II) (mg/L)	Notes
	4/25/2019 17:55	460.01	2.18	457.83	16.50	5,658	0.08	6.51	-133.9	>3.00	2019 Semi-Annual Monitoring Event, max Fe (II) reading, yellow/gray, strong ISCR odor
	10/22/2019 16:00	460.01	1.00	459.01	20.10	2,005	0.11	6.56	-211.8	>3.00	2019 Annual Monitoring Event, max Fe (II) reading, light gray w/ black flecks, ISCR odor
TMW-22	10/24/2017 16:50	460.82	4.35	456.47	19.88	932	1.35	6.33	-62.0	--	2017 Annual Event
	4/18/2018 14:50	460.82	3.34	457.48	18.40	986	0.41	6.59	231.6	ND	2018 Semi-Annual Event
	8/1/2018 10:10	460.82	4.93	455.89	20.52	832	0.28	6.11	130.0	0.38	Pre-Injection Baseline
	8/6/2018 9:15	460.82	--	--	21.43	6,174	0.44	6.34	-487.8	--	During injection, well integrity compromised due to damage during injection event, uppermost PVC riser cracked/bent, unable to take water level readings, bentonite observed on water level meter, replaced durring 2018 Annual Event
TMW-22R	11/15/18 16:50	460.71	3.30	457.41	18.55	1,478	0.04	7.08	-105.0	1.20	90 days post injection (annual monitoring event), replacement well for TMW-22, pale yellow, slight odor
	4/25/19 17:45	460.71	2.15	458.56	16.30	1,517	0.24	6.65	-41.0	2.01	2019 Semi-Annual Monitoring Event, clear, slight odor
	10/23/19 12:30	460.71	1.40	459.31	22.40	1,627	0.18	6.61	-112.4	>3.00	2019 Annual Monitoring Event, max Fe (II) reading, tan tinge/turbid, slight ISCR odor
MW-194	10/23/2017 16:12	462.47	4.41	458.06	23.58	660	0.15	5.90	53.7	--	2017 Annual Event
	4/17/2018 16:00	462.47	5.00	457.47	19.16	721	0.19	5.89	119.6	ND	2018 Semi-Annual Event
	7/31/2018 14:45	462.47	4.45	458.02	24.22	692	0.08	5.67	56.2	0.49	Pre-Injection Baseline
	8/9/2018 12:15	462.47	2.88	459.59	24.00	814	0.14	6.01	67.1	--	During injection, light yellow, inoculant/yeasty odor
	11/14/2018 17:20	462.47	4.50	457.97	19.91	865	0.05	5.76	-61.3	0.61	90 days post injection (annual monitoring event)
	4/25/2019 14:15	462.47	4.78	457.69	16.90	878	0.93	6.29	-130.1	3.00	2019 Semi-Annual Monitoring Event, max Fe (II) reading, light yellow/brown, slight odor
	10/23/2019 10:40	462.47	3.25	459.22	20.60	704	0.14	6.23	-53.5	2.15	2019 Annual Monitoring Event, clear, slight odor
South Plume Permeable Reactive Barrier Treatment Zone (Injections in 2018)											
MW-186	10/24/2017 10:40	469.8	14.12	455.68	17.75	777	0.26	6.00	53.8	--	2017 Annual Event
	4/19/2018 10:35	469.8	13.93	455.87	16.00	789	0.26	6.03	149.7	ND	2018 Semi-Annual Event
	8/3/2018 16:10	469.8	14.02	455.78	21.32	807	0.23	5.71	168.0	0.01	Pre-Injection Baseline, pale yellow
	8/13/2018 10:15	469.8	13.42	456.38	20.85	6,841	0.09	6.45	-24.2	--	During injection, light yellow brown, inoculant/yeasty odor
	11/14/2018 10:05	469.8	14.02	455.78	15.22	11,567	0.07	6.38	-172.2	>3.00	90 days post injection (annual monitoring event), max Fe (II) reading, strong odor, light yellow
	4/26/2019 8:55	469.8	12.68	457.12	16.10	4,312	0.10	6.86	-141.4	1.40	2019 Semi-Annual Monitoring Event, light yellow, slight odor
	10/24/2019 13:15	469.8	12.86	456.94	17.00	2,234	0.16	7.13	-169.8	1.66	2019 Annual Monitoring Event, light yellow, no odor
TMW-16	10/24/2017 10:58	469.87	13.23	456.64	18.07	2,258	0.19	5.84	117.7	--	2017 Annual Event
	4/19/2018 15:30	469.87	12.99	456.88	17.67	2,134	0.07	5.89	294.6	ND	2018 Semi-Annual Event
	8/2/2018 15:19	469.87	13.02	456.85	20.87	1,982	0.19	5.84	296.3	ND	Pre-Injection Baseline
	8/19/2018 10:02	469.87	11.87	458.00	20.46	5,719	0.12	6.09	32.5	--	During injection, slight light brown
	11/16/2018 10:25	469.87	12.91	456.96	15.39	2,739	1.10	6.62	-97.4	>3.00	90 days post injection (annual monitoring event), max Fe (II) reading, ISCR odor, light gray brown
	4/25/2019 10:50	469.87	11.88	457.99	16.80	5,610	0.07	7.01	-132.8	>3.00	2019 Semi-Annual Monitoring Event, max Fe (II) reading, clear, slight odor
	10/23/2019 15:15	469.87	11.45	458.42	18.30	3,689	0.09	7.03	-200.3	>3.00	2019 Annual Event, max Fe (II) reading, tan tinge, ISCR odor
TMW-25	10/25/2017 16:45	473.14	16.18	456.96	19.13	1,049	0.13	5.96	134.2	--	2017 Annual Event
	4/19/2018 14:10	473.14	16.30	456.84	17.61	1,022	0.14	5.89	440.7	0.22	2018 Semi-Annual Event
	11/15/2018 13:30	473.14	15.55	457.59	17.46	13,954	0.02	6.61	-169.8	>3.00	90 days post injection (annual monitoring event), max Fe (II) reading, strong odor, yellow/gray
	4/25/2019 11:00	473.14	14.23	458.91	16.9	3,710	0.05	7.05	-182.6	>3.00	2019 Semi-Annual Event, max Fe(II) reading, yellow with flecks, strong odor
	10/24/2019 10:55	473.14	11.9	461.24	16.4	1,509	0.36	7.07	-152.2	1.68	2019 Annual Event, pale yellow, slight odor

RAMBOLL

TABLE 1
SUMMARY OF WATER QUALITY PARAMETERS
2018 ISCR Event
Whirlpool Facility - Fort Smith, Arkansas

Well	Time - Time Stamp	TOC Elevation (feet)	Static Depth to Water (feet)	Groundwater Elevation (feet)	Temperature (°C)	Specific Conductivity (µS/cm)	DO (mg/L)	pH (SU)	ORP (mV)	Fe(II) (mg/L)	Notes
TMW-26	10/24/2017 12:48	472.1	16.84	455.26	19.27	983	0.24	6.17	13.8	--	2017 Annual Event
	4/19/2018 13:00	472.1	16.23	455.87	16.26	941	0.08	6.05	328.8	0.01	2018 Semi-Annual Event
	8/2/2018 16:45	472.1	16.30	455.8	21.75	1,055	0.20	5.95	174.8	ND	Pre-Injection Baseline
	8/21/2018 10:39	472.1	14.73	457.37	20.12	8,942	0.17	6.05	-112.2	--	During injection
	11/15/2018 11:15	472.1	16.10	456.00	15.34	14,751	0.04	6.47	-162.9	>3.00	90 days post injection (annual monitoring event), max Fe (II) reading, strong odor, brown/black, froth observed on top of water surface
	4/25/2019 16:45	472.1	15.60	456.50	18.00	5,644	0.07	6.45	-108.3	2.72	2019 Semi-Annual Monitoring Event, light yellow with oily sheen, strong odor
	10/24/2019 10:55	472.1	11.90	460.20	16.40	1,509	0.36	7.07	-152.2	1.68	2019 Annual Monitoring Event, pale yellow, slight ISCR odor
TMW-30	10/24/2017 16:58	469.37	13.95	455.42	17.54	909	0.32	6.93	-379.5	--	2017 Annual Event, slightly brown cloudy
	--	469.37	--	--	--	--	--	--	--	--	2018 Semi-Annual Event
	8/11/2018 13:52	469.37	14.02	455.35	22.87	637	0.12	5.32	169.3	0.02	Pre-Injection Baseline (field parameters only, no samples collected)
	8/13/2018 9:05	469.37	13.99	455.38	20.49	1,738	0.14	6.32	131.8	--	Prior to day 3 of injections, light yellow brown
	11/14/2018 13:30	469.37	14.11	455.26	13.40	20,404	0.16	6.76	-555.7	0.98	90 days post injection (annual monitoring event), ISCR odor, black
	10/23/2019 14:45	469.37	12.72	456.65	19.80	4,742	0.20	7.03	-214.7	2.46	2019 Annual Monitoring Event, dark gray, ISCR odor
TMW-32	--	466.9	--	--	--	--	--	--	--	--	2017 Annual Event
	4/18/2018 16:30	466.9	10.81	456.09	17.75	653	0.11	5.58	173.8	ND	2018 Semi-Annual Event
	8/3/2018 12:50	466.9	11.33	455.57	22.87	637	0.12	5.32	169.3	0.02	Pre-Injection Baseline
	11/16/2018 9:35	466.9	10.93	455.97	17.71	934	0.08	6.66	-138.6	0.50	90 days post injection (annual monitoring event)
	4/25/2019 13:30	466.9	10.37	456.53	16.70	862	0.08	6.45	-35.8	>3.00	2019 Semi-Annual Monitoring Event, max Fe (II) reading, clear, faint odor
	10/24/2019 15:15	466.9	10.70	456.2	20.90	426	0.13	6.66	-70.9	1.54	2019 Annual Monitoring Event, pale yellow, slight ISCR odor
Southeast Plume Permeable Reactive Barrier Treatment Zone (Injections in 2018)											
MW-185*	10/24/2017 15:20	473.86	14.72	459.14	23.90	246	0.61	6.16	60.6	--	2017 Annual Event
	4/19/2018 12:55	473.86	15.36	458.5	20.56	245	0.54	6.23	146.0	ND	2018 Semi-Annual Event
	7/31/2018 13:05	473.86	14.77	459.09	28.10	313	0.59	5.74	37.8	0.18	Pre-Injection Baseline
	11/14/2018 11:40	473.86	14.83	459.03	21.57	252	0.53	5.69	52.2	0.02	90 days post injection (annual monitoring event)
	4/25/2019 16:35	473.86	14.23	459.63	23.20	236	0.47	6.04	146.4	0.06	2019 Semi-Annual Monitoring Event, yellowish brown tint, moderate odor
	10/24/2019 14:29	473.86	14.26	459.6	22.20	271	0.59	5.64	151.7	0.29	2019 Annual Monitoring Event, clear, no odor
TMW-34	11/14/2018 15:00	471.37	12.54	458.83	22.60	427	0.07	6.26	95.1	ND	90 days post injection (annual monitoring event)
	4/25/2019 14:10	471.37	12.04	459.33	20.00	382	0.14	6.74	-2.5	0.27	2019 Semi-Annual Monitoring Event, clear with yellow tint, moderate odor
	10/24/2019 17:30	471.37	11.60	459.77	20.85	426	0.13	6.66	-70.9	1.54	2019 Annual Monitoring Event, clear, ISCR odor
	12/7/2019 10:40	471.37	12.43	458.94	21.60	399	0.10	6.34	-21.0	NM	2019 Re-sample

Notes:

µS/cm = MicroSiemens per centimeter
mg/L = Milligrams per liter
ND = Not Detected
NA = Not Available
TOC = Top of casing
DO = Dissolved oxygen
ORP = Oxidation reduction potential
mV = Millivolts
SU = Standard Units
-- Not Measured
* MW-185 located up groundwater gradient from SE injection area.
** DO sensor malfunction, no measurement

RAMBOLL

TABLE 2
LABORATORY ANALYTICAL RESULTS - PRB TREATMENT AREAS
ISCR MONITORING (JULY 2018 - December 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location		TMW-10				TMW-11*				TMW-16				TMW-21				
Field Sample ID	Remedial Action Levels per ADEQ RADD Issued Dec 2013	TMW-10-201807	TMW-10-201811	TMW-10-201904	TMW-10-201910	TMW-11-201710	TMW-11-201811	TMW-11-201904	TMW-11-201910	TMW-16-201807	TMW-16-201811	TMW-16-201904	TMW-16-201910	TMW-21-201807	TMW-21-201811	TMW-21-201904	TMW-21-201910	TMW-22-201807
Lab Sample ID(s)		60276306005	60286720008	60300963030	60318969022	60243014009	60286720007	60300963008	60318969021	60276564001	60287140007	60300963025	60319115060	60206665004	60287044033	60300963007	60318969020	60276523001
Sample Date		7/31/2018	11/13/2018	04/25/2019	10/22/2019	10/23/2017	11/13/2018	04/25/2019	10/22/2019	8/2/2018	11/16/2018	04/25/2019	10/23/2019	7/31/2018	11/15/2018	04/25/2019	10/22/2019	8/1/2018
Sample Method		Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Comments		PRB Pilot Area (North Plume)								PRB S3 (South Plume)								PRB N1 (North Plume)
Volatile Organic Compounds																		
Acetone	12000	2.8 J (1.9)	128 (1.9)	10.8 (3.3)	U (3.3)	U (1.9)	5.9 J (1.9)	U (3.3)	U (3.3)	4.0 J (1.9)	146 (1.9)	402 (3.3)	73.7 (3.3)	2.4 J (1.9)	331 (1.9)	443 (3.3)	202 (3.3)	U (1.9)
Benzene	5	U (0.060)	0.10 J (0.060)	U (0.079)	U (0.079)	0.11 J (0.060)	0.11 J (0.060)	U (0.079)	U (0.079)	U (0.060)	0.13 J (0.060)	0.20 J (0.079)	0.18 J (0.079)	U (0.060)	0.11 J (0.060)	0.10 J (0.079)	U (0.079)	U (0.060)
Bromomethane	7	U (0.16)	U (0.16)	U (0.32)	U (0.32)	U (0.16)	U (0.16)	U (0.32)	U (0.32)	U (0.16)	U (0.16)	UJ (0.32)	U (0.32)	U (0.16)	U (0.16)	UJ (0.32)	U (0.32)	U (0.16)
2-Butanone	4900	U (0.59)	307 (0.59)	2.7 J (0.70)	U (0.70)	U (0.59)	U (0.59)	U (0.70)	U (0.70)	U (0.59)	1090 (5.9)	7460 (7.0)	325 (0.70)	U (0.59)	760 (0.59)	932 (0.70)	309 (0.70)	U (0.59)
Carbon Disulfide	720	U (0.12)	0.56 J (0.12)	1.0 J (0.16)	0.35 J (0.16)	U (0.12)	U (0.12)	0.31 J (0.16)	U (0.16)	U (0.12)	0.97 J (0.12)	0.85 J (0.16)	1.6 J (0.16)	U (0.12)	0.78 J (0.12)	1.1 J (0.16)	0.42 J (0.16)	U (0.12)
Chlorobenzene	100	U (0.21)	U (0.21)	U (0.13)	U (0.13)	U (0.21)	U (0.21)	U (0.13)	U (0.13)	0.55 J (0.21)	0.33 J (0.21)	0.24 J (0.13)	0.14 J (0.13)	U (0.21)	U (0.21)	UJ (0.13)	U (0.13)	U (0.21)
Chloroform	80	U (0.14)	U (0.14)	U (0.10)	U (0.10)	U (0.14)	U (0.14)	U (0.10)	U (0.10)	1.5 (0.14)	0.15 J (0.14)	UJ (0.10)	U (0.10)	U (0.14)	U (0.14)	UJ (0.10)	U (0.10)	U (0.14)
Chloromethane	190	U (0.080)	U (0.080)	U (0.16)	U (0.16)	U (0.080)	U (0.080)	U (0.16)	U (0.16)	U (0.080)	U (0.080)	UJ (0.16)	U (0.16)	U (0.080)	U (0.080)	UJ (0.16)	U (0.16)	U (0.080)
1,1-Dichloroethane	2.4	U (0.050)	U (0.050)	U (0.097)	U (0.097)	U (0.050)	U (0.050)	U (0.097)	U (0.097)	0.31 J (0.050)	0.25 J (0.050)	UJ (0.097)	U (0.097)	U (0.050)	U (0.050)	UJ (0.097)	U (0.097)	U (0.050)
1,2-Dichloroethane	5	0.14 J B (0.12)	0.16 J B (0.12)	U (0.14)	U (0.14)	U (0.12)	0.18 J B (0.12)	U (0.14)	U (0.14)	U (0.12)	U (0.12)	UJ (0.14)	U (0.14)	U (0.12)	U (0.12)	0.19 J (0.14)	U (0.14)	0.19 J B (0.12)
1,1-Dichloroethene	7	U (0.20)	0.26 J (0.20)	U (0.22)	U (0.22)	U (0.20)	U (0.20)	U (0.22)	U (0.22)	1.4 (0.20)	U (2.0)	0.58 J (0.22)	U (0.22)	1.5 (0.20)	0.21 J (0.20)	0.25 J (0.22)	U (0.22)	0.97 J (0.20)
cis-1,2-Dichloroethene	70	5.9 (0.080)	15.0 (0.080)	2.4 (0.17)	1.4 (0.17)	1.7 (0.080)	0.73 J (0.080)	0.78 J (0.17)	0.79 J (0.17)	15.1 (0.080)	29.1 (0.80)	236 (1.7)	8.8 (0.17)	12.6 (0.080)	86.3 (0.080)	27.7 (0.17)	13.5 (0.17)	28.7 (0.080)
trans-1,2-Dichloroethene	100	U (0.20)	U (0.20)	U (0.17)	U (0.17)	U (0.20)	U (0.20)	0.23 J (0.17)	U (0.17)	U (0.20)	6.8 J (2.0)	2.3 (0.17)	0.39 J (0.17)	U (0.20)	U (0.20)	0.25 J (0.17)	0.19 J (0.17)	U (0.20)
Ethyl Benzene	700	U (0.18)	U (0.18)	U (0.12)	U (0.12)	U (0.18)	U (0.18)	U (0.12)	U (0.12)	U (0.18)	U (0.18)	UJ (0.12)	U (0.12)	U (0.18)	U (0.18)	UJ (0.12)	U (0.12)	U (0.18)
2-Hexanone	34	U (1.2)	3.7 J (1.2)	1.8 J (1.0)	U (1.0)	U (1.2)	U (1.2)	U (1.0)	U (1.0)	U (1.2)	22.0 (1.2)	6.8 J (1.0)	U (1.0)	U (1.2)	6.5 J (1.2)	6.3 J (1.0)	U (1.0)	U (1.2)
4-Methyl-2-pentanone	1000	U (0.42)	1.1 J (0.42)	0.77 J (0.56)	0.78 J (0.56)	U (0.42)	U (0.42)	U (0.56)	U (0.56)	U (0.42)	U (0.42)	UJ (0.56)	1.9 J (0.56)	U (0.42)	1.3 J (0.42)	1.1 J (0.56)	1.1 J (0.56)	U (0.42)
Methylene Chloride	5	U (0.15)	U (0.15)	U (0.27)	U (0.27)	U (0.15)	U (0.15)	U (0.27)	U (0.27)	0.71 J (0.15)	0.72 J (0.15)	UJ (0.27)	U (0.27)	U (0.15)	U (0.15)	UJ (0.27)	U (0.27)	U (0.15)
1,1,2,2-Tetrachloroethane	0.066	U (0.15)	U (0.15)	U (0.31)	U (0.31)	U (0.15)	U (0.15)	U (0.31)	U (0.31)	U (0.15)	1.6 (0.15)	UJ (0.31)	U (0.31)	U (0.15)	U (0.15)	UJ (0.31)	U (0.31)	U (0.15)
Tetrachloroethene	5	U (0.10)	U (0.10)	U (0.22)	U (0.22)	U (0.10)	U (0.10)	U (0.22)	U (0.22)	0.38 J (0.10)	U (0.10)	UJ (0.22)	U (0.22)	U (0.10)	U (0.10)	UJ (0.22)	U (0.22)	U (0.10)
Toluene	1000	U (0.17)	0.25 J (0.17)	U (0.14)	U (0.14)	0.47 J (0.17)	1.1 (0.17)	U (0.14)	0.20 J (0.14)	U (0.17)	U (0.17)	0.15 J (0.14)	0.21 J (0.14)	U (0.17)	0.93 J (0.17)	0.34 J (0.14)	53.2 (0.14)	U (0.17)
1,1,2-Trichloroethane	5	U (0.20)	U (0.20)	U (0.10)	U (0.10)	U (0.20)	U (0.20)	U (0.10)	U (0.10)	U (0.20)	U (0.20)	UJ (0.10)	U (0.10)	U (0.20)	U (0.20)	UJ (0.10)	U (0.10)	U (0.20)
Trichloroethene	5	91.1 (0.17)	14.3 (0.17)	11.5 (0.17)	8.6 (0.17)	0.62 J (0.17)	0.40 J (0.17)	1.4 (0.17)	0.70 J (0.17)	988 (1.7)	368 (1.7)	23.8 (0.17)	6.0 (0.17)	564 (1.7)	22.1 (0.17)	47.0 (0.17)	21.8 (0.17)	460 (3.4)
Vinyl Chloride	2	0.66 J (0.13)	6.2 (0.13)	3.7 (0.11)	2.4 (0.11)	0.70 J (0.13)	0.46 J (0.13)	0.64 J (0.11)	0.29 J (0.11)	0.81 J (0.13)	1.6 J (1.3)	1.4 (0.11)	2.4 (0.11)	0.31 J (0.13)	0.52 J (0.13)	5.9 (0.11)	1.9 (0.11)	0.20 J (0.13)
Metals																		
Iron	NE	122 B (50.0)	105000 (50.0)	29900 (50.0)	22100 (50.0)	8800 (50.0)	10800 (50.0)	6900 (50.0)	7540 (50.0)	110 (50.0)	186000 (50.0)	114000 (50.0)	53400 (50.0)	81 B (50.0)	131000 (50.0)	147000 (50.0)	76100 (50.0)	694 (50.0)
Iron, Ferric	NE	72 (50.0)	102000 (50.0)	28690 (50.0)	19100 (50.0)	NM	8890 (50.0)	5900 (50.0)	4540 (50.0)	110 (200)	185700 (50.0)	111000 (50.0)	50400 (50.0)	81 (200)	130700 (50.0)	144000 (50.0)	73100 (50.0)	310 (50.0)
Carbon																		
Organic Carbon (total)	NE	280 J (1000)	2240000 (300000)	35700 (20000)	16100 (5000)	3700 (1000)	13200 (2000)	4600 (2000)	1700 (1000)	U (1000)	2980000 (500000)	14500 (1000)	449000 (50000)	280 J (1000)	2770000 (500000)	3930000 (500000)	1130000 (100000)	U (1000)
Organic Carbon (dissolved)	NE	320 J (1000)	2060000 (500000)	24800 (20000)	16400 (5000)	NM	9200 (1000)	2800 (1000)	1400 J (1000)	U (1000)	5910000 (1000000)	1440000 (100000)	469000 (50000)	330 J (1000)	2670000 (500000)	3660000 M1 (500000)	883000 (100000)	U (1000)
Anions																		
Chloride	NE	170000 (10000)	276000 (50000)	201000 (50000)	198000 (10000)	NM	161000 (50000)	158000 (10000)	162000 (10000)	250000 (20000)	480000 (50000)	496000 (50000)	498000 (50000)	186000 (10000)	281000 (20000)	214000 (50000)	204000 (50000)	190000 (20000)
Nitrogen	NE	U (100)	120 (100)	U (100)	U (100)	U H1 (100)	U (100)	U (100)	U (100)	96300 (5000)	180 (100)	42 J (100)	81 J (100)	U (100)	130 (100)	U (100)	150 (100)	U (100)
Nitrogen, Nitrate (As N)	NE	U (100)	U (100)	U (100)	U (100)	U H1 (100)	U (100)	U (100)	U (100)	96300 (5000)	72 J (100)	U (100)	U (100)	U (100)	U (100)	U (100)	U (100)	U (100)
Nitrogen, Nitrite	NE	U (100)	110 (100)	U (100)	U (100)	65 J H1 B (100)	U (100)	U (100)	U (100)	U (5000)	100 (100)	U (100)	85 J (100)	U (100)	190 (100)	U (100)	170 (100)	U (100)
Sulfate	NE	1900 (1000)	10400 (10000)	560 J (1000)	1100 (1000)	740 J H1 (1000)	U (1000)	1700 (1000)	1100 (1000)	96600 (10000)	10900 (10000)	1900 (1000)	3900 (1000)	8200 (1000)	10600 (1000)	24900 (2000)	15300 (2000)	5600 (1000)
Gases																		
Acetylene	NE	NM	U (0.50)	UJ (0.50)	0.50 (0.50)	NM	U (0.50)	U (0.50)	0.50 (0.50)	NM	NM	UJ (0.50)	NM	NM	NM	UJ (0.50)	NM	NM
Methane	NE	490 (0.50)	11000 (0.50)	16000 J (0.50)	14000 (0.50)	16000 (0.50)	16000 (0.50)	17000 (0.50)	13000 (0.50)	2.0 (0.50)	10000 (0.50)	16000 J (0.50)	24000 (0.50)	1.5 (0.50)	15000 (0.50)	17000 J (0.50)	12000 (0.50)	14 (0.50)
Ethane	NE	U (0.10)	0.28 (0.10)	0.32 J (0.10)	0.74 (0.10)	0.48 (0.10)	0.58 (0.10)	1.4 (0.10)	0.74 (0.10)	U (0.10)	5.3 (0.10)	0.45 J (0.10)	0.42 (0.10)	U (0.10)	0.49 (0.10)	0.86 J (0.10)	0.48 (0.10)	1.1 (0.10)
Ethene	NE	0.38 (0.10)	1.8 (0.10)	2.8 J (0.10)	2.8 (0.10)	1.4 (0.10)	0.90 (0.10)	1.1 (0.10)	0.52 (0.10)	U (0.10)	18 (0.10)	2.0 J (0.10)	5.1 (0.10)	0.39 (0.10)	1.9 (0.10)	2.5 J (0.10)	1.2 (0.10)	0.11 (0.10)
Hydrogen (H2) [NM]4*	NE	NM	11 (1.0)	NM	1.6 (1.0)	1.7 (0.60)	6.7 (1.0)	NM	2.5 (1.0)	NM	NM	NM	NM	NM	NM	NM	NM	NM
Volatile Fatty Acids																		
Acetic Acid	NE	U (5000)	130000 (10000)	2700 (1000)	630 (100)	NM	2500 (1000)	U (1000)	190 (100)	U (5000)	1400000 (100000)	83000 (10000)	60000 (10000)	U (5000)	260000 (10000)	610000 (100000)	130000 (10000)	U (5000)
Butyric Acid	NE	U (5000)	54000 (10000)	U (1000)	100 U (100)	NM	U (1000)	U (1000)	100 U (100)	U (5000)	190000 (100000)	34000 (10000)	28000 (1000)	U (5000)	130000 (10000)	280000 (10000)	56000 (10000)	U (5000)
Lactic Acid	NE	U (10000)	6800 (2000)	U (2000)	200 U (200)	NM	U (2000)	U (2000)	200 U (200)	U (10000)	U (20000)	U (20000)	2000 U (2000)	U (10000)	U (20000)	U (20000)	2000 U (2000)	U (10000)
Propionic Acid	NE	U (5000)	4100000 (100000)	4000 (1000)	300 (100)	NM	U (1000)	U (1000)	400 (100)	U (5000)	4500000 (100000)	3100000 (100000)	560000 (10000)	U (5000)	4600000 (100000)	3900000 (100000)	1300000 (100000)	U (5000)
Pyruvic Acid	NE	U (5000)	43000 (10000)	U (1000)	100 U (100)	NM	U (1000)	U (1000)	100 U (100)	U (5000)	17000 (10000)	23000 (10000)	3100 (1000)	U (5000)	38000 (10000)	13000 (10000)	5400 (1000)	U (5000)

Notes:

1 All concentrations are presented in ug/L except where noted.
2 All compounds are shown.
3 Concentrations that exceed the Remedial Action Levels per ADEQ RADD Issued Dec 2013 are double underlined.
U = Not detected
J = Estimated concentration
d = The analyte concentration was determined from a dilution.
( ) = Method detection limit for VOCs; reporting limit for all other parameters
* = Baseline samples for analytical analysis were not collected at TMW-11. October 2017 annual event analytical data is used for comparison purposes. October 2017 is the most recent event with MNA data collected at TMW-11.
** = Baseline samples for analytical analysis were not collected at TMW-25. April 2018 annual event analytical data is used for comparison purposes. April 2018 is the most recent event with analytical data collected at TMW-25 (previous MNA data not collected at TMW-25).
NM = Not Measured
H1 = Analysis conducted outside the EPA method holding time
B = Analyte was detected in the associated method blank
M1 = Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
F1 = The sample was analyzed at a dilution due to foaming of the sample in the purge vessel.
D3 = Sample was diluted due to the presence of high levels of non-target analytes or other matrix inteference.

RADD = Remedial action decision document
ADEQ = Arkansas Department of EnviroNMental Quality
µg/L = Micrograms per liter
mL = Milliliters
NE = Not established
NM = Not measured

RAMBOLL

TABLE 2
LABORATORY ANALYTICAL RESULTS - PRB TREATMENT AREAS
ISCR MONITORING (JULY 2018 - December 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued Dec 2013	TMW-22			TMW-25**				TMW-26				TMW-32			
Field Sample ID		TMW-22R-201811	TMW-22R-201904	TMW-22R-201910	TMW-25-201804	TMW-25-201811	TMW-25-201904	TMW-25-201910	TMW-26-201807	TMW-26-201811	TMW-26-201904	TMW-26-201910	TMW-32-201807	TMW-32-201811	TMW-32-201904	TMW-32-201910
Lab Sample ID(s)		60287044034	60300963028	60319115061	60268614014	60287044032	60300963009	60319241004	60276564002	60287044031	60300963029	60319115044	60276630001	60287140008	60300963026	60319241002
Sample Date		11/15/2018	04/25/2019	10/23/2019	04/19/2018	11/15/2018	04/25/2019	10/24/2019	8/2/2018	11/15/2018	04/25/2019	10/23/2019	8/3/2018	11/17/2018	04/25/2019	10/24/2019
Sample Method		Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Comments					PRB TMW-25 (South Plume)				PRB S2 (South Plume)							
Volatile Organic Compounds																
Acetone	12000	32.8 (1.9)	12.8 (3.3)	U (3.3)	2.0 J (1.9)	193 (9.4)	78.6 (3.3)	U (3.3)	3.6 J (1.9)	242 (9.4)	161 (3.3)	38.2 (3.3)	3.8 J (1.9)	6.6 J (1.9)	U (3.3)	U (3.3)
Benzene	5	0.10 J (0.060)	U (0.079)	0.15 J (0.079)	0.11 J (0.060)	U (0.30)	0.21 J (0.079)	U (0.079)	U (0.060)	U (0.30)	0.15 J (0.079)	0.12 J (0.079)	0.14 J (0.060)	U (0.060)	U (0.079)	U (0.079)
Bromomethane	7	U (0.16)	U (0.32)	U (0.32)	U (0.16)	U (0.80)	U (0.32)	U (0.32)	1.6 J (0.16)	U (0.80)	UJ (0.32)	U (0.32)	U (0.16)	U (0.16)	U (0.32)	U (0.32)
2-Butanone	4900	20.5 (0.59)	4.0 J (0.70)	U (0.70)	U (0.59)	328 (3.0)	295 (0.70)	15.8 (0.70)	U (0.59)	1460 (3.0)	826 (0.70)	113 (0.70)	U (0.59)	21.4 (0.59)	U (0.70)	U (0.70)
Carbon Disulfide	720	1.3 J (0.12)	0.31 J (0.16)	U (0.16)	U (0.12)	U (0.60)	0.48 J (0.16)	0.31 J (0.16)	U (0.12)	U (0.60)	1.8 J (0.16)	U (0.16)	U (0.12)	1.2 J (0.12)	U (0.16)	U (0.16)
Chlorobenzene	100	U (0.21)	U (0.13)	U (0.13)	3.5 (0.21)	2.9 J (1.0)	4.7 (0.13)	5.3 (0.13)	U (0.21)	U (1.0)	UJ (0.13)	U (0.13)	4.5 (0.21)	1.9 (0.21)	2.6 (0.13)	2.7 (0.13)
Chloroform	80	U (0.14)	U (0.10)	U (0.10)	0.26 J (0.14)	U (0.70)	U (0.10)	U (0.10)	0.21 J (0.14)	U (0.70)	UJ (0.10)	U (0.10)	U (0.15)	U (0.14)	U (0.10)	U (0.10)
Chloromethane	190	U (0.080)	U (0.16)	U (0.16)	U (0.080)	U (0.40)	U (0.16)	U (0.16)	2.5 (0.080)	U (0.40)	UJ (0.16)	U (0.16)	U (0.15)	U (0.080)	U (0.16)	U (0.16)
1,1-Dichloroethane	2.4	U (0.050)	U (0.097)	U (0.097)	U (0.050)	U (0.25)	U (0.097)	U (0.097)	0.27 J (0.050)	U (0.25)	0.29 J (0.097)	U (0.097)	U (0.15)	U (0.050)	U (0.097)	U (0.097)
1,2-Dichloroethane	5	U (0.12)	U (0.14)	U (0.14)	U (0.12)	U (0.60)	U (0.14)	U (0.14)	U (0.12)	U (0.60)	U (0.14)	U (0.14)	0.15 J B (0.12)	U (0.12)	U (0.14)	U (0.14)
1,1-Dichloroethene	7	1.3 (0.20)	1.6 (0.22)	0.72 J (0.22)	0.31 J (0.20)	U (1.0)	U (0.22)	U (0.22)	0.36 J (0.20)	U (1.0)	0.50 J (0.22)	0.29 J (0.22)	U (0.20)	U (0.20)	U (0.22)	U (0.22)
cis-1,2-Dichloroethene	70	71.2 (0.080)	184 (0.85)	126 (0.17)	10.9 (0.080)	11.0 (0.40)	47.7 (0.17)	39.9 (0.17)	2.5 (0.080)	11.1 (0.40)	46.3 (0.17)	53.3 (0.17)	3.4 (0.20)	1.9 (0.080)	36.4 (0.17)	21.0 (0.17)
trans-1,2-Dichloroethene	100	0.51 J (0.20)	1.6 (0.17)	1.1 (0.17)	U (0.20)	U (0.60)	U (0.17)	U (0.17)	U (0.20)	U (0.60)	UJ (0.17)	U (0.17)	U (0.20)	U (0.20)	U (0.17)	U (0.17)
Ethyl Benzene	700	0.36 J (0.18)	U (0.12)	U (0.12)	U (0.18)	U (0.90)	U (0.12)	U (0.12)	U (0.18)	U (0.90)	UJ (0.12)	U (0.12)	U (0.18)	U (0.18)	U (0.12)	U (0.12)
2-Hexanone	34	U (1.2)	U (1.0)	U (1.0)	U (1.2)	U (6.0)	4.6 J (1.0)	U (1.0)	U (1.2)	U (6.0)	UJ (1.0)	U (1.0)	U (1.2)	U (1.2)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	1000	U (0.42)	U (0.56)	U (0.56)	U (0.42)	U (2.1)	U (0.56)	U (0.56)	U (0.42)	U (2.1)	0.69 J (0.56)	2.6 J (0.56)	U (0.42)	U (0.42)	U (0.56)	U (0.56)
Methylene Chloride	5	U (0.15)	U (0.27)	U (0.27)	U (0.15)	U (0.75)	U (0.27)	U (0.27)	0.27 J (0.15)	U (0.75)	UJ (0.27)	U (0.27)	U (0.42)	U (0.15)	U (0.27)	U (0.27)
1,1,2,2-Tetrachloroethane	0.066	U (0.15)	U (0.31)	U (0.31)	U (0.15)	U (0.75)	U (0.31)	U (0.31)	U (0.15)	U (0.75)	UJ (0.31)	U (0.31)	U (0.42)	0.41 J (0.15)	U (0.31)	U (0.31)
Tetrachloroethene	5	U (0.10)	U (0.22)	U (0.22)	0.14 J (0.10)	U (0.50)	U (0.22)	U (0.22)	U (0.10)	U (0.50)	UJ (0.22)	U (0.22)	U (0.42)	U (0.10)	U (0.22)	U (0.22)
Toluene	1000	U (0.17)	U (0.14)	0.23 J (0.14)	U (0.17)	U (0.85)	0.19 J (0.14)	0.15 J (0.14)	U (0.17)	1.1 J (0.85)	0.16 J (0.14)	0.37 J (0.14)	U (0.42)	U (0.17)	U (0.14)	U (0.14)
1,1,2-Trichloroethane	5	U (0.20)	U (0.10)	U (0.10)	U (0.20)	U (1.0)	U (0.10)	U (0.10)	U (0.20)	U (1.0)	UJ (0.10)	U (0.10)	U (0.20)	U (0.20)	U (0.10)	U (0.10)
Trichloroethene	5	347 (3.4)	202 (0.85)	146 (0.17)	240 (0.85)	58.6 (0.85)	38.6 (0.17)	23.6 (0.17)	96.1 (0.17)	54.4 (0.85)	128 (0.17)	42.9 (0.17)	83.5 (0.17)	16.0 (0.17)	12.5 (0.17)	29.2 (0.17)
Vinyl Chloride	2	0.16 J (0.13)	8.3 (0.11)	7.9 (0.11)	0.29 J (0.13)	U (0.65)	0.39 J (0.11)	0.41 J (0.11)	0.23 J (0.13)	U (0.65)	0.29 J (0.11)	2.9 (0.11)	U (0.13)	0.35 J (0.13)	0.13 J (0.11)	0.13 J (0.11)
Metals																
Iron	NE	3510 (50.0)	14800 (50.0)	21200 (50.0)	NM	1410000 (500)	149000 (50.0)	23600 (50.0)	12.6 J (50.0)	1300000 (500)	205000 (50.0)	34800 (50.0)	U D3 (50.0)	7780 (50.0)	17300 (50.0)	12500 (50.0)
Iron, Ferric	NE	2310 (50.0)	12790 (50.0)	18200 (50.0)	NM	1407000 (500)	146000 (50.0)	21920 (50.0)	U (50.0)	1297000 (500)	202280 (50.0)	33120 (50.0)	U (50.0)	7280 (50.0)	14300 (50.0)	10960 (50.0)
Carbon																
Organic Carbon (total)	NE	161000 (50000)	1500 (1000)	2900 (1000)	NM	13000000 (1000000)	14200 (1000)	43400 (10000)	U (1000)	11800000 (1000000)	2590000 (500000)	212000 (25000)	U (1000)	4800 (1000)	570 J (1000)	2200 (1000)
Organic Carbon (dissolved)	NE	U (500000)	2000 (1000)	U (1000)	NM	11000000 (1000000)	1420000 (100000)	39300 (10000)	U (1000)	10100000 (1000000)	2530000 (500000)	203000 (25000)	U (1000)	4600 (1000)	730 J (1000)	1300 J (1000)
Anions																
Chloride	NE	148000 (20000)	200000 (50000)	189000 (20000)	NM	441000 (50000)	192000 (10000)	149000 (10000)	119000 (10000)	441000 (50000)	213000 (50000)	206000 (20000)	119,000 (10000)	98900 (10000)	129000 (10000)	110000 (10000)
Nitrogen	NE	U (100)	U (100)	75 J (100)	NM	320 (100)	1000 (100)	NM	30700 (2000)	410 M1 (100)	12800 (500)	3500 (100)	5600 (200)	U (100)	U (100)	NM
Nitrogen, Nitrate (As N)	NE	U (100)	U (100)	U (100)	NM	140 (100)	1000 (100)	NM	30700 (2000)	160 M1 (100)	12800 (500)	3400 (100)	5600 (200)	U (100)	U (100)	NM
Nitrogen, Nitrite	NE	U (100)	U (100)	69 J (100)	NM	180 (100)	U (100)	NM	U (100)	250 (100)	U (500)	140 (100)	U (200)	U (100)	U (100)	NM
Sulfate	NE	7300 (1000)	2800 (1000)	2800 (1000)	NM	186000 (20000)	23300 (2000)	19200 (2000)	100000 (10000)	239000 M1 (20000)	127000 (10000)	33900 (2000)	28900 (2000)	22300 (10000)	33100 (10000)	27200 (2000)
Gases																
Acetylene	NE	NM	U (0.50)	NM	NM	NM	UJ (0.50)	NM	NM	NM	UJ (0.50)	NM	NM	NM	UJ (0.50)	NM
Methane	NE	700 (0.50)	7700 (0.50)	7800 (0.50)	NM	900 (0.50)	9900 J (0.50)	12000 (0.50)	8.5 (0.50)	11000 (0.50)	12000 J (0.50)	13000 (0.50)	81 (0.50)	410 (0.50)	7800 J (0.50)	8800 (0.50)
Ethane	NE	1.6 (0.10)	1.1 (0.10)	2.1 (0.10)	NM	6.3 (0.10)	0.22 J (0.10)	0.16 (0.10)	0.44 (0.10)	1.5 (0.10)	0.31 J (0.10)	0.10 (0.10)	U (0.10)	0.31 (0.10)	0.26 J (0.10)	0.21 (0.10)
Ethene	NE	4.2 (0.10)	7.2 (0.10)	4.1 (0.10)	NM	31 (0.10)	1.1 J (0.10)	0.25 (0.10)	0.15 (0.10)	15 (0.10)	2.0 J (0.10)	1.3 (0.10)	U (0.10)	0.75 (0.10)	0.70 J (0.10)	0.30 (0.10)
Hydrogen (H2) [NM]4*	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Volatile Fatty Acids																
Acetic Acid	NE	62000 (10000)	2700 (1000)	180 (100)	NM	3800000 (100000)	290000 (10000)	17000 (1000)	U (5000)	4000000 (100000)	360000 (100000)	16000 (1000)	U (5000)	4000 (1000)	U (100)	100 U (100)
Butyric Acid	NE	12000 (1000)	U (1000)	100 U (100)	NM	1200000 (100000)	120000 (10000)	1900 (100)	U (5000)	1600000 (100000)	140000 (10000)	2700 (1000)	U (5000)	U (1000)	U (100)	100 U (100)
Lactic Acid	NE	U (2000)	U (2000)	200 U (200)	NM	220000 (20000)	U (20000)	200 U (200)	U (10000)	U (200000)	U (20000)	2000 U (2000)	U (10000)	U (2000)	U (200)	200 U (200)
Propionic Acid	NE	230000 (10000)	1400 (1000)	100 (100)	NM	19000000 (1000000)	2000000 (100000)	27000 (1000)	U (5000)	16000000 (1000000)	3900000 (100000)	110000 (10000)	U (5000)	15000 (1000)	U (100)	100 U (100)
Pyruvic Acid	NE	2100 (1000)	U (1000)	100 U (100)	NM	U (100000)	19000 (10000)	640 (100)	U (5000)	83000 (10000)	32000 (10000)	810 (100)	U (5000)	U (1000)	U (100)	100 U (100)

TABLE 2
LABORATORY ANALYTICAL RESULTS - PRB TREATMENT AREAS
ISCR MONITORING (JULY 2018 - December 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location		TMW-34				MW-61R					MW-91	MW-99	MW-185				MW
Field Sample ID	Remedial Action Levels per ADEQ RADD Issued Dec 2013	TMW-34-201811	TMW-34-201904	TMW-34-201910	TMW-34-201912	MW-61R-201807	MW-61R-201811	MW-61R-201904	MW-61R-201910	MW-61R-201912	MW-91-201912	MW-99-201912	MW-185-201807	MW-185-201811	MW-185-201904	MW-185-201910	MW-186-201807	MW-186-201811
Lab Sample ID(s)		60286849028	60300963010	60319241001	60323873001	60276306001	60286720002	60300963027	60319115043	60323873002	60323037002	60323037001	60276306002	6028684027	60300963011	60319241013	60276630002	60286849026
Sample Date		11/14/2018	04/25/2019	10/24/2019	12/7/2019	7/31/2018	11/13/2018	04/25/2019	10/23/2019	12/7/2019	12/3/2019	12/3/2019	7/31/2018	11/14/2018	04/25/2019	10/24/2019	8/3/2018	11/14/2018
Sample Method		Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Comments		PRB SE1				PRB Pilot Area (North Plume)					PRB-NE-1	PRB-NE-2	PRB SE1 (South Plume)					PRB S2 (Sc
Volatile Organic Compounds																		
Acetone	12000	6.4 J (1.9)	10.8 (3.3)	U (3.3)	U (3.3)	3.6 J (1.9)	3.7 J (1.9)	U (3.3)	U (3.3)	U (3.3)	U (3.3)	U (7.4)	3.7 J (1.9)	3.3 J (1.9)	U (3.3)	U (3.3)	2.8 J (1.9)	276 (9.4)
Benzene	5	U (0.060)	U (0.079)	U (0.079)	U (0.079)	U (0.060)	U (0.060)	U (0.079)	U (0.079)	U (0.079)	U (0.079)	U (0.13)	U (0.060)	U (0.060)	U (0.079)	U (0.079)	U (0.060)	U (0.30)
Bromomethane	7	U (0.16)	U (0.32)	U (0.32)	U (0.32)	U (0.16)	U (0.16)	U (0.32)	U (0.32)	U (0.32)	U (0.32)	U (2.8)	U (0.16)	U (0.16)	U (0.32)	U (0.32)	U (0.16)	U (0.80)
2-Butanone	4900	U (0.59)	1.7 J (0.70)	U (0.70)	U (0.70)	U (0.59)	U (0.59)	U (0.70)	U (0.70)	U (0.70)	U (0.70)	U (1.8)	U (0.59)	U (0.59)	U (0.70)	U (0.70)	U (0.59)	1250 (3.0)
Carbon Disulfide	720	U (0.12)	U (0.16)	0.27 J (0.16)	U (0.16)	U (0.12)	U (0.12)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.086)	U (0.12)	U (0.12)	U (0.16)	U (0.16)	U (0.12)	U (0.60)
Chlorobenzene	100	U (0.21)	U (0.13)	U (0.13)	U (0.13)	U (0.21)	U (0.21)	U (0.13)	U (0.13)	U (0.13)	U (0.13)	U (0.17)	U (0.21)	U (0.21)	U (0.13)	U (0.13)	U (0.21)	U (1.0)
Chloroform	80	U (0.14)	U (0.10)	U (0.10)	U (0.10)	U (0.14)	U (0.14)	U (0.10)	U (0.10)	U (0.10)	0.21 J (0.10)	U (0.25)	U (0.14)	U (0.14)	U (0.10)	U (0.10)	U (0.14)	U (0.70)
Chloromethane	190	U (0.080)	U (0.16)	U (0.16)	U (0.16)	U (0.080)	U (0.080)	U (0.16)	U (0.16)	U (0.16)	U (0.16)	U (0.51)	U (0.080)	U (0.080)	U (0.16)	U (0.16)	U (0.080)	U (0.40)
1,1-Dichloroethane	2.4	U (0.050)	U (0.097)	0.14 J (0.097)	0.18 J (0.097)	U (0.050)	U (0.050)	U (0.097)	U (0.097)	U (0.097)	1.3 (0.097)	U (0.12)	U (0.050)	U (0.050)	U (0.097)	0.27 J (0.097)	1.1 (0.050)	U (0.25)
1,2-Dichloroethane	5	0.19 J B (0.12)	U (0.14)	U (0.14)	0.17 J (0.14)	U (0.12)	0.17 J B (0.12)	U (0.14)	U (0.14)	U (0.14)	0.20 J (0.14)	U (0.33)	U (0.12)	0.15 J B (0.12)	U (0.14)	U (0.14)	0.14 J B (0.12)	U (0.60)
1,1-Dichloroethene	7	U (0.20)	U (0.22)	U (0.22)	0.56 J (0.22)	U (0.20)	U (0.20)	U (0.22)	U (0.22)	U (0.22)	3.6 (0.22)	0.42 J (0.14)	U (0.20)	0.25 J (0.20)	0.28 J (0.22)	0.67 J (0.22)	0.54 J (0.20)	U (1.0)
cis-1,2-Dichloroethene	70	1.5 (0.080)	2.2 (0.17)	6.9 (0.17)	10.3 (0.17)	1.8 (0.080)	1.9 (0.080)	1.1 (0.17)	1.7 (0.17)	1.0 (0.17)	27.6 (0.17)	4.1 (0.18)	1.4 (0.080)	2.6 (0.080)	3.4 (0.17)	6.3 (0.17)	4.5 (0.080)	6.5 (0.40)
trans-1,2-Dichloroethene	100	U (0.20)	U (0.17)	U (0.17)	U (0.17)	U (0.20)	U (0.20)	U (0.17)	U (0.17)	U (0.17)	0.57 J (0.17)	U (0.082)	U (0.20)	U (0.20)	U (0.17)	U (0.17)	U (0.20)	U (0.60)
Ethyl Benzene	700	U (0.18)	U (0.12)	U (0.12)	U (0.12)	U (0.18)	U (0.18)	U (0.12)	U (0.12)	U (0.12)	U (0.12)	U (0.20)	U (0.18)	U (0.18)	U (0.12)	U (0.12)	U (0.18)	U (0.90)
2-Hexanone	34	U (1.2)	U (1.0)	U (1.0)	U (1.0)	U (1.2)	U (1.2)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.60	U (1.2)	U (1.2)	U (1.0)	U (1.0)	U (1.2)	U (6.0)
4-Methyl-2-pentanone	1000	U (0.42)	U (0.56)	U (0.56)	U (0.56)	U (0.42)	U (0.42)	U (0.56)	U (0.56)	U (0.56)	U (0.56)	U (1.3)	U (0.42)	U (0.42)	U (0.56)	U (0.56)	U (0.42)	U (2.1)
Methylene Chloride	5	U (0.15)	U (0.27)	U (0.27)	U (0.27)	U (0.15)	U (0.15)	U (0.27)	U (0.27)	U (0.27)	U (0.27)	U (0.35)	U (0.15)	U (0.15)	U (0.27)	U (0.27)	U (0.42)	U (0.75)
1,1,2,2-Tetrachloroethane	0.066	U (0.15)	U (0.31)	U (0.31)	U (0.31)	U (0.15)	U (0.15)	U (0.31)	U (0.31)	U (0.31)	U (0.31)	U (0.23)	U (0.15)	U (0.15)	U (0.31)	U (0.31)	U (0.42)	U (0.75)
Tetrachloroethene	5	U (0.10)	U (0.22)	U (0.22)	U (0.22)	U (0.10)	U (0.10)	U (0.22)	U (0.22)	U (0.22)	4.4 (0.22)	U (0.14)	U (0.10)	U (0.10)	U (0.22)	U (0.22)	U (0.10)	U (0.50)
Toluene	1000	U (0.17)	U (0.14)	U (0.14)	U (0.14)	U (0.17)	U (0.17)	U (0.14)	U (0.14)	U (0.14)	U (0.14)	U (0.17)	U (0.17)	U (0.17)	U (0.14)	U (0.14)	U (0.17)	U (0.85)
1,1,2-Trichloroethane	5	U (0.20)	U (0.10)	U (0.10)	U (0.10)	U (0.20)	U (0.20)	U (0.10)	U (0.10)	U (0.10)	U (0.10)	U (0.12)	U (0.20)	U (0.20)	U (0.10)	U (0.10)	U (0.20)	U (1.0)
Trichloroethene	5	7.4 (0.17)	10.3 (0.17)	17.6 (0.17)	26.7 (0.17)	7.0 (0.17)	7.7 (0.17)	14.9 (0.17)	20.8 (0.17)	15.0 (0.17)	331 (1.7)	59.3 (0.097)	11.7 (0.17)	11.7 (0.17)	17.0 (0.17)	52.7 (0.17)	17.7 (0.17)	10.2 F1 (0.85)
Vinyl Chloride	2	U (0.13)	U (0.11)	U (0.11)	U (0.11)	U (0.13)	U (0.13)	U (0.11)	U (0.11)	U (0.11)	0.16 J (0.11)	U (0.17)	U (0.13)	U (0.13)	U (0.11)	0.12 J (0.11)	0.15 J (0.13)	U (0.65)
Metals																		
Iron	NE	109 (50.0)	2360 (50.0)	2110 (50.0)	NM	11900 (50.0)	10700 (50.0)	9980 (50.0)	9690 (50.0)	NM	76 (50.0)	895 (50.0)	10100 (50.0)	46.0 J (50.0)	826 (50.0)	NM	127 (50.0)	588000 (250)
Iron, Ferric	NE	U (0.50)	2090 (50.0)	570 (50.0)	NM	8600 (200)	9550 (0.50)	8800 (50.0)	7560 (50.0)	NM	76 (50.0)	895 (50.0)	9900 (50.0)	26 (50.0)	766 (50.0)	NM	120 (50.0)	585000 (250)
Carbon																		
Organic Carbon (total)	NE	720 J (1000)	3000 (1000)	560 J (1000)	NM	860 J (1000)	710 J (1000)	470 J (1000)	380 J (1000)	NM	380 J (1000)	U (1000)	370 J (1000)	U (1000)	690 J (1000)	NM	U (1000)	9150000 (1000000)
Organic Carbon (dissolved)	NE	840 J (1000)	1900 (1000)	6500 (1000)	NM	830 J (1000)	810 J (1000)	670 J (1000)	570 J (1000)	NM	530 J (1000)	570 J (1000)	900 J (1000)	U (1000)	540 J (1000)	NM	U (1000)	8980000 (1000000)
Anions																		
Chloride	NE	22400 (5000)	23500 (2000)	26000 (2000)	NM	102000 (10000)	120000 (50000)	129000 (10000)	109000 (20000)	NM	80600 (10000)	18300 (10000)	17100 (10000)	18800 (1000)	21700 (2000)	NM	92200 (10000)	260000 (20000)
Nitrogen	NE	U (100)	870 (100)	NM	NM	U (100)	U (100)	U (100)	69 J (100)	NM	1700 (100)	1800 (100)	820 (100)	5100 (500)	4800 (100)	NM	11200 (500)	130 D6 H1 (100)
Nitrogen, Nitrate (As N)	NE	U (100)	870 (100)	NM	NM	U (100)	U (100)	U (100)	U (100)	NM	1700 (100)	1800 (100)	210 (100)	5000 (500)	4800 (100)	NM	11200 (500)	U H1 (100)
Nitrogen, Nitrite	NE	U (100)	U (100)	NM	NM	U (100)	U (100)	U (100)	U (100)	NM	U (100)	U (100)	610 (100)	U (500)	U (100)	NM	U (500)	140 D6 H1 (100)
Sulfate	NE	9200 (1000)	9400 (1000)	10400 (1000)	NM	9100 (1000)	8000 (1000)	12100 (1000)	12100 (1000)	NM	11400 (1000)	6000 (1000)	8200 (1000)	7700 (1000)	8000 (1000)	NM	106000 (10000)	1400 (1000)
Gases																		
Acetylene	NE	NM	U (0.50)	NM	NM	NM	NM	U (0.50)	NM	NM	NM	NM	NM	NM	U (0.50)	NM	NM	NM
Methane	NE	4700 (0.50)	13000 (0.50)	8400 (0.50)	NM	8400 (0.50)	6600 (0.50)	4300 (0.50)	3400 (0.50)	NM	1 (0.50)	1.2 (0.50)	0.64 (0.50)	U (0.50)	0.62 (0.50)	NM	U (0.50)	14000 (0.50)
Ethane	NE	1.1 (0.10)	0.86 (0.10)	0.24 (0.10)	NM	0.26 (0.10)	0.70 (0.10)	U (0.10)	0.10 (0.10)	NM	U (0.10)	U (0.10)	U (0.10)	U (0.10)	0.65 (0.10)	NM	U (0.10)	0.50 (0.10)
Ethene	NE	0.73 (0.10)	0.11 (0.10)	0.10 (0.10)	NM	U (0.10)	U (0.10)	U (0.10)	0.10 (0.10)	NM	U (0.10)	U (0.10)	0.17 (0.10)	U (0.10)	U (0.10)	NM	U (0.10)	6.6 (0.10)
Hydrogen (H2) [NM]4*	NE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Volatile Fatty Acids																		
Acetic Acid	NE	1800 (1000)	620 (100)	100 U (100)	NM	U (5000)	1900 (1000)	U (100)	340 (100)	NM	170 (100)	200 (100)	U (5000)	2800 (1000)	U (100)	NM	U (5000)	3500000 (100000)
Butyric Acid	NE	U (1000)	U (100)	100 U (100)	NM	U (5000)	U (1000)	U (100)	100 U (100)	NM	U (100)	U (100)	U (5000)	U (1000)	U (100)	NM	U (5000)	1000000 (100000)
Lactic Acid	NE	NM	U (200)	200 U (200)	NM	U (10000)	U (2000)	U (200)	200 U (200)	NM	U (200)	U (200)	U (10000)	NM	U (200)	NM	U (10000)	NM
Propionic Acid	NE	U (1000)	U (100)	100 U (100)	NM	U (5000)	U (1000)	U (100)	220 (100)	NM	U (100)	110 (100)	U (5000)	2500 (1000)	U (100)	NM	U (5000)	14000000 (1000000)
Pyruvic Acid	NE	NM	U (100)	100 U (100)	NM	U (5000)	U (1000)	U (100)	100 U (100)	NM	U (100)	U (100)	U (5000)	NM	U (100)	NM	U (5000)	NM

TABLE 2
LABORATORY ANALYTICAL RESULTS - PRB TREATMENT AREAS
ISCR MONITORING (JULY 2018 - December 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued Dec 2013	-186	
Field Sample ID		MW-186-201904	MW-186-201910
Lab Sample ID(s)		60301142001	60319241003
Sample Date		04/26/2019	10/24/2019
Sample Method		Low Flow	Low Flow
Comments		uth Plume)	
Volatile Organic Compounds			
Acetone	12000	659 (3.3)	U (3.3)
Benzene	5	U (0.079)	U (0.079)
Bromomethane	7	U (0.32)	U (0.32)
2-Butanone	4900	5050 (36.0)	U (0.70)
Carbon Disulfide	720	3.2 J (0.16)	0.81 J (0.16)
Chlorobenzene	100	U (0.13)	U (0.13)
Chloroform	80	U (0.10)	U (0.10)
Chloromethane	190	U (0.16)	U (0.16)
1,1-Dichloroethane	2.4	U (0.097)	U (0.097)
1,2-Dichloroethane	5	U (0.14)	U (0.14)
1,1-Dichloroethene	7	U (0.22)	U (0.22)
cis-1,2-Dichloroethene	70	8.8 (0.17)	3.0 (0.17)
trans-1,2-Dichloroethene	100	U (0.17)	U (0.17)
Ethyl Benzene	700	U (0.12)	U (0.12)
2-Hexanone	34	7.3 J (1.0)	U (1.0)
4-Methyl-2-pentanone	1000	1.0 J (0.56)	0.68 J (0.56)
Methylene Chloride	5	U (0.27)	U (0.27)
1,1,2,2-Tetrachloroethane	0.066	U (0.31)	U (0.31)
Tetrachloroethene	5	U (0.22)	U (0.22)
Toluene	1000	0.22 J (0.14)	U (0.14)
1,1,2-Trichloroethane	5	U (0.10)	U (0.10)
Trichloroethene	5	5.6 (0.17)	2.9 (0.17)
Vinyl Chloride	2	0.14 J (0.11)	2.2 (0.11)
Metals			
Iron	NE	41400 (50.0)	39400 (50.0)
Iron, Ferric	NE	40000 (50.0)	37740 (50.0)
Carbon			
Organic Carbon (total)	NE	10200 (1000)	40100 (10000)
Organic Carbon (dissolved)	NE	1060000 (100000)	34100 (10000)
Anions			
Chloride	NE	155000 (10000)	155000 (10000)
Nitrogen	NE	UJ (100)	NM
Nitrogen, Nitrate (As N)	NE	UJ (100)	NM
Nitrogen, Nitrite	NE	UJ (100)	NM
Sulfate	NE	13700 (1000)	6500 (1000)
Gases			
Acetylene	NE	NM	NM
Methane	NE	NM	12000 (0.50)
Ethane	NE	NM	0.10 (0.10)
Ethene	NE	NM	0.55 (0.10)
Hydrogen (H2) [NM]4*	NE	NM	NM
Volatile Fatty Acids			
Acetic Acid	NE	NM	1400 (100)
Butyric Acid	NE	NM	100 U (100)
Lactic Acid	NE	NM	200 U (200)
Propionic Acid	NE	NM	460 (100)
Pyruvic Acid	NE	NM	100 U (100)

TABLE 2
LABORATORY ANALYTICAL RESULTS - PRB TREATMENT AREAS
ISCR MONITORING (JULY 2018 - December 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Remedial Action Levels per ADEQ RADD Issued Dec 2013	MW-194			
Field Sample ID		MW-194-201807	MW-194-201811	MW-194-201904	MW-194-201910
Lab Sample ID(s)		60276306003	60286849029	60300963017	60319115042
Sample Date		7/31/2018	11/14/2018	04/25/2019	10/23/2019
Sample Method		Low Flow	Low Flow	Low Flow	Low Flow
Comments		PRB N3 (North Plume)			
Volatile Organic Compounds					
Acetone	12000	3.2 J (1.9)	U (1.9)	10.1 (3.3)	4.2 J (3.3)
Benzene	5	U (0.060)	U (0.060)	U (0.079)	U (0.079)
Bromomethane	7	U (0.16)	U (0.16)	U (0.32)	U (0.32)
2-Butanone	4900	U (0.59)	U (0.59)	5.2 J (0.70)	U (0.70)
Carbon Disulfide	720	U (0.12)	U (0.12)	U (0.16)	U (0.16)
Chlorobenzene	100	U (0.21)	U (0.21)	U (0.13)	U (0.13)
Chloroform	80	U (0.14)	U (0.14)	U (0.10)	U (0.10)
Chloromethane	190	U (0.080)	U (0.080)	U (0.16)	U (0.16)
1,1-Dichloroethane	2.4	U (0.050)	U (0.050)	U (0.097)	U (0.097)
1,2-Dichloroethane	5	U (0.12)	U (0.12)	U (0.14)	U (0.14)
1,1-Dichloroethene	7	U (0.20)	U (0.20)	U (0.22)	U (0.22)
cis-1,2-Dichloroethene	70	0.79 J (0.080)	0.87 J (0.080)	0.75 J (0.17)	0.97 J (0.17)
trans-1,2-Dichloroethene	100	U (0.20)	U (0.20)	U (0.17)	U (0.17)
Ethyl Benzene	700	U (0.18)	U (0.18)	U (0.12)	U (0.12)
2-Hexanone	34	U (1.2)	U (1.2)	U (1.0)	U (1.0)
4-Methyl-2-pentanone	1000	U (0.42)	U (0.42)	U (0.56)	U (0.56)
Methylene Chloride	5	U (0.15)	U (0.15)	U (0.27)	U (0.27)
1,1,2,2-Tetrachloroethane	0.066	U (0.15)	U (0.15)	U (0.31)	U (0.31)
Tetrachloroethene	5	U (0.10)	U (0.10)	U (0.22)	U (0.22)
Toluene	1000	U (0.17)	U (0.17)	U (0.14)	U (0.14)
1,1,2-Trichloroethane	5	U (0.20)	U (0.20)	U (0.10)	U (0.10)
Trichloroethene	5	13.3 (0.17)	10.7 (0.17)	8.6 (0.17)	10.8 (0.17)
Vinyl Chloride	2	U (0.13)	U (0.13)	U (0.11)	U (0.11)
Metals					
Iron	NE	19400 (50.0)	8260 (50.0)	4630 (50.0)	6940 (50.0)
Iron, Ferric	NE	18900 (50.0)	7650 (50.0)	1630 (50.0	4790 (50.0)
Carbon					
Organic Carbon (total)	NE	260 J (1000)	U (1000)	13400 (1000)	630 J (1000)
Organic Carbon (dissolved)	NE	1100 B (1000)	U (1000)	13500 (1000)	580 J (1000)
Anions					
Chloride	NE	167000 (10000)	150000 H1 (20000)	177000 (10000)	155000 (20000)
Nitrogen	NE	210 (100)	U H1 (100)	U (100)	53 J (100)
Nitrogen, Nitrate (As N)	NE	U (100)	U H1 (100)	U (100)	U (100)
Nitrogen, Nitrite	NE	390 (100)	U H1 (100)	U (100)	U (100)
Sulfate	NE	8900 (1000)	9100 H1 (1000)	11900 (10000)	10200 (1000)
Gases					
Acetylene	NE	NM	NM	U (0.50)	NM
Methane	NE	U (0.50)	870 H1 (0.50)	6800 (0.50)	9200 (0.50)
Ethane	NE	U (0.10)	0.26 H1 (0.10)	1.3 (0.10)	0.24 (0.10)
Ethene	NE	0.14 (0.10)	0.27 H1 (0.10)	0.29 (0.10)	0.12 (0.10)
Hydrogen (H2) [NM]4*	NE	NM	NM	NM	NM
Volatile Fatty Acids					
Acetic Acid	NE	U (5000)	2500 (1000)	12000 (1000)	1800 (100)
Butyric Acid	NE	U (5000)	U (1000)	U (1000)	100 U (100)
Lactic Acid	NE	U (10000)	NM	U (2000)	200 U (200)
Propionic Acid	NE	U (5000)	U (1000)	32000 (1000)	260 (100)
Pyruvic Acid	NE	U (5000)	NM	U (1000)	100 U (100)

TABLE 3
SUMMARY OF TCE CONCENTRATIONS IN ISCR INJECTION AREAS - PRB TREATMENT ZONES
(JULY 2018 - December 2019)
Whirlpool Facility - Fort Smith, Arkansas

MW-61R Phase II Permeable Reactive Barrier Treatment Zone

Sampling Event	Week of Date	MW-61R[d]	TMW-10
Baseline	7/30/2018	7.0	91.1
450 Days After Injection	10/21/2019	20.8	8.6
490 Days After Injection	12/2/2019	15.0	NA
	Percent Reduction	-114.3%	90.6%

North Plume Permeable Reactive Barrier Treatment Zone

Sampling Event	Week of Date	TMW-21	TMW-22[a]	MW-194
Baseline	7/30/2018	564	460	13.3
450 Days After Injection	10/21/2019	21.8	146	10.8
	Percent Reduction	96.1%	68.3%	18.8%

South Plume Permeable Reactive Barrier Treatment Zone

Sampling Event	Week of Date	MW-186	TMW-16	TMW-32	TMW-26	TMW-25[b]
Baseline	7/30/2018	17.7	988	83.5	96.1	240
450 Days After Injection	10/21/2019	2.9	6.0	29.2	42.9	23.6
	Percent Reduction	83.6%	99.4%	65.0%	55.4%	90.2%

Southeast Permeable Reactive Barrier Treatment Zone

Sampling Event	Week of Date	MW-185[c]	TMW-34[d]
Baseline	7/30/2018	11.7	NS
450 Days After Injection	10/21/2019	52.7	17.6
490 Days After Injection	12/2/2019	NA	26.7
	Percent Reduction	-350.4%	NA

Notes:

TCE = Trichloroethylene

Concentrations in micrograms per liter (µg/L)

NS = Not Sampled

NA = Not Applicable

[a]Replacement well TMW-22R installed during week of November 5, 2018; July 2018 TCE concentrations from original TMW-22.

[b]Baseline data for TMW-25 collected during week of April 19, 2018.

[c]MW-185 located upgradient from Treatent zone

RAMBOLL

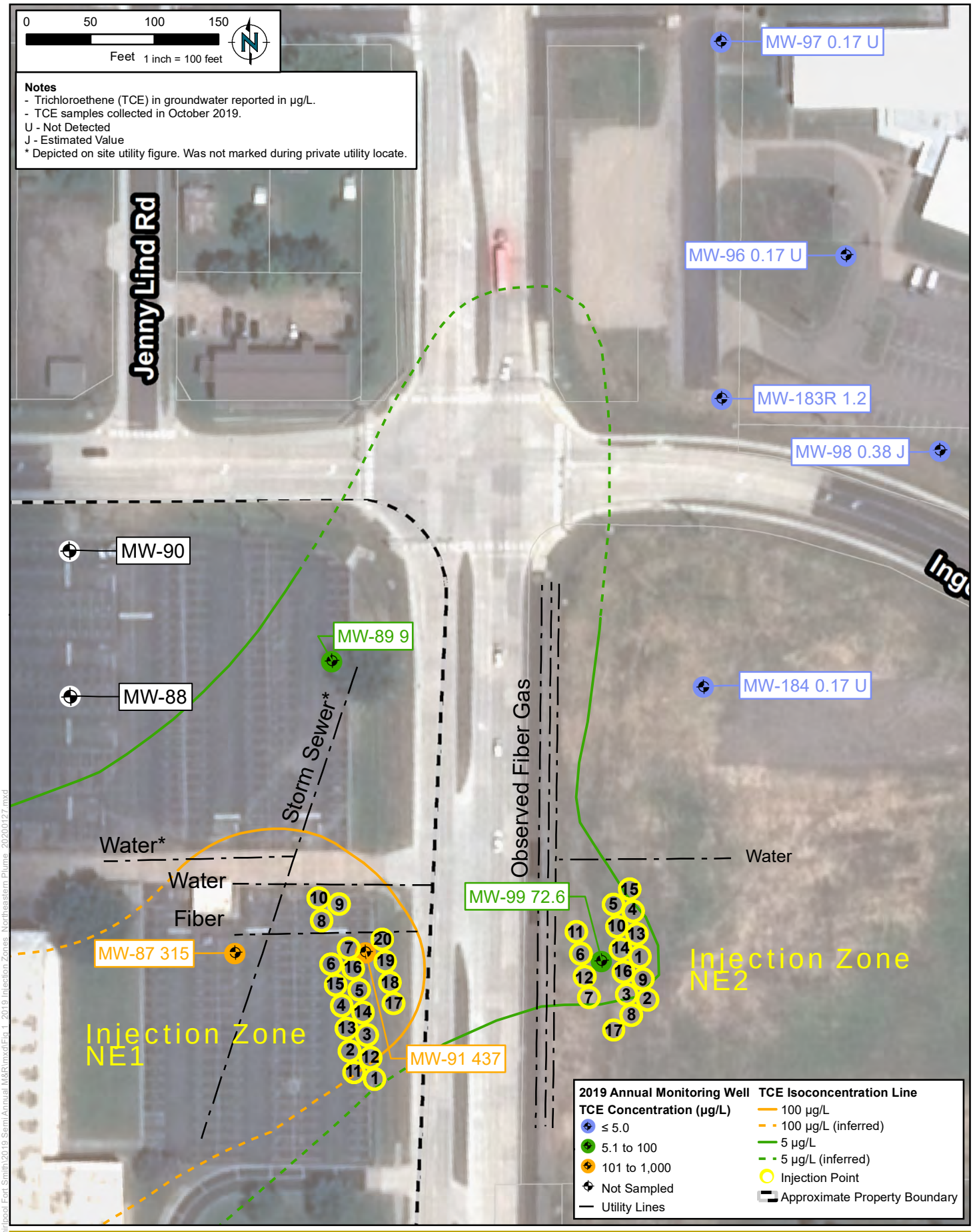
TABLE 4
INJECTION EVENT SUMMARY (December 6 - 8, 2019)
Whirlpool Facility - Fort Smith, Arkansas

Injection Location	Date	Injection Depth(s) (feet bgs)		Total Depth (feet bgs)	Comments
PRB-NE-1-1	12/6	17-19	19-21	22	Injected 80 gal to each interval
PRB-NE-1-2	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-3	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-4	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-5	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-6	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-7	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-8	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-9	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-10	12/6	18-20	21-23	24	Injected 80 gal to each interval, deep injection was tight, surfacing of 5-10 gallons
PRB-NE-1-11	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-12	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-13	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-14	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-15	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-16	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-17	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-18	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-19	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-1-20	12/6	18-20	21-23	24	Injected 80 gal to each interval
PRB-NE-2-1	12/7	17-19	20-22	23	80 gal deep interval, 40 gal shallow. Surfacing of material halfway through shallow injection.
PRB-NE-2-2	12/7	17-19	20-22	23	80 gal deep, 120 gal shallow to make up for PRB-NE-2-1
PRB-NE-2-3	12/7	17-19	20-22	23	80 gal deep, shallow too tight, stopped after 40 gal
PRB-NE-2-4	12/7	17-19	20-22	23	120 gal deep, 40 gal shallow
PRB-NE-2-5	12/7	17-19	20-22	23	120 gal deep, 40 gal shallow
PRB-NE-2-6	12/7	17-19	20-22	23	120 gal deep, 40 gal shallow
PRB-NE-2-7	12/7	17-19	20-22	23	120 gal deep, 80 gal shallow
PRB-NE-2-8	12/7	17-19	20-22	23	120 gal deep, 80 gal shallow
PRB-NE-2-9	12/7	17-19	20-22	23	120 gal deep, 80 gal shallow
PRB-NE-2-10	12/7	17-19	20-22	23	120 gal deep, 40 gal shallow

Notes:
feet bgs: Feet below ground surface

RAMBOLL

Figures



RAMBOLL

DRAFTED BY: FK | DATE: 01/27/2020

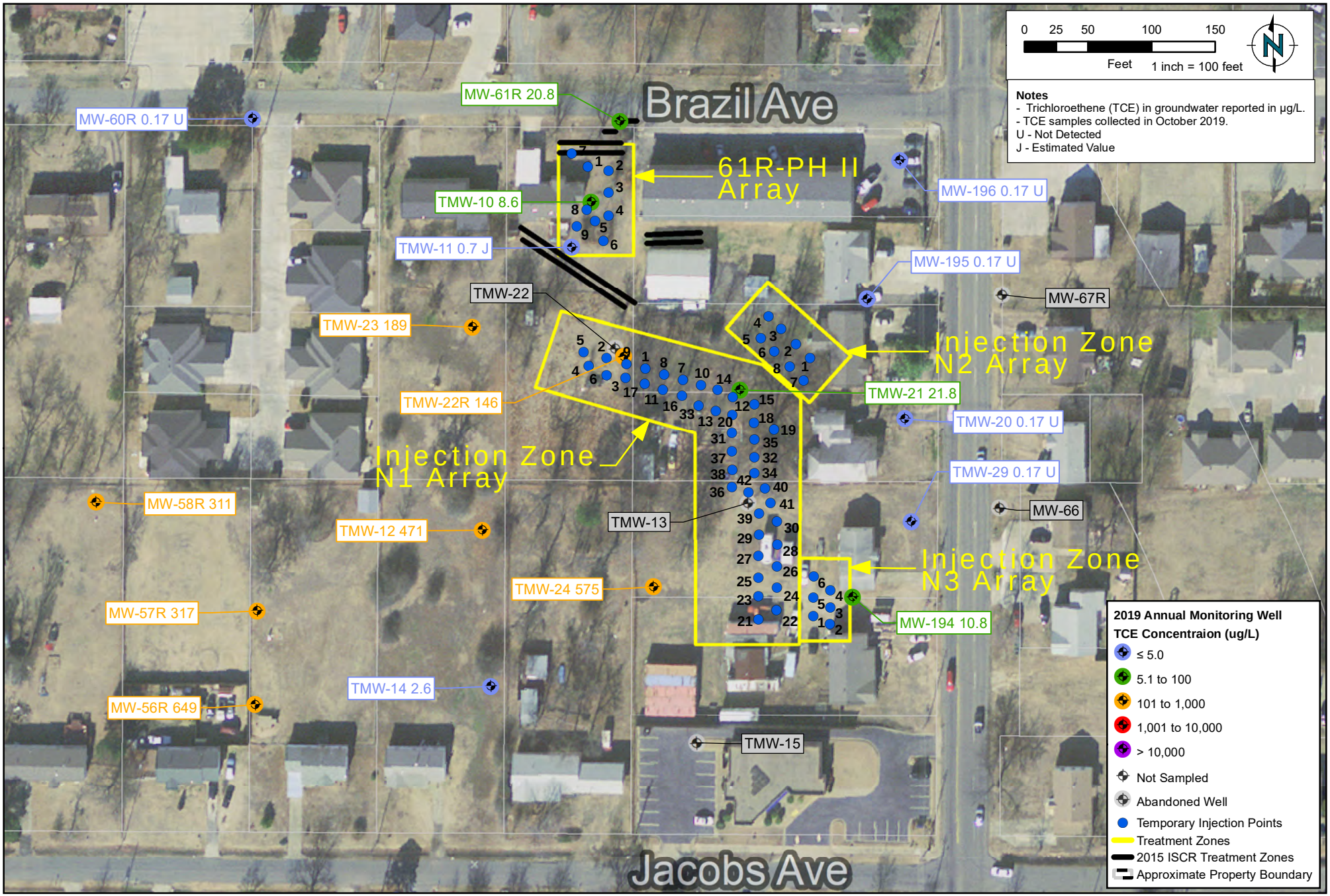
2019 TREATMENT ZONE INJECTION POINTS NORTHEASTERN PLUME

Whirlpool Facility - Fort Smith, Arkansas

Figure 1

PROJECT: 1690015112

FILE: L:\Loop Project Files\Whirlpool Fort Smith\2019 Semi-Annual M&R\mxd\Fig 1_2019 Injection Zones_Northeastern Plume_20200127.mxd



RAMBOLL

DRAFTED BY: FK | DATE: 01/27/2020

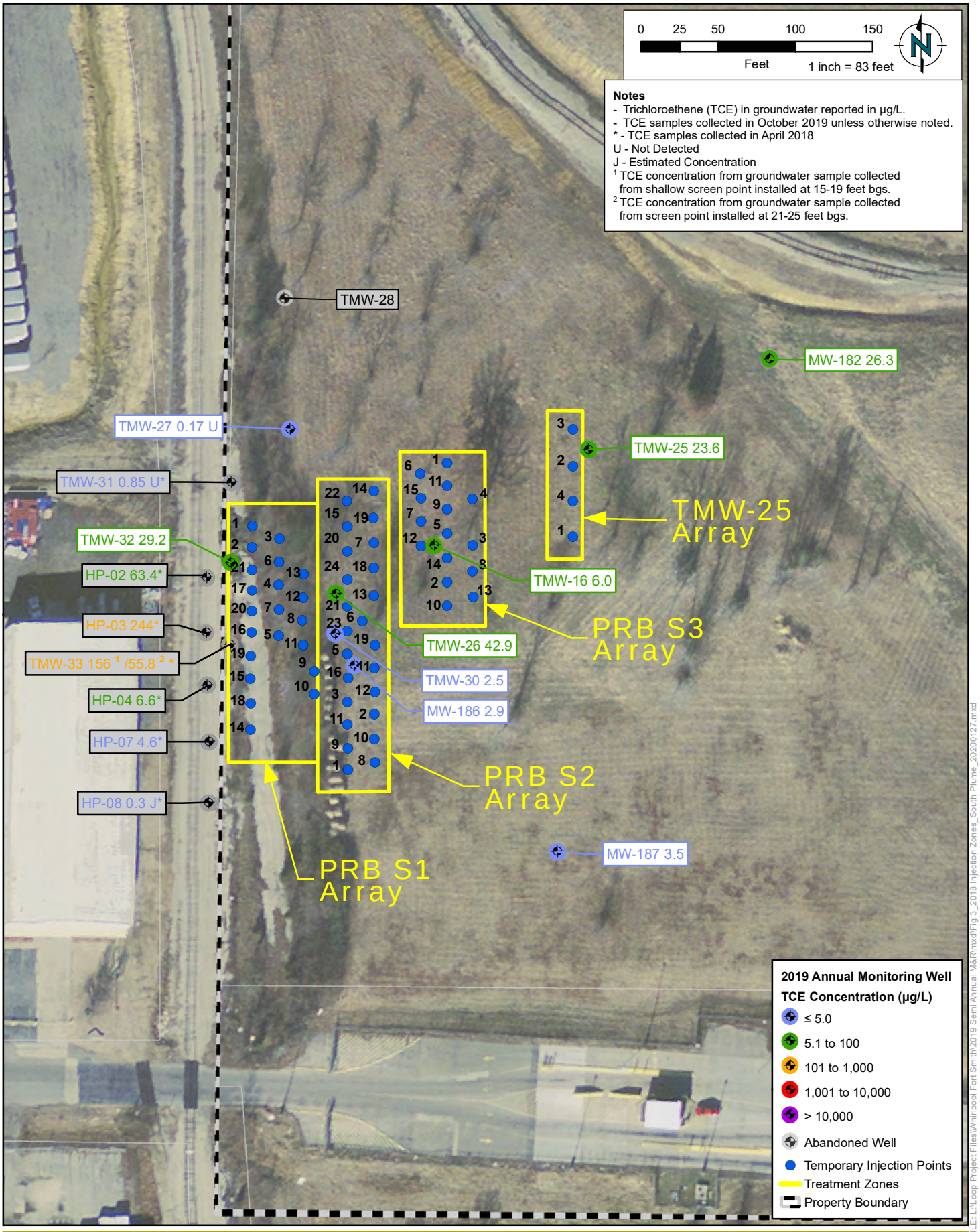
2018 TREATMENT ZONE INJECTION POINTS NORTH PLUME (TCE CONCENTRATIONS OCTOBER 2019)

Former Whirlpool Facility - Fort Smith, Arkansas

Figure 2

PROJECT: 1690015112

FILE: L:\Loop Project Files\Whirlpool Fort Smith\2019 Semi Annual M&R\mxd\Fig 2_2018 Injection Zones_North Plume_20200127.mxd



FILE: L:\Loop Project Files\Whirlpool Fort Smith\2019 Semi Annual M&R\mxd\Fig 3_2018 Injection Zones_South Plume_20200127.mxd

RAMBOLL

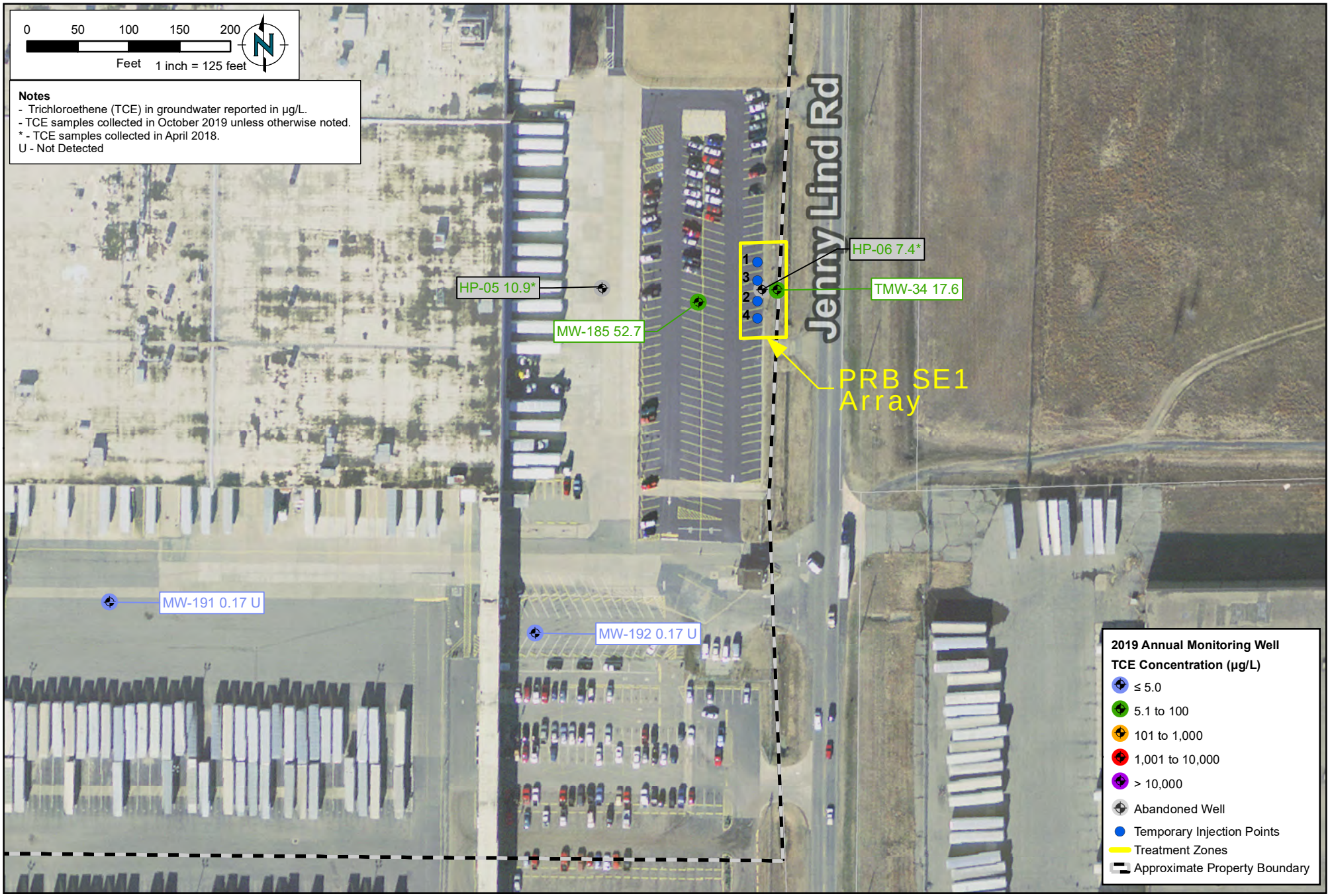
DRAFTED BY: FK | DATE: 01/27/2020

2018 TREATMENT ZONE INJECTION POINTS
SOUTH PLUME
(TCE CONCENTRATIONS OCTOBER 2019)

Former Whirlpool Facility - Fort Smith, Arkansas

Figure 3

PROJECT: 1690015112



RAMBOLL

DRAFTED BY: FK | DATE: 01/27/2020

2018 TREATMENT ZONE INJECTION POINTS SOUTHEASTERN PLUME (TCE CONCENTRATIONS OCTOBER 2019)

Former Whirlpool Facility - Fort Smith, Arkansas

Figure 4

PROJECT: 1690015112

FILE: L:\Loop Project Files\Whirlpool Fort Smith\2019 Semi Annual M&R\mxd\Fig 4_2018 Injection Zones_Southeastern Plume_20200127.mxd

Appendix A
IET Report

Innovative Environmental Technologies, Inc.

Technology Discussion and Field Report

To

Ramboll

For

The Application Of

"In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies"

At

Former Whirlpool Facility
Fort Smith, AR

December 2019

Innovative Environmental Technologies, Inc.
6071 Easton Road
Pipersville, PA 18947
(888) 721-8283
www.iet-inc.net

Contents

Executive Summary 2

Introduction 3

Remediation Implementation 3

- **Injection Procedures** 3
- **Direct-Push-Driven Perforated Rod Placement** 3
- **ZVI, Organic Hydrogen, Nutrient and Vitamin Injection** 4
- **Liquid Rinse** 4
- **Post Injection Line Purge** 4
- **Site Map** 4

PRB-NE 1 Area 5

PRB-NE 3 Area 5

Conclusion 6

Appendix A – Injection Logs 7

Executive Summary

On behalf of Ramboll, Innovative Environmental Technologies, Inc. (IET) has prepared the following injection report. This report has been prepared to document remediation activities conducted at the site.

The injection program was implemented from December 6th to December 9th, 2019. The remedial approach employed synergistic reductive dechlorination chemistry, utilizing zero valent iron, various organic hydrogen donors, nutrients and vitamins. The integration of both abiotic and biotic remedial compounds allow for rapid dechlorination reactions and long lasting biological attenuation.

The injections were completed in the form of two permeable reactive barriers transecting the downgradient sections of the plume at the northeast end of the whirlpool facility and across the street at the adjacent property. The total injected reagent contained 4,468 pounds of Zero Valent Iron, 365 pounds of Nutrient, 1,525 pounds of Hydrolyzed Kelp, 487 pounds of Sodium Sulfite, 7,352 pounds of Provect-IR, 3,625 pounds of Calcium Propionate, 365 pounds of Yeast Extract, 487 pounds of Magnesium Hydroxide, 114 gallons of AMR compound, 495 grams of Vitamin B12 and 3435 grams of Vitamin B2 suspended in water to create approximately 5,760 gallons of injectant volume. The design was implemented as proposed with some field modifications that were implemented by Ramboll and IET. The layout of the locations in NE1 were adjusted due to utilities, and four NE1 locations were moved to NE3. Injection intervals were also adjusted slightly in the field in NE1 to correlate with the nearest soil profile. Scheduling did not allow time to complete the MW-189 area that was originally proposed, plans are to complete that PRB in early 2020. The point by point dosages along with any field adjustments and instances of surfacing are also noted in the attached field logs.

Introduction

The former Whirlpool site located in Fort Smith, Arkansas was identified as having soils and groundwater impacted by the historical release of chlorinated solvents. The primary compounds of concern were Trichloroethene (TCE) and its associated daughter products. An injection program was proposed by IET for the remediation of CVOC impacts along the northeastern edge of the plume utilizing direct push tooling and synergistic reductive dechlorination technologies.

Remediation Implementation

Injection Procedures

IET completed the twenty-six injection locations across two areas at the site. Details regarding each injection attempt are provided in the field logs in the Appendix.

Direct-Push-Driven Perforated Rod Placement



FIGURE 1: AMS 9500 VTR

An AMS unit comparable to the one pictured in Figure 1, was utilized to drive the injection screen (as seen in Figure 2) to depths ranging from 11 to 30 feet below ground surface (bgs). It is at these depths, that the likelihood exists of being in close proximity to the targeted waters in the more permeable layers that were identified during characterization of the site. These more permeable layers are those believed to have historically provided the preferential pathways taken by the dissolved-phase CVOCs.

Subsurface Pathway Development

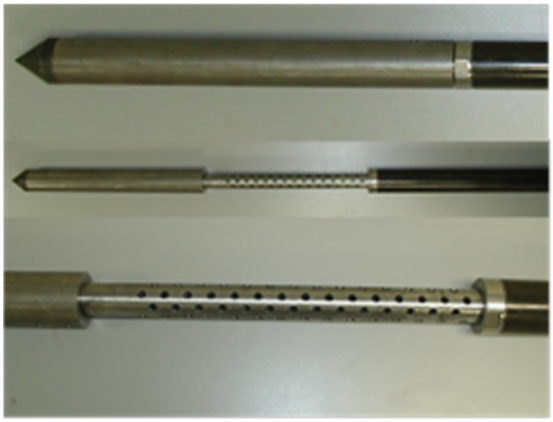


FIGURE 2: RETRACTABLE INJECTION SCREEN

Compressed nitrogen was used to propel injectants into the subsurface. Compressed nitrogen was first injected into the subsurface at approximately 150 pounds per square inch (psi) until a significant pressure drop was observed at the injection pressure vessel. This process is referred to as pathway development. The intent of this step is to open pathways in the subsurface for the injectants to follow. These pathways are believed to be those more permeable pathways along which CVOCs are more likely to have migrated, both in the vadose and saturated zones. Liquid and liquid-entrained injectants are then delivered with pressurized gas to the pathways that were produced during the development step.

ZVI, Organic Hydrogen, Nutrient and Vitamin Injection

A colloidal suspension of 1-3-micron zero valent iron (ZVI) was immediately injected into the subsurface fractures and voids that were developed during the compressed nitrogen injection step. Immediately following, under constant pressure the injectant slurry was then introduced.

Liquid Rinse

A small amount of water was injected to clear the injection lines of the injectant and promotes mounding of groundwater into the vadose zone.

Post Injection Line Purge

Compressed nitrogen was injected to clear the lines of all material and to force the remedial components further into the formation before moving to the next injection location.

Northeast PRB Locations Map

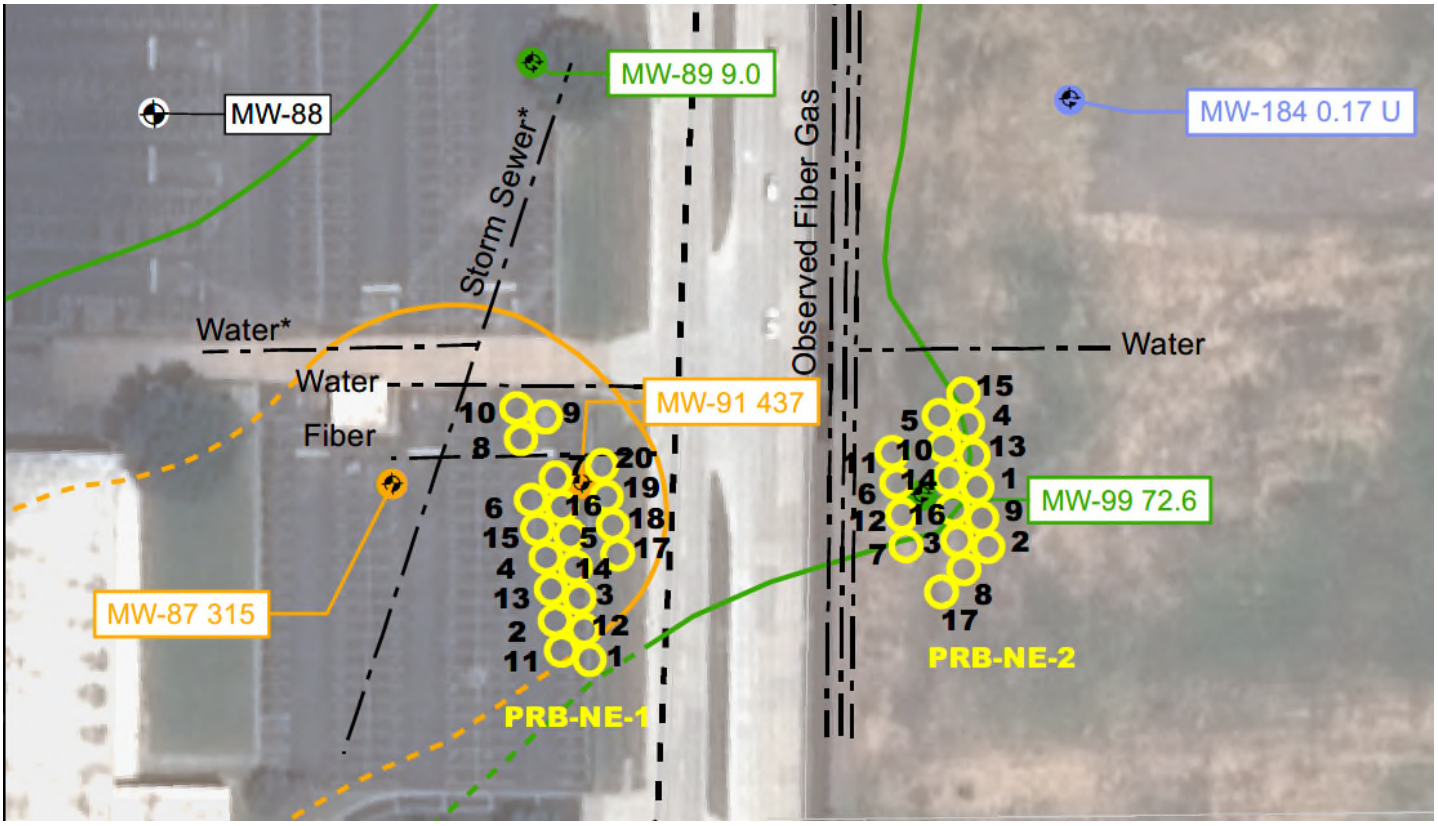


FIGURE 3: NORTH PLUME PRBS – INJECTION LOCATIONS

PRB-NE1 Area

This area included 20 injection points targeting an approximate 3,532 sq. ft. area at depths between 18-23' below grade. The PRB consisted of three lines of points installed both up and downupgradient of MW-91. This area was completed as proposed with field modifications, such as shifting the locations of some locatoins and creating another line of locations downgradient of MW-91. Proposed injection volumes were also slightly decreased to minimize instances of daylighting. The depths were adjusted across the PRB based off the nearest soil profile available. Four originally proposed NE1 area locations were relocated to NE3. Aside from these instances all the proposed injectant was introduced to the subsurface.

PRB-NE3 Area

This area included 16 injection points targeting an approximate 2,826 sq. ft. area at depths between 17-22' below grade. The PRB consisted of three lines of points installed both up and downgradient of MW-99. This area was completed as proposed with field modification such as the addition of four locations immediately upgradient of MW-99. The volumes were adjusted across the PRB based due to the prescense of a less permeable soil interface from ~17-20' bgs, in a number of locations 75% of the proposed volume was injected 20-22' and 25% of the total volume for the location was injected at 17-19'. Three of four instances of daylighting were observed during the completion of this area and an additional location was added (NE3-17) but all the proposed injectant was ultimately introduced to the subsurface.

Conclusion

The injection program at the former Whirlpool site was implemented based on the proposed design with field modifications that were required due to site conditions and decisions made by Ramboll and IET personell. All proposed injectants were ultimately introduced at the depths associated with groundwater flow across both permeable reactive barriers. One additional injection point was added in PRBNE3 due to very tight soils and refusal at PRBNE3-15. Four locations were moved from PRBNE1 to PRBNE3, and the originally planned MW-189 PRB is planned to be completed in the near future. It is expected that the injection event will yield positive results in the two targeted areas and IET looks forward the assessing the data following future sampling events.

Appendix A – Injection Logs

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/6/2019**

Time:	**8:05 AM** to **8:23 AM**	**7:56 AM** to **8:05 AM**

PRB-NE1 1	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	17-19'	10-12'	19-21'	18-21'	17-21'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: Whirlpool-Fort Smith AR 2019 Injections

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: 12/6/2019

Time: 8:35 AM to 8:45 AM | 8:26 AM to 8:34 AM

PRB-NE1 2	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: Whirlpool-Fort Smith AR 2019 Injections

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: 12/6/2019

Time:	8:59 AM to 9:09 AM	8:47 AM to 8:58 AM

PRB-NE1 3	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: Whirlpool-Fort Smith AR 2019 Injections

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: 12/6/2019

Time: 9:19 AM to 9:26 AM | 9:10 AM to 9:19 AM

PRB-NE1 4	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/6/2019**

Time: **9:40 AM** to **9:48 AM** **9:30 AM** to **9:40 AM**

PRB-NE1 5	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/6/2019**

Time: **10:00 AM** to **10:09 AM** **9:50 AM** to **9:59 AM**

PRB-NE1 6	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/6/2019**

Time: **10:18 AM** to **10:33 AM** **10:10 AM** to **10:17 AM**

PRB-NE1 7	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/6/2019**

Time: **10:41 AM** to **10:51 AM** **10:34 AM** to **10:41 AM**

PRB-NE1 8	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: Whirlpool-Fort Smith AR 2019 Injections

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: 12/6/2019

Time: 11:01 AM to 11:13 AM 10:52 AM to 11:00 AM

PRB-NE1 9	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	5	7.6	12.6	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/6/2019**

	Injection #1		Injection #2	
Time:	**11:30 AM** to **11:38 AM**		**11:13 AM** to **11:29 AM**	

PRB-NE1 10	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations: very tight from 21-23'

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/6/2019**

	Injection #1		Injection #2	
Time:	**11:52 AM** to **12:00 PM**		**11:44 AM** to **11:52 AM**	

PRB-NE1 11	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/6/2019**

	Injection #1		Injection #2		Summary	
Time:	**2:02 PM to 2:12 PM**		**1:55 PM to 2:02 PM**			
PRB-NE1 12	**Actual**	**Proposed**	**Actual**	**Proposed**	**Actual**	**Proposed**
Injection Zone	**18-20'**	**10-12'**	**21-23'**	**18-21'**	**18-23'**	**10-21'**
Fracture Duration (sec)	**3**	**3**	**3**	**3**		
Pathway Development (psi)	**150**	**150**	**150**	**150**		
Estimated ROI (ft)	**7.5**	**7.5**	**7.5**	**7.5**		
AMR compound (gals)	**1.55**	**1.55**	**1.55**	**1.55**	**3.1**	**3.1**
Vitamin B2 (grams)	**47.0**	**47.0**	**47.0**	**47.0**	**94**	**94**
Vitamin B12 (grams)	**6.8**	**6.8**	**6.8**	**6.8**	**13.6**	**13.6**
Yeast (lbs)	**5**	**5**	**5**	**5**	**10**	**10**
Provect-IR (lbs)	**100**	**100**	**100**	**100**	**200**	**200**
Sulfite (lbs)	**7.6**	**7.6**	**7.6**	**7.6**	**15.2**	**15.2**
Propionate (lbs)	**50**	**50**	**50**	**50**	**100**	**100**
Kelp (lbs)	**21.0**	**21.0**	**21.0**	**21.0**	**42**	**42**
Nutrient (lbs)	**5**	**5**	**5**	**5**	**10**	**10**
Magnesium Hydroxide (lbs)	**7.5**	**7.5**	**7.5**	**7.5**	**15**	**15**
ZVI (lbs) 1-3 micron	**74**	**74**	**74**	**74**	**148**	**148**
Mixture Volume (gal)	**80**	**85**	**80**	**85**	**160**	**170**
Line Purge (psi)	**50**	**50**	**50**	**50**		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/6/2019**

Time: **2:28 PM** to **2:37 PM** **2:18 PM** to **2:28 PM**

PRB-NE1	Injection #1		Injection #2		Summary	
13	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/6/2019**

	Injection #1		Injection #2		Summary	
Time:	**2:53 PM to 3:01 PM**		**2:46 PM to 2:53 PM**			
PRB-NE1 14	**Actual**	**Proposed**	**Actual**	**Proposed**	**Actual**	**Proposed**
Injection Zone	**18-20'**	**10-12'**	**21-23'**	**18-21'**	**18-23'**	**10-21'**
Fracture Duration (sec)	**3**	**3**	**3**	**3**		
Pathway Development (psi)	**150**	**150**	**150**	**150**		
Estimated ROI (ft)	**7.5**	**7.5**	**7.5**	**7.5**		
AMR compound (gals)	**1.55**	**1.55**	**1.55**	**1.55**	**3.1**	**3.1**
Vitamin B2 (grams)	**47.0**	**47.0**	**47.0**	**47.0**	**94**	**94**
Vitamin B12 (grams)	**6.8**	**6.8**	**6.8**	**6.8**	**13.6**	**13.6**
Yeast (lbs)	**5**	**5**	**5**	**5**	**10**	**10**
Provect-IR (lbs)	**100**	**100**	**100**	**100**	**200**	**200**
Sulfite (lbs)	**7.6**	**7.6**	**7.6**	**7.6**	**15.2**	**15.2**
Propionate (lbs)	**50**	**50**	**50**	**50**	**100**	**100**
Kelp (lbs)	**21.0**	**21.0**	**21.0**	**21.0**	**42**	**42**
Nutrient (lbs)	**5**	**5**	**5**	**5**	**10**	**10**
Magnesium Hydroxide (lbs)	**7.5**	**7.5**	**7.5**	**7.5**	**15**	**15**
ZVI (lbs) 1-3 micron	**74**	**74**	**74**	**74**	**148**	**148**
Mixture Volume (gal)	**80**	**85**	**80**	**85**	**160**	**170**
Line Purge (psi)	**50**	**50**	**50**	**50**		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/6/2019**

Time: **3:12 PM** to **3:21 PM** **3:02 PM** to **3:12 PM**

PRB-NE1	Injection #1		Injection #2		Summary	
15	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: Whirlpool-Fort Smith AR 2019 Injections

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: 12/6/2019

	Injection #1		Injection #2		Summary	
Time:	3:31 PM to 3:47 PM		3:12 PM to 3:20 PM			
PRB-NE1 16	**Actual**	**Proposed**	**Actual**	**Proposed**	**Actual**	**Proposed**
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/6/2019**

Time: **4:00 PM** to **4:11 PM** **3:49 PM** to **4:00 PM**

PRB-NE1	Injection #1		Injection #2		Summary	
17	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/6/2019**

Time: **4:21 PM** to **4:31 PM** **4:13 PM** to **4:21 PM**

PRB-NE1	Injection #1		Injection #2		Summary	
18	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/6/2019**

	Injection #1		Injection #2		Summary	
Time:	**4:45 PM to 4:55 PM**		**4:37 PM to 4:45 PM**			
PRB-NE1 19	**Actual**	**Proposed**	**Actual**	**Proposed**	**Actual**	**Proposed**
Injection Zone	**18-20'**	**10-12'**	**21-23'**	**18-21'**	**18-23'**	**10-21'**
Fracture Duration (sec)	**3**	**3**	**3**	**3**		
Pathway Development (psi)	**150**	**150**	**150**	**150**		
Estimated ROI (ft)	**7.5**	**7.5**	**7.5**	**7.5**		
AMR compound (gals)	**1.55**	**1.55**	**1.55**	**1.55**	**3.1**	**3.1**
Vitamin B2 (grams)	**47.0**	**47.0**	**47.0**	**47.0**	**94**	**94**
Vitamin B12 (grams)	**6.8**	**6.8**	**6.8**	**6.8**	**13.6**	**13.6**
Yeast (lbs)	**5**	**5**	**5**	**5**	**10**	**10**
Provect-IR (lbs)	**100**	**100**	**100**	**100**	**200**	**200**
Sulfite (lbs)	**7.6**	**7.6**	**7.6**	**7.6**	**15.2**	**15.2**
Propionate (lbs)	**50**	**50**	**50**	**50**	**100**	**100**
Kelp (lbs)	**21.0**	**21.0**	**21.0**	**21.0**	**42**	**42**
Nutrient (lbs)	**5**	**5**	**5**	**5**	**10**	**10**
Magnesium Hydroxide (lbs)	**7.5**	**7.5**	**7.5**	**7.5**	**15**	**15**
ZVI (lbs) 1-3 micron	**74**	**74**	**74**	**74**	**148**	**148**
Mixture Volume (gal)	**80**	**85**	**80**	**85**	**160**	**170**
Line Purge (psi)	**50**	**50**	**50**	**50**		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/6/2019**

Time: **5:06 PM** to **5:17 PM** **4:57 PM** to **5:07 PM**

PRB-NE1	Injection #1		Injection #2		Summary	
20	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	18-20'	10-12'	21-23'	18-21'	18-23'	10-21'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47.0	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	7.6	7.6	7.6	7.6	15.2	15.2
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21.0	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	7.5	7.5	7.5	7.5	15	15
ZVI (lbs) 1-3 micron	74	74	74	74	148	148
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Dates of Injection: **12/6/2019**

PRB-NE1 Summary

	Actual	Proposed
AMR Compound (gals)	63	75.7
Vitamin B2 (grams)	1908	2290
Vitamin B12 (grams)	275	330
Yeast (lbs)	203	243
Provect-IR (lbs)	4139	4966
Sulfite (lbs)	304	365
Propionate (lbs)	2029	2435
Kelp (lbs)	848	1017
Nutrient (lbs)	203	243
Magnesium Hydroxide (lbs)	304	365
ZVI (lbs)	2982	3579
Mixture Volume (gal)	3200	3936

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/7/2019**

	Injection #1		Injection #2	
Time:	**10:47 AM** to **10:55 AM**		**10:38 AM** to **10:47 AM**	

PRB-NE3 1	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	17-19'	17-19'	20-22'	20-22'	17-22'	17-22'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	0.775	1.55	1.55	1.55	2.325	3.1
Vitamin B2 (grams)	23.5	47.0	47.0	47.0	70.5	94
Vitamin B12 (grams)	3.4	6.8	6.8	6.8	10.2	13.6
Yeast (lbs)	2.5	5	5	5	7.5	10
Provect-IR (lbs)	50	100	100	100	150	200
Sulfite (lbs)	3.8	7.6	7.6	7.6	11.4	15.2
Propionate (lbs)	25	50	50	50	75	100
Kelp (lbs)	10.5	21.0	21.0	21.0	31.5	42
Nutrient (lbs)	2.5	5	5	5	7.5	10
Magnesium Hydroxide (lbs)	3.75	7.5	7.5	7.5	11.25	15
ZVI (lbs) 1-3 micron	37	74	74	74	111	148
Mixture Volume (gal)	40	85	80	85	120	170
Line Purge (psi)	50	50	50	50		

Other Field Observations: Dosages from NE1 - four NE1 locations moved to NE3.
Daylight at 17-19', 1/2 volume injected 17-19'

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: Whirlpool-Fort Smith AR 2019 Injections

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: 12/7/2019

Time: 11:19 AM to 11:24 AM | 11:04 AM to 11:17 AM

PRB-NE3 2	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	17-19'	17-19'	19-21'	20-22'	17-22'	17-22'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	2.325	1.55	3.875	3.1
Vitamin B2 (grams)	47.0	47.0	70.5	47.0	117.5	94
Vitamin B12 (grams)	6.8	6.8	10.2	6.8	17	13.6
Yeast (lbs)	5	5	7.5	5	12.5	10
Provect-IR (lbs)	100	100	150	100	250	200
Sulfite (lbs)	7.6	7.6	11.4	7.6	19	15.2
Propionate (lbs)	50	50	75	50	125	100
Kelp (lbs)	21.0	21.0	31.5	21.0	52.5	42
Nutrient (lbs)	5	5	7.5	5	12.5	10
Magnesium Hydroxide (lbs)	7.5	7.5	11.25	7.5	18.75	15
ZVI (lbs) 1-3 micron	74	74	111	74	185	148
Mixture Volume (gal)	80	85	120	85	200	170
Line Purge (psi)	50	50	50	50		

Other Field Observations: Dosages from NE1 - four NE1 locations moved to NE3.

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: Whirlpool-Fort Smith AR 2019 Injections

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: 12/7/2019

Time: 11:43 AM to 11:57 AM; 11:32 AM to 11:42 AM

PRB-NE3 3	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	17-19'	17-19'	20-22'	20-22'	17-22'	17-22'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	0.775	1.55	1.55	1.55	2.325	3.1
Vitamin B2 (grams)	23.5	47.0	47	47.0	70.5	94
Vitamin B12 (grams)	3.4	6.8	6.8	6.8	10.2	13.6
Yeast (lbs)	2.5	5	5	5	7.5	10
Provect-IR (lbs)	50	100	100	100	150	200
Sulfite (lbs)	3.8	7.6	7.6	7.6	11.4	15.2
Propionate (lbs)	25	50	50	50	75	100
Kelp (lbs)	10.5	21.0	21	21.0	31.5	42
Nutrient (lbs)	2.5	5	5	5	7.5	10
Magnesium Hydroxide (lbs)	3.75	7.5	7.5	7.5	11.25	15
ZVI (lbs) 1-3 micron	37	74	74	74	111	148
Mixture Volume (gal)	40	85	80	85	120	170
Line Purge (psi)	50	50	50	50		

Other Field Observations: Dosages from NE1 - four NE1 locations moved to NE3.
1/2 volume injected 17-19'

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/7/2019**

Time: **12:14 PM** to **12:28 PM** **11:58 AM** to **12:12 PM**

PRB-NE3 4	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	17-19'	17-19'	20-22'	20-22'	17-22'	17-22'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	0.775	1.55	2.325	1.55	3.1	3.1
Vitamin B2 (grams)	23.5	47.0	70.5	47.0	94	94
Vitamin B12 (grams)	3.4	6.8	10.2	6.8	13.6	13.6
Yeast (lbs)	2.5	5	7.5	5	10	10
Provect-IR (lbs)	50	100	150	100	200	200
Sulfite (lbs)	3.8	7.6	11.4	7.6	15.2	15.2
Propionate (lbs)	25	50	75	50	100	100
Kelp (lbs)	10.5	21.0	31.5	21.0	42	42
Nutrient (lbs)	2.5	5	7.5	5	10	10
Magnesium Hydroxide (lbs)	3.75	7.5	11.25	7.5	15	15
ZVI (lbs) 1-3 micron	37	74	111	74	148	148
Mixture Volume (gal)	40	85	120	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations: Dosages from NE1 - four NE1 locations moved to NE3.

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: Whirlpool-Fort Smith AR 2019 Injections

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: 12/7/2019

Time: 1:05 PM to 1:30 PM 12:30 PM to 1:02 PM

PRB-NE3 5	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	17-19'	17-19'	20-22'	20-22'	17-22'	17-22'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	0.775	1.55	2.325	1.55	3.1	3.1
Vitamin B2 (grams)	23.5	47.0	70.5	47.0	94	94
Vitamin B12 (grams)	3.8	6.8	10.2	6.8	14	13.6
Yeast (lbs)	2.5	5	7.5	5	10	10
Provect-IR (lbs)	50	100	150	100	200	200
Sulfite (lbs)	2.5	5	7.5	5	10	10
Propionate (lbs)	25	50	75	50	100	100
Kelp (lbs)	10.5	21.0	31.5	21.0	42	42
Nutrient (lbs)	2.5	5	7.5	5	10	10
Magnesium Hydroxide (lbs)	2.5	5	7.5	5	10	10
ZVI (lbs) 1-3 micron	18.5	37	55.5	37	74	74
Mixture Volume (gal)	40	85	120	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: Whirlpool-Fort Smith AR 2019 Injections

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: 12/7/2019

Time: 2:28 PM to 2:42 PM; 1:55 PM to 2:24 PM

PRB-NE3 6	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	17-19'	17-19'	20-22'	20-22'	17-22'	17-22'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	0.775	1.55	2.325	1.55	3.1	3.1
Vitamin B2 (grams)	23.5	47.0	70.5	47.0	94	94
Vitamin B12 (grams)	3.8	6.8	10.2	6.8	14	13.6
Yeast (lbs)	2.5	5	7.5	5	10	10
Provect-IR (lbs)	50	100	150	100	200	200
Sulfite (lbs)	2.5	5	7.5	5	10	10
Propionate (lbs)	25	50	75	50	100	100
Kelp (lbs)	10.5	21.0	31.5	21.0	42	42
Nutrient (lbs)	2.5	5	7.5	5	10	10
Magnesium Hydroxide (lbs)	2.5	5	7.5	5	10	10
ZVI (lbs) 1-3 micron	18.5	37	55.5	37	74	74
Mixture Volume (gal)	40	85	120	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: Whirlpool-Fort Smith AR 2019 Injections

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: 12/7/2019

Time:	3:07 PM to 3:20 PM	2:45 PM to 3:05 PM

PRB-NE3 7	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	17-19'	17-19'	20-22'	20-22'	17-22'	17-22'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	2.325	1.55	3.875	3.1
Vitamin B2 (grams)	47.0	47.0	70.5	47.0	117.5	94
Vitamin B12 (grams)	6.8	6.8	10.2	6.8	17	13.6
Yeast (lbs)	5	5	7.5	5	12.5	10
Provect-IR (lbs)	100	100	150	100	250	200
Sulfite (lbs)	5	5	7.5	5	12.5	10
Propionate (lbs)	50	50	75	50	125	100
Kelp (lbs)	21.0	21.0	31.5	21.0	52.5	42
Nutrient (lbs)	5	5	7.5	5	12.5	10
Magnesium Hydroxide (lbs)	5	5	7.5	5	12.5	10
ZVI (lbs) 1-3 micron	37	37	55.5	37	92.5	74
Mixture Volume (gal)	80	85	120	85	200	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: Whirlpool-Fort Smith AR 2019 Injections

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: 12/7/2019

Time:	3:46 PM to 3:56 PM	3:21 PM to 3:45 PM

PRB-NE3 8	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	17-19'	17-19'	20-22'	20-22'	17-22'	17-22'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	2.325	1.55	3.875	3.1
Vitamin B2 (grams)	47.0	47.0	70.5	47.0	117.5	94
Vitamin B12 (grams)	6.8	6.8	10.2	6.8	17	13.6
Yeast (lbs)	5	5	7.5	5	12.5	10
Provect-IR (lbs)	100	100	150	100	250	200
Sulfite (lbs)	5	5	7.5	5	12.5	10
Propionate (lbs)	50	50	75	50	125	100
Kelp (lbs)	21.0	21.0	31.5	21.0	52.5	42
Nutrient (lbs)	5	5	7.5	5	12.5	10
Magnesium Hydroxide (lbs)	5	5	7.5	5	12.5	10
ZVI (lbs) 1-3 micron	37	37	55.5	37	92.5	74
Mixture Volume (gal)	80	85	120	85	200	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: Whirlpool-Fort Smith AR 2019 Injections

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: 12/7/2019

Time:	4:20 PM to 4:33 PM	4:00 PM to 4:20 PM

PRB-NE3 9	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	17-19'	17-19'	20-22'	20-22'	17-22'	17-22'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	2.325	1.55	3.875	3.1
Vitamin B2 (grams)	47.0	47.0	70.5	47.0	117.5	94
Vitamin B12 (grams)	6.8	6.8	10.2	6.8	17	13.6
Yeast (lbs)	5	5	7.5	5	12.5	10
Provect-IR (lbs)	100	100	150	100	250	200
Sulfite (lbs)	5	5	7.5	5	12.5	10
Propionate (lbs)	50	50	75	50	125	100
Kelp (lbs)	21.0	21.0	31.5	21.0	52.5	42
Nutrient (lbs)	5	5	7.5	5	12.5	10
Magnesium Hydroxide (lbs)	5	5	7.5	5	12.5	10
ZVI (lbs) 1-3 micron	37	37	55.5	37	92.5	74
Mixture Volume (gal)	80	85	120	85	200	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/7/2019**

	Injection #1		Injection #2		Summary	
Time:	**4:59 PM** to **5:10 PM**		**4:44 PM** to **4:54 PM**			
PRB-NE3 10	**Actual**	**Proposed**	**Actual**	**Proposed**	**Actual**	**Proposed**
Injection Zone	**17-19'**	**17-19'**	**20-22'**	**20-22'**	**17-22'**	**17-22'**
Fracture Duration (sec)	**3**	**3**	**3**	**3**		
Pathway Development (psi)	**150**	**150**	**150**	**150**		
Estimated ROI (ft)	**7.5**	**7.5**	**7.5**	**7.5**		
AMR compound (gals)	**0.775**	**1.55**	**2.325**	**1.55**	**3.1**	**3.1**
Vitamin B2 (grams)	**23.5**	**47.0**	**70.5**	**47.0**	**94**	**94**
Vitamin B12 (grams)	**3.8**	**6.8**	**10.2**	**6.8**	**14**	**13.6**
Yeast (lbs)	**2.5**	**5**	**7.5**	**5**	**10**	**10**
Provect-IR (lbs)	**50**	**100**	**150**	**100**	**200**	**200**
Sulfite (lbs)	**2.5**	**5**	**7.5**	**5**	**10**	**10**
Propionate (lbs)	**25**	**50**	**75**	**50**	**100**	**100**
Kelp (lbs)	**10.5**	**21.0**	**31.5**	**21.0**	**42**	**42**
Nutrient (lbs)	**2.5**	**5**	**7.5**	**5**	**10**	**10**
Magnesium Hydroxide (lbs)	**2.5**	**5**	**7.5**	**5**	**10**	**10**
ZVI (lbs) 1-3 micron	**18.5**	**37**	**55.5**	**37**	**74**	**74**
Mixture Volume (gal)	**40**	**85**	**120**	**85**	**160**	**170**
Line Purge (psi)	**50**	**50**	**50**	**50**		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/8/2019**

	Injection #1		Injection #2		Summary	
Time:	**11:47 AM** to **12:01 PM**		**11:04 AM** to **11:45 AM**			
PRB-NE3 11	**Actual**	**Proposed**	**Actual**	**Proposed**	**Actual**	**Proposed**
Injection Zone	**17-19'**	**17-19'**	**20-22'**	**20-22'**	**17-22'**	**17-22'**
Fracture Duration (sec)	**3**	**3**	**3**	**3**		
Pathway Development (psi)	**150**	**150**	**150**	**150**		
Estimated ROI (ft)	**7.5**	**7.5**	**7.5**	**7.5**		
AMR compound (gals)	**1.55**	**1.55**	**1.1625**	**1.55**	**2.7125**	**3.1**
Vitamin B2 (grams)	**47.0**	**47.0**	**35.25**	**47.0**	**82.25**	**94**
Vitamin B12 (grams)	**6.8**	**6.8**	**5.1**	**6.8**	**11.9**	**13.6**
Yeast (lbs)	**5**	**5**	**3.75**	**5**	**8.75**	**10**
Provect-IR (lbs)	**100**	**100**	**75**	**100**	**175**	**200**
Sulfite (lbs)	**5**	**5**	**3.75**	**5**	**8.75**	**10**
Propionate (lbs)	**50**	**50**	**37.5**	**50**	**87.5**	**100**
Kelp (lbs)	**21.0**	**21.0**	**15.75**	**21.0**	**36.75**	**42**
Nutrient (lbs)	**5**	**5**	**3.75**	**5**	**8.75**	**10**
Magnesium Hydroxide (lbs)	**5**	**5**	**3.75**	**5**	**8.75**	**10**
ZVI (lbs) 1-3 micron	**37**	**37**	**27.75**	**37**	**64.75**	**74**
Mixture Volume (gal)	**80**	**85**	**60**	**85**	**140**	**170**
Line Purge (psi)	**50**	**50**	**50**	**50**		

Other Field Observations: started to daylight with 20 gallons left. Moved to next point.

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: Whirlpool-Fort Smith AR 2019 Injections

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: 12/8/2019

Time: 12:22 PM to 12:26 PM — 12:05 PM to 12:20 PM

PRB-NE3 12	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	17-19'	17-19'	20-22'	20-22'	17-22'	17-22'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	2.7125	1.55	4.2625	3.1
Vitamin B2 (grams)	47.0	47.0	82.25	47.0	129.25	94
Vitamin B12 (grams)	6.8	6.8	11.9	6.8	18.7	13.6
Yeast (lbs)	5	5	8.75	5	13.75	10
Provect-IR (lbs)	100	100	175	100	275	200
Sulfite (lbs)	5	5	8.75	5	13.75	10
Propionate (lbs)	50	50	87.5	50	137.5	100
Kelp (lbs)	21.0	21.0	36.75	21.0	57.75	42
Nutrient (lbs)	5	5	8.75	5	13.75	10
Magnesium Hydroxide (lbs)	5	5	8.75	5	13.75	10
ZVI (lbs) 1-3 micron	37	37	64.75	37	101.75	74
Mixture Volume (gal)	80	85	140	85	220	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/8/2019**

Time: **12:41 PM** to **12:51 PM** **12:30 PM** to **12:40 PM**

PRB-NE3 13	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	17-19'	17-19'	20-22'	20-22'	17-22'	17-22'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	1.55	1.55	3.1	3.1
Vitamin B2 (grams)	47.0	47.0	47	47.0	94	94
Vitamin B12 (grams)	6.8	6.8	6.8	6.8	13.6	13.6
Yeast (lbs)	5	5	5	5	10	10
Provect-IR (lbs)	100	100	100	100	200	200
Sulfite (lbs)	5	5	5	5	10	10
Propionate (lbs)	50	50	50	50	100	100
Kelp (lbs)	21.0	21.0	21	21.0	42	42
Nutrient (lbs)	5	5	5	5	10	10
Magnesium Hydroxide (lbs)	5	5	5	5	10	10
ZVI (lbs) 1-3 micron	37	37	37	37	74	74
Mixture Volume (gal)	80	85	80	85	160	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: Whirlpool-Fort Smith AR 2019 Injections

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: 12/8/2019

Time: 1:20 PM to 1:29 PM | 12:59 PM to 1:19 PM

PRB-NE3 14	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	17-19'	17-19'	20-22'	20-22'	17-22'	17-22'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	1.55	1.55	2.325	1.55	3.875	3.1
Vitamin B2 (grams)	47.0	47.0	70.5	47.0	117.5	94
Vitamin B12 (grams)	6.8	6.8	10.2	6.8	17	13.6
Yeast (lbs)	5	5	7.5	5	12.5	10
Provect-IR (lbs)	100	100	150	100	250	200
Sulfite (lbs)	5	5	7.5	5	12.5	10
Propionate (lbs)	50	50	75	50	125	100
Kelp (lbs)	21.0	21.0	31.5	21.0	52.5	42
Nutrient (lbs)	5	5	7.5	5	12.5	10
Magnesium Hydroxide (lbs)	5	5	7.5	5	12.5	10
ZVI (lbs) 1-3 micron	37	37	55.5	37	92.5	74
Mixture Volume (gal)	80	85	120	85	200	170
Line Purge (psi)	50	50	50	50		

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: 12/8/2019

Time: _____ to _____ _____ to _____

PRB-NE3 15	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone		17-19'		20-22'		17-22'
Fracture Duration (sec)		3		3		
Pathway Development (psi)		150		150		
Estimated ROI (ft)		7.5		7.5		
AMR compound (gals)		1.55		1.55	0	3.1
Vitamin B2 (grams)		47.0		47.0	0	94
Vitamin B12 (grams)		6.8		6.8	0	13.6
Yeast (lbs)		5		5	0	10
Provect-IR (lbs)		100		100	0	200
Sulfite (lbs)		5		5	0	10
Propionate (lbs)		50		50	0	100
Kelp (lbs)		21.0		21.0	0	42
Nutrient (lbs)		5		5	0	10
Magnesium Hydroxide (lbs)		5		5	0	10
ZVI (lbs) 1-3 micron		37		37	0	74
Mixture Volume (gal)		85		85	0	170
Line Purge (psi)		50		50		

Other Field Observations: very tight-no flow

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/8/2019**

Time: **2:50 PM** to **3:05 PM** **2:35 PM** to **2:45 PM**

PRB-NE3 16	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone	17-19'	17-19'	20-22'	20-22'		17-22'
Fracture Duration (sec)	3	3	3	3		
Pathway Development (psi)	150	150	150	150		
Estimated ROI (ft)	7.5	7.5	7.5	7.5		
AMR compound (gals)	0.775	1.55	0.775	1.55	1.55	3.1
Vitamin B2 (grams)	23.5	47.0	23.5	47.0	47	94
Vitamin B12 (grams)	3.4	6.8	3.4	6.8	6.8	13.6
Yeast (lbs)	2.5	5	2.5	5	5	10
Provect-IR (lbs)	50	100	50	100	100	200
Sulfite (lbs)	2.5	5	2.5	5	5	10
Propionate (lbs)	25	50	25	50	50	100
Kelp (lbs)	10.5	21.0	10.5	21.0	21	42
Nutrient (lbs)	2.5	5	2.5	5	5	10
Magnesium Hydroxide (lbs)	2.5	5	2.5	5	5	10
ZVI (lbs) 1-3 micron	18.5	37	18.5	37	37	74
Mixture Volume (gal)	40	85	40	85	80	170
Line Purge (psi)		50		50		

Other Field Observations: Daylighting occurred during injection~30' north, NE3-17 was added for remaining injectant.

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Date of Injection: **12/8/2019**

Time: to **3:07 PM** to **3:22 PM**

PRB-NE3 17	Injection #1		Injection #2		Summary	
	Actual	Proposed	Actual	Proposed	Actual	Proposed
Injection Zone			20-22'	20-22'	20-22'	17-22'
Fracture Duration (sec)			3			
Pathway Development (psi)			150			
Estimated ROI (ft)			7.5			
AMR compound (gals)			1.55	0	1.55	0
Vitamin B2 (grams)			47	0.0	47	0
Vitamin B12 (grams)			6.8	0.0	6.8	0
Yeast (lbs)			5	0	5	0
Provect-IR (lbs)			100	0	100	0
Sulfite (lbs)			8.8	0	8.8	0
Propionate (lbs)			50	0	50	0
Kelp (lbs)			21	0.0	21	0
Nutrient (lbs)			5	0	5	0
Magnesium Hydroxide (lbs)			7.5	0	7.5	0
ZVI (lbs) 1-3 micron			74	0	74	0
Mixture Volume (gal)			80	0	80	0
Line Purge (psi)			50			

Other Field Observations:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Dates of Injection: **12/7-12/8/2019**

PRB NE3 Summary

	Actual	Proposed
AMR compound (gals)	50.49	37.8
Vitamin B2 (grams)	1526.7	1145
Vitamin B12 (grams)	220	165
Yeast (lbs)	162.2	122
Provect-IR (lbs)	3214	2386
Sulfite (lbs)	182.6	122
Propionate (lbs)	1623	1217
Kelp (lbs)	677.5	508
Nutrient (lbs)	162.3	122
Magnesium Hydroxide (lbs)	182.6	122
ZVI (lbs)	1485	889
Mixture Volume (gal)	2560	1896

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES, INC.

Job Name: **Whirlpool-Fort Smith AR** **2019 Injections**

In-Situ Reductive Dechlorination of Soil and Groundwater via Synergistic Technologies

Dates of Injection: **12/6-12/8/2019**

Site Summary

	Actual	Proposed
AMR Compound (gals)	114	113.5
Vitamin B2 (grams)	3435	3435
Vitamin B12 (grams)	495	495
Yeast (lbs)	365	365
Provect-IR (lbs)	7353	7352
Sulfite (lbs)	487	487
Propionate (lbs)	3652	3652
Kelp (lbs)	1525	1525
Nutrient (lbs)	365	365
Magnesium Hydroxide (lbs)	487	487
ZVI (lbs)	4467	4468
Mixture Volume (gal)	5760	5832

Appendix B
Reagent Safety Data Sheets

NIACET CORPORATION
400 47th St.
Niagara Falls, NY 14304
Fax (716) 285 1497
Ph (716) 285 1474

MSDS
NIACET
CALCIUM PROPIONATE

Issued: January 2006

EMERGENCY PHONE NUMBER: (800) 424 9300, (202) 483-7616

MATERIAL SAFETY DATA SHEET
CALCIUM PROPIONATE

SECTION I - PRODUCT IDENTIFICATION

Product Name: **NIACET Calcium Propionate, FCC**
Chemical Synonyms: **Cal Prop, CP**
Chemical Family: **organic acid, calcium salt**
Chemical Formula: **$(C_3H_5O_2)_2Ca$**

SECTION II - INGREDIENTS

	% by wt.	CAS #
Calcium Propionate (dry basis)	**99 min**	**4075-81-4**
Water	**5 max**	**7732-18-5**

SECTION III - PHYSICAL DATA

Molecular Weight: **186.22**
Appearance: **white powder, granules, or crystals**
pH of 10% Aq Soln: **7.5 to 10.5**
Odor: **odorless**
Melting Point: **400 'C (decomposes)**
Boiling Point: **not applicable**
Vapor Pressure: **not applicable**
Bulk Density: **approx. 45 lbs./cu. ft.**
Solubility in Water: **28.5% in water at 20'C**
Reactivity in Water: **does not react**

SECTION IV - FIRE & EXPLOSION HAZARD

Flash Point: **None by Tag Closed Cup**
Flammable Limits: **Not Determined** **Auto-Ignition Temperature: Not Applicable**
Unusual Hazards: **Avoid dispersion of dust to minimize possible explosion hazard.**
Extinguishing Media: **Appropriate media for surrounding fire.**

SECTION V - REACTIVITY DATA

Hazardous Decomposition Products: **Carbon monoxide**
Hazardous Polymerization: **Will not occur.**
Incompatibility: **Strong oxidizing agents**

SECTION VI - TOXICITY DATA

Calcium Propionate is a non-toxic food chemical Generally Recognized As Safe by the FDA

Occupational Exposure: No exposure limits have been set by OSHA, NIOSH or ACGIH.
Carcinogen: **IARC: NO, NTP: NO, OSHA: NO**

NIACET CORPORATION
400 47th St.
Niagara Falls, NY 14304
Fax (716) 285 1497
Ph (716) 285 1474

Issued: January 2006

EMERGENCY PHONE NUMBER: (800) 424 9300, (202) 483-7616

SECTION VII - HEALTH HAZARD INFORMATION

Primary Routes of Exposure:
Ingestion: If swallowed, wash mouth out with water.
Eye Contact: Can cause irritation. Flush with water for at least 15 minutes, hold eyelids open. Get medical attention.
Skin Contact: May cause irritation of the skin. Wash area with soap and water. Get medical attention if irritation persists.
Inhalation: If irritation develops, remove to fresh air.

Effects of Overexposure:
Dust, in high concentration, may cause irritation of eyes, nose and throat.

Medical Conditions Aggravated by Exposure:
None identified. Handle with reasonable care.

SECTION VIII - EMPLOYEE PROTECTION

Protective Clothing: Appropriate work apparel. Plastic or rubber gloves optional.
Eye Protection: Safety glasses should always be worn when working with chemicals.
Respiratory Protection: Material should be handled in a manner that does not produce airborne particles. If dust is a problem a dust mask or respirator is recommended.

SECTION IX - SPILL AND DISPOSAL PROCEDURES

Action to be taken for Spills:
Wear suitable protective clothing including a respirator or dust mask. Sweep up spillage and collect for disposal. Wash down area with large quantities of water.

Disposal Methods:
Material is biodegradable. Dispose of in accordance with applicable Federal, state and local regulations.

SECTION X - OTHER REGULATORY CONTROLS

Calcium Propionate	**TSCA Inventory:**	**YES (all ingredients)**
	OSHA Hazard:	**NO**
	Regulated under RECRA:	**NO**
	Regulated under CERCLA:	**NO**
	Regulated under SARA Title III:	**NO**

The information herein is given in good faith and believed to be accurate and has been compiled from sources believed to be reliable. Buyer assumes all risk of use, storage and handling of this product in compliance with applicable federal. State, and local laws and regulations.

Material Safety Data Sheet

Nitrogen

Section 1. Chemical product and company identification

Product name : Nitrogen

Supplier : AIRGAS INC., on behalf of its subsidiaries
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

Product use : Synthetic/Analytical chemistry. Liquid – cryogenic coolant.

Synonym : nitrogen (dot); nitrogen gas; Nitrogen NF, LIN, Cryogenic Liquid Nitrogen, Liquid Nitrogen

MSDS # : 001040

Date of Preparation/Revision : **1/14/2011.**

In case of emergency : 1-866-734-3438

Section 2. Hazards identification

Physical state : Gas. [NORMALLY A COLORLESS GAS: MAY BE A CLEAR COLORLESS LIQUID AT LOW TEMPERATURES. SOLD AS A COMPRESSED GAS OR LIQUID IN STEEL CYLINDERS.]

Emergency overview : WARNING!

GAS:
CONTENTS UNDER PRESURE.
Do not puncture or incinerate container.
Can cause rapid suffocation.
May cause severe frostbite.
LIQUID:
Extremely cold liquid and gas under pressure.
Can cause rapid suffocation.
May cause severe frostbite.

Do not puncture or incinerate container.

Contact with rapidly expanding gases or liquids can cause frostbite.

Routes of entry : Inhalation

Potential acute health effects

Eyes : Contact with rapidly expanding gas may cause burns or frostbite. Contact with cryogenic liquid can cause frostbite and cryogenic burns.

Skin : Contact with rapidly expanding gas may cause burns or frostbite. Contact with cryogenic liquid can cause frostbite and cryogenic burns.

Inhalation : Acts as a simple asphyxiant.

Ingestion : Ingestion is not a normal route of exposure for gases. Contact with cryogenic liquid can cause frostbite and cryogenic burns.

Medical conditions aggravated by over-exposure : Acute or chronic respiratory conditions may be aggravated by overexposure to this gas.

See toxicological information (Section 11)

Section 3. Composition, Information on Ingredients

Name	CAS number	% Volume	Exposure limits
Nitrogen	7727-37-9	100	Oxygen Depletion [Asphyxiant]

Section 4. First aid measures

No action shall be taken involving any personal risk or without suitable training.If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : None expected.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : As this product is a gas, refer to the inhalation section.

Section 5. Fire-fighting measures

Flammability of the product : Non-flammable.

Products of combustion : Decomposition products may include the following materials:
nitrogen oxides

Fire-fighting media and instructions : Use an extinguishing agent suitable for the surrounding fire.

Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk.

Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up : Immediately contact emergency personnel. Stop leak if without risk. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

Handling : High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
Never allow any unprotected part of the body to touch uninsulated pipes or vessels that contain cryogenic liquids. Prevent entrapment of liquid in closed systems or piping without pressure relief devices. Some materials may become brittle at low temperatures and will easily fracture.

Storage : Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).
For additional information concerning storage and handling refer to Compressed Gas Association pamphlets P-1 Safe Handling of Compressed Gases in Containers and P-12 Safe Handling of Cryogenic Liquids available from the Compressed Gas Association, Inc.

Section 8. Exposure controls/personal protection

Engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

When working with cryogenic liquids, wear a full face shield.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Insulated gloves suitable for low temperatures

Personal protection in case of a large spill : Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product.

Product name

Nitrogen	Oxygen Depletion [Asphyxiant]

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

Molecular weight : 28.02 g/mole

Molecular formula : N2

Boiling/condensation point : -195.8°C (-320.4°F)

Melting/freezing point : -210°C (-346°F)

Critical temperature : -146.9°C (-232.4°F)

Vapor density : 0.967 (Air = 1) Liquid Density@BP: 50.46 lb/ft3 (808.3 kg/m3)

Specific Volume (ft^3/lb) : 13.8889

Gas Density (lb/ft^3) : 0.072

Section 10. Stability and reactivity

Stability and reactivity : The product is stable.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Toxicity data

Other toxic effects on humans : No specific information is available in our database regarding the other toxic effects of this material to humans.

Specific effects

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Reproduction toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Aquatic ecotoxicity

Not available.

Environmental fate : Not available.

Environmental hazards : No known significant effects or critical hazards.

Toxicity to the environment : Not available.

Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation.Return cylinders with residual product to Airgas, Inc.Do not dispose of locally.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	UN1066 UN1977	NITROGEN, COMPRESSED Nitrogen, refrigerated liquid	2.2	Not applicable (gas).		**Limited quantity** Yes. **Packaging instruction** **Passenger aircraft** Quantity limitation: 75 kg **Cargo aircraft** Quantity limitation: 150 kg
TDG Classification	UN1066 UN1977	NITROGEN, COMPRESSED Nitrogen, refrigerated liquid	2.2	Not applicable (gas).		**Explosive Limit and Limited Quantity Index** 0.125 **Passenger Carrying Road or Rail Index** 75
Mexico Classification	UN1066 UN1977	NITROGEN, COMPRESSED Nitrogen, refrigerated liquid	2.2	Not applicable (gas).		-

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Section 15. Regulatory information

United States

U.S. Federal regulations :

TSCA 8(a) IUR: Partial exemption
United States inventory (TSCA 8b): This material is listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Nitrogen
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Nitrogen: Sudden release of pressure

State regulations :

Connecticut Carcinogen Reporting: This material is not listed.
Connecticut Hazardous Material Survey: This material is not listed.
Florida substances: This material is not listed.
Illinois Chemical Safety Act: This material is not listed.
Illinois Toxic Substances Disclosure to Employee Act: This material is not listed.
Louisiana Reporting: This material is not listed.
Louisiana Spill: This material is not listed.
Massachusetts Spill: This material is not listed.
Massachusetts Substances: This material is listed.
Michigan Critical Material: This material is not listed.
Minnesota Hazardous Substances: This material is not listed.
New Jersey Hazardous Substances: This material is listed.
New Jersey Spill: This material is not listed.
New Jersey Toxic Catastrophe Prevention Act: This material is not listed.
New York Acutely Hazardous Substances: This material is not listed.
New York Toxic Chemical Release Reporting: This material is not listed.
Pennsylvania RTK Hazardous Substances: This material is listed.
Rhode Island Hazardous Substances: This material is not listed.

Canada

WHMIS (Canada) : Class A: Compressed gas.

CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is not listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

United States

Label requirements :

GAS:
CONTENTS UNDER PRESURE.
Do not puncture or incinerate container.
Can cause rapid suffocation.
May cause severe frostbite.
LIQUID:
Extremely cold liquid and gas under pressure.
Can cause rapid suffocation.
May cause severe frostbite.

Canada

Label requirements : Class A: Compressed gas.

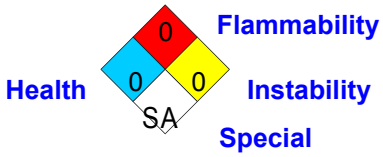
Hazardous Material Information System (U.S.A.) :

Health	0
Flammability	0
Physical hazards	0

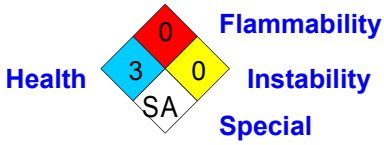
liquid:

Health	3
Fire hazard	0
Reactivity	0
Personal protection	

National Fire Protection Association (U.S.A.) :



liquid:



Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

NATURAL SOURCING™
Specialists in Cosmeceutical Ingredients

341 Christian Street, Oxford, CT 06478 USA
Tel: (203) 267-6061 Fax: (203) 267-6065
www.naturalsourcing.com info@naturalsourcing.com

MATERIAL SAFETY DATA SHEET

ORGANIC KELP POWDER

(Ascophyllum nodosum)

MSDS

1. PRODUCT NAME AND COMPANY IDENTIFICATION

Product Name:	**ORGANIC KELP POWDER (Ascophyllum nodosum)**
Product Use:	Personal Care Formulations
Company Name:	Natural Sourcing
Company Address:	341 Christian Street, Oxford, CT 06478, USA
Date Issued:	7/1/2008
Emergency Telephone Number:	**Chemtrec Tel: (800) 262-8200**

2. COMPOSITION/INGREDIENT INFORMATION

Ingredients:	**Concentration %**
Ascophyllum nodosum (Kelp)	100%, Powdered
Hazardous Components:	None

3. HAZARDS IDENTIFICATION

Routes of Entry

Eyes:	Mild Irritation may occur
Skin:	No known hazard
Inhalation:	No known hazard
Ingestion:	No known hazard

4. FIRST AID MEASURES

Eyes:	Flush with plenty of water or eye wash solution for 15 minutes. Get medical attention if irritation persists.

5. FIRE FIGHTING MEASURES

Extinguishing Media:	Water Spray, Foam, Powder and Carbon Dioxide
Special Firefighting Procedures:	N/A
Unusual Fire & Explosion Hazards:	N/A

6. ACCIDENTAL RELEASE MEASURES (STEPS FOR SPILLS)

Precautions:	N/A
Methods for Cleaning Up:	Sweep up or flush with water and dispose of according to local regulations.

7. HANDLING AND STORAGE

Safe Handling:	Wear safety glasses, Wear dusk mask
Requirements for Storage Areas and Containers:	Keep container closed, away from sunlight and protected from humidity.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Eye:	Safety glasses should be worn.
Skin/Body:	Gloves should be worn.
Respiratory:	Wear dusk mask.
Ventilation:	Ensure good ventilation of the work situation.
Other:	Evaluate need based on application.
Work/Hygiene Practice:	Normal work and hygiene practices

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Powder
Color:	Green
Odor:	Characteristic, fish-like

10. STABILITY AND REACTIVITY

Stability:	Stable
Incompatibility (Materials to Avoid):	N/A
Hazardous Decomposition or Byproducts:	N/A
Conditions to Avoid:	Avoid contamination of product, sunlight and damp conditions.

11. TOXICOLOGICAL INFORMATION

Toxicity Data:	Non toxic

12. ECOLOGICAL INFORMATION

Persistence and Degradability:	Easily Degradable

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods:	Dispose of according to local, state and federal regulations.

14. TRANSPORT INFORMATION

DOT Classification:	Not classified

15. REGULATORY INFORMATION

No Information

16. ADDITIONAL INFORMATION

This information is provided for documentation purposes only.
This product is not considered hazardous.

The complete range of conditions or methods of use are beyond our control therefore we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate however, all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local laws and local regulations remains the responsibility of the user.

This safety sheet cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers.

130 Research Lane, Suite 2 Guelph◆Ontario ◆ N1G 5G3 ◆ Canada ◆ Tel: (519) 822-2265 ◆ Fax: (519) 822-3151

KB-1® Dechlorinator Material Safety Data Sheet

Section 1: Material Identification

Trade Name: KB-1® Dechlorinator
Chemical Family: bacterial mixture
Chemical name: No IUC name for mixture is known to exist
Manufacturer/Supplier: SiREM
130 Research Lane, Suite 2,
Guelph, Ontario,
Canada N1G 5G3

For Information call: 519-822-2265 / 1-866-251-1747
Emergency Number: 519-822-2265
Description: Microbial inoculum (non-pathogenic, non-hazardous)
Trade Name: KB-1® Dechlorinator
Product Use: Bioremediation of contaminated groundwater.
Date Prepared: 2 February 2005

Section 2: Composition, Information on Ingredients

KB-1® Dechlorinator is a microbial culture grown in an aqueous dilute mineral salt solution media containing no hazardous ingredients.

The microbial composition of KB-1® Dechlorinator (as determined by phylogenetic analysis) is listed in Table 1. Identification of organisms was obtained by matching 16S rRNA gene sequence of organisms in KB-1® Dechlorinator to other known organisms. The characteristics of related organisms can be used to identify potential or likely characteristics of organisms in KB-1® Dechlorinator.

Table 1. Genus' identified in KB-1® Dechlorinator Microbial Inoculum

Genus
Dehalococcoides sp.
Geobacter sp.
Methanomethylovorans sp.

Section 3: Hazards Identification:

A review of the available data does not indicate any known health effects related to normal use of this product.

Section 4: First Aid Measures:

Avoid direct contact with skin and eyes. In any case of any exposure which elicits a response, a physician should be consulted immediately.

130 Research Lane, Suite 2 Guelph◆Ontario ◆ N1G 5G3 ◆ Canada ◆ Tel: (519) 822-2265 ◆ Fax: (519) 822-3151

Eye Contact: Flush eyes with water for at least 15 minutes, occasionally lift upper and lower eyelids, if undue irritation or redness occurs seek medical attention.

Skin Contact: Remove contaminated clothing and wash skin thoroughly with water and antibacterial soap. Seek medical attention if irritation develops or open wounds are present.

Ingestion: Do not induce vomiting, drink several cups of water, seek medical attention.

Inhalation: Remove to fresh air. If not breathing give artificial respiration. In case of labored breathing give oxygen. Call a physician.

Section 5 - Fire Fighting Measures:

Non-flammable
Flash Point: not applicable
Upper flammable limit: not applicable
Lower flammable limit: not applicable

Section 6 – Accidental Release Procedures

Spilled KB-1® Dechlorinator should be soaked up with sorbant and saturated with a 10% bleach solution (prepared by making a one in ten dilution of diluted standard bleach [normally sold at a strength of 5.25% sodium hypochlorite] to disinfect affected surfaces. Sorbant should be double bagged and disposed of as indicated in section 12. After removal of sorbant, area should be washed with 10% bleach solution to disinfect. If liquid from the culture vessel is present on the fittings, non-designated tubing or exterior of the stainless steel pressure vessel liquid should be wiped off and the area washed with 10% bleach solution.

Section 7 - Handling and Storage

KB-1® Dechlorinator is shipped in stainless steel pressure vessels and connected to injection lines and inert gas is used to pressurize the vessel to displace the contents. KB-1® Dechlorinator should be handled with care to avoid any spillage. Vessels are shipped with 1 pound per square inch (psi) pressure; valves should not be opened until connections to appropriate lines for subsurface injection are in place.

Storage Requirements: Avoid exposing stainless steel pressure vessels to undue temperature extremes (i.e., temperatures less than 0°C or greater than 30°C may result in harm to the microbial cultures and damage to the vessels). All valves should be in the closed position when the vessel is not pressurized to prevent the escape of gases and to maintain anaerobic conditions in the vessel. Avoid exposure of the culture to air as the presence of oxygen will kill dechlorinating microorganisms.

Section 8 - Exposure Controls/Personal Protection

Personal protective equipment:

Skin: Protective gloves (latex, vinyl or nitrile) should be worn.
Eye Protection: Wear appropriate protective eyeglasses or goggles when opening pressure vessels valves or when pressurizing vessels to inject contents into the subsurface.
Respiratory: No respiratory protection is required.
Engineering Controls: Good general room ventilation is expected to be adequate.

130 Research Lane, Suite 2 Guelph◆Ontario ◆ N1G 5G3 ◆ Canada ◆ Tel: (519) 822-2265 ◆ Fax: (519) 822-3151

Section 9: Physical and Chemical Properties:

Physical State: liquid
Odour: skunky odour
Appearance: dark grey, slightly turbid liquid under anaerobic conditions, pink if exposed to air (oxygen).
Specific gravity: not determined
Vapor pressure: not applicable
Vapor density: not applicable
Evaporation rate: not determined
Boiling point: ~100° C
Freezing point/melting point: ~ 0°C
pH: 6.5-7.5
Solubility: fully soluble in water

Section 10 – Stability and Reactivity Data

Stable and non-reactive.
Maintain under anaerobic conditions to preserve product integrity.
Materials to avoid: none known

Section 11 - Toxicological Information

Potential for Pathogenicity:

KB-1® Dechlorinator has tested negative (i.e., the organisms are not present) for a variety of pathogenic organisms listed in Table 2. While there is no evidence that virulent pathogenic organisms are present in KB-1® Dechlorinator, there is potential that certain organisms in KB-1® Dechlorinator may have the potential to act as opportunistic (mild) pathogens, particularly in individuals with open wounds and/or compromised immune systems. For this reason standard hygienic procedures such as hand washing after use should be observed.

Table 2, Results of Human Pathogen Screening of KB-1® Dechlorinator

Organism	**Disease(s) Caused**	***Test result***
Salmonella sp.	Typhoid fever, gastroenteritis	Not Detected
Listeria monocytogenes	Listerioses	Not Detected
Vibrio sp.,	Cholera, gastroenteritis	Not Detected
Campylobacter sp.,	Bacterial diarrhea	Not Detected
Clostridia sp.,	Food poisoning, Botulism, tetanus, gas gangrene	Not Detected
Bacillus anthracis	Anthrax	Not Detected
Pseudomonas aeruginosa	Wound infection	Not Detected
Yersinia sp.,	Bubonic Plague, intestinal infection	Not Detected
Yeast and Mold	Candidiasis, Yeast infection etc.	Not Detected
Fecal coliforms	Indicator organisms for many human pathogens diarrhea, urinary tract infections	Not Detected
Enterococci	Various opportunistic infections	Not Detected

130 Research Lane, Suite 2 Guelph◆Ontario ◆ N1G 5G3 ◆ Canada ◆ Tel: (519) 822-2265 ◆ Fax: (519) 822-3151

Section 12. Disposal Considerations

Material must be disinfected or sterilized prior to disposal. Consult local regulations prior to disposal.

Section 13 – Transport Information

Non-hazardous, non-pathogenic microbial inoculum – Biosafety Risk Group 1.

Chemicals, Not Otherwise Indexed (NOI), Non-hazardous

Not subject to TDG or DOT guidelines.

Disclaimer:

The information provided on the MSDS sheet is based on current data and represents our opinion based on the current standard of practice as to the proper use and handling of this product under normal, reasonably foreseeable conditions.

Last revised: 24 June 2008

MATERIAL SAFETY DATA SHEET

24- HOUR EMERGENCY ASSISTANCE:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES: 1-888-721-8283
CHEMTREC 1-800-424-9300

MANUFACTURER:

INNOVATIVE ENVIRONMENTAL TECHNOLOGIES
6130 KIT ROAD
PIPERSVILLE, PA 18947
888-721-8283

PRODUCT IDENTIFICATION:

TRADE NAME: BIO IET-3
COMPONENTS:

1. Urea
   - CAS Number: 57-13-6
   - Synonym(s): Carbamide; Carbonyldiamine; Carbanidic Acid
   - Chemical Family: Amide
   - Molecular Formula: CH_4N_2O
   - Molecular Weight: 60.07
2. Diammonomium Phosphate (DAP)
   - CAS Number: 7783-28-0
   - Synonym(s): Ammonium phosphate; Diammonium hydrogen phosphate; Dibasic Ammonium Phosphate
   - Chemical Family: Salt
   - Molecular Formula: $(NH_4)_2HPO_4$
   - Molecular Weight: 132.0
3. Monosodium Phosphate (MSP)
   - CAS Number: 7558-80-7
   - Synonym(s): Sodium acid phosphate; Sodium phosphate monobasic; Sodium dihydrogen phosphate
   - Chemical Family: Salt
   - Molecular Formula: NaH_2PO_4
   - Molecular Weight: 119.98

PRODUCT HAZARD SUMMARY:

HEALTH: May be harmful if swallowed. May be irritating to the skin, eyes and respiratory tract. Heated material may cause thermal burns.

FLAMMABILITY: Non-combustible

REACTIVITY: Stable

PRODUCT HEALTH HAZARD INFORMATION:

INGESTION: Slightly toxic. Domestic animal oral LD50 of Urea is 511 mg/kg. Acute oral LD50 of Diammonium Phosphate is > 1,000 mg/kg in male rats. May cause gastrointestinal disturbances. Symptoms may include irritation, nausea, vomiting, diarrhea.

SKIN: Slightly irritating. Repeated or prolonged skin contact may cause reddening, itching, and inflammation. Contact with heated material may cause thermal burns.

INHALATION: May cause respiratory tract irritation.

SPECIAL TOXIC EFFECTS: Asthmatics exposed to dust may have difficulty in breathing. Urea is a naturally occurring chemical in the body. It is an end product of protein metabolism and is excreted in the urine.

FIRST AID

INGESTION: Do not induce vomiting. Keep affected person warm and at rest. Get medical attention.

SKIN CONTACT: Wash area of contact thoroughly with soap and water. Launder clothing before reuse. Get medical attention if irritation persists. For contact with molten product, do not remove contaminated clothing. Flush skin immediately with large amounts of cold water. If possible, submerge area in cold water. Pack with ice. Thermal burns require immediate attention.

EYE CONTACT: Flush immediately with large amounts of water for at least fifteen minutes. Eyelids should be held away from eyeball to ensure thorough rinsing. Get medical attention if irritation persists.

INHALATION: Removed affected person from source of exposure. If not breathing, ensure open airway and institute cardiopulmonary resuscitation (CPR). If breathing is difficult, administer oxygen if available. Get medical attention.

PERSONAL PROTECTION INFORMATION:

EYE PROTECTION: Wear safety glasses or chemical goggles to prevent eye contact. Do not wear contact lenses when working with this substance. Have eye washing facilities readily available where eye contact can occur.

SKIN PROTECTION: Wear impervious gloves and protective clothing to prevent skin contact. Suggested protective materials are butyl rubber.

RESPIRATORY PROTECTION: None normally needed. Use NIOSH or MSHA approved equipment when airborne exposure limits are exceeded. NIOSH?MSHA approved breathing equipment must be available for non-routine and emergency use.

PHYSICAL PROPERTIES:

BIOLING POINT:	Decomposes	
SPECIFIC GRAVITY:	NA	
MELTING POINT:	133-211 C (271-412 F); DAP decomposes at 155 C (311 F)	
% VOLATILE:	NA	
VAPOR PRESSURE:	NA	
EVAPORATION RATE (WATER-1)	NA	
VAPOR DENSITY (AIR=1)	NA	
VISCOSITY:	NA	
% SOLUBILITY IN WATER, GM/100 GM @ 25C	Urea	119
	DAP	41
	MSP	71
OCTANOL/WATER PARTITION COEFFICIENT:	ND	
POUR POINT:	NA	
pH	ND	

APPEARANCE/ODOR: White granules with little or no odor. Ammonia odor will develop upon long standing

FIRE AND EXPLOSION DATA:

FLASH POINT	NA
AUTOIGNITION TEMPERATURE:	NA
FLAMMABILITY LIMITS IN AIR (% BY VOLUME); LOWER:	NA
FLAMMABILITY LIMITS IN AIR (% BY VOLUME); UPPER:	NA

BASIC FIREFIGHTING PROCEDURES: Use extinguishing agent suitable for type of surrounding fire. Material itself burns with great difficulty. Urea becomes slippery when wet. Guard against falls.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Fire may produce poisonous or irritating gas, fumes or vapor. Irritating or toxic substances may be emitted upon thermal decomposition. Exposed firefighters should wear MSHA/NIOSH approved self-contained breathing apparatus with full face mask and full protective equipment. Uncontaminated Urea, DAP and MSP are not explosion hazards. They may form explosive mixtures subject to spontaneous dentonation when contaminated with strong acids (nitric, picric, perchloric) or nitrate fertilizers. At elevated temperature, dry Urea may omit ammonia. Wet Urea may hydrolyze to corrosive ammonium carbamate. Aqueous solution of Urea at elevated temperature may decompose to highly toxic hydrogen cyanide. DAP decomposes upon heating to ammonia and polyphosphoric acid.

REACTIVITY DATA:

STABILITY/INCOMPATIBILITY: Stable when stored dry at up to 160 F and atmospheric pressure. Avoid contact with strong oxidizers, acids and bases, and nitrates. Decomposes to ammonia, biuret, NO_x, CO_x, and polyphoshoric acid.

HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS: Thermal decomposition products may be hazardous. Urea reactions with sodium or calcium hypochlorite to form explosive nitrogen trichloride. DAP heated with ammonium nitrate at 170 C or higher forms explosive nitroguinidine. Diammonium phosphate wil react with alkali to liberate ammonium.

ENVIRONMENTAL INFORMATION:

SPILL OR RELEASE TO THE ENVIRONMENT: No special procedures are required for clean-up of this material. Avoid methods that result in water pollution. Caution should be exercised regarding personnel safety and exposure to the material as set forth elsewhere in this data sheet.

EMERGENY ACTION: Keep unnecessary people away.

WASTE DISPOSAL: This substance, when discarded or disposed of, is not specifically listed as a hazardous waste in Federal regulation; however, it could be hazardous if it is considered toxic, corrosive, ignitable, or reactive according to Federal definitions (40 CFR 261). Additional, it could be designated as hazardous according to state regulations. This substance could also become a hazardous waste if it is mixed with or comes in contact with a hazardous waste. If such contact or mixing have occurred, check 40 CFR 261 to determine whether it is a hazardous waste. If it is a hazardous waste, regulations at 40 CFR 262, 263, and 264 apply.

The transportation, storage, treatment and disposal of this waste material must be conducted in compliance with all applicable Federal, state, and local regulations.

SARA TITLE III INFORMATION: Listed here are the hazard categories for the Superfun Amendments and Reauthorization Act (SARA) Section 311/312 (40 CFR 370):

Immediate hazard-no- Delayed Hazard-no-Fire Hazard-no-Pressure Hazard-no Reactivity Hazard-no

REGULATORY INFORMATION:

HANDLING/STORAGE: Store in tightly closed containers in cool, dry, isolated, well ventilated area away from heat, sources of ignition and incompatibles. Avoid contamination with other "look-alike" materials that may produce explosion hazard (see Unusual Fire and Explosion Hazards section).

EMPTY CONTAINERS: Empty containers may contain product residue. Do not reuse without adequate precautions.

TRANSPORTATION REQUIREMENTS:

D.O.T. Proper Shipping Name (49 CFR 172.101)	NA
D.O.T. Hazard Class (49 CFR 172.101)	NA
UN/NA Code (40 CFR 172.101)	NA
Bill of Lading Description (49 CFR 172.202)	BIO IET-3
D.O.T. Labels Required (49 CFR 172.101)	NA
D.O.T. Placards Required	NA

INGREDIENTS AND HEALTH HAZARD INFORMATION:

COMPONENTS	CAS NUMBER	%	EXPOSURE LIMITS. REF
Urea	57-13-6	50	10 mg/m^3 (total) TLV as nuisance dust
DAP	7783-28-0	25	ND
MSP	7558-80-7	25	ND

Revision Date: April 9, 2009

NA= Not Applicable
ND= No Data

Safety Data Sheet (SDS)

OSHA HazCom 2012 Standard 29 CFR 1910.1200. Prepared to GHS Rev03.

Printing date 05/30/2014 Reviewed on 05/30/2014

* 1 Identification

· **Product identifier**

· **Trade name: Provect-IR Antimethanogenic ISCR Reagent**
· **Product description**
Remediation product for the treatment of soil, sediment and groundwater. Not for use in potable water sources.

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Provectus Environmental Products
2871 W. Forest Road
Suite 2
Freeport, IL 61032
Phone: 815-650-2230
Fax: 815-650-2232
www.provectusenvironmental.com
· **Emergency telephone number:** 815-650-2230

* 2 Hazard(s) identification

· **Classification of the substance or mixture**
The product is not classified according to the Globally Harmonized System (GHS).

· **Label elements**
· **GHS label elements** Non-Regulated Material
· **Hazard pictograms** Non-Regulated Material
· **Signal word** Non-Regulated Material
· **Hazard statements** Non-Regulated Material
· **Hazard description:**
CONTAINMENT HAZARD: Any vessel that contains wetted reagent must be vented due to potential pressure build up from fermentation gases.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 1
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 0
Fire = 1
Reactivity = 0

* 3 Composition/information on ingredients

7439-89-6	iron	5-40%
4075-81-4	calcium dipropionate	2 - 4%
	Proprietary Organic Carbon Sources	48-90%

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

8013-01-2	Yeast extracts	STOT SE 3, H335	0.5 - 2%

(Contd. on page 2)

Safety Data Sheet (SDS)

OSHA HazCom 2012 Standard 29 CFR 1910.1200. Prepared to GHS Rev03.

Printing date 05/30/2014 Reviewed on 05/30/2014

Trade name: Provect-IR Antimethanogenic ISCR Reagent

(Contd. of page 1)

9000-30-0	Guar gum	STOT SE 3, H335; Eye Irrit. 2B, H320; Combustible Dust	0.5 - 2%
7757-83-7	sodium sulphite	Acute Tox. 4, H302	1 - 2%

· ***Additional information:*** Product contains red yeast rice

4 First-aid measures

· ***Description of first aid measures***
· ***After inhalation:*** Remove person to fresh air. If signs/symptons continue, get medical attention.
· ***After skin contact:*** Wash off with soap and water. Get medical attention if irritation develops.
· ***After eye contact:*** Flush with water for 5 minutes
· ***After swallowing:***
Rinse mouth with water and afterwards drink plenty of milk or water. Call a poson control center or doctor immediately for treatment advice.
· ***Most important symptoms and effects, both acute and delayed*** No further relevant information available.
· ***Indication of any immediate medical attention and special treatment needed***
No further relevant information available.

5 Fire-fighting measures

· ***Extinguishing media***
· ***Suitable extinguishing agents:***
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· ***Special hazards arising from the substance or mixture*** No further relevant information available.
· ***Advice for firefighters***
· ***Protective equipment:*** No special measures required.

* 6 Accidental release measures

· ***Personal precautions, protective equipment and emergency procedures*** Not required.
· ***Environmental precautions:*** Do not allow to enter sewers/ surface or ground water.
· ***Methods and material for containment and cleaning up:***
Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Sweep or vacuum up spillage and place in vented container.
· ***Reference to other sections***
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

* 7 Handling and storage

· ***Precautions for safe handling*** No special measures required.
· ***Information about protection against explosions and fires:*** Combustible material

· ***Conditions for safe storage, including any incompatibilities***
· ***Storage:***
· ***Requirements to be met by storerooms and receptacles:***
CONTAINMENT HAZARD: Any vessel that contains wetted reagent must be vented due to potential pressure build up from fermentation gases.
· ***Information about storage in one common storage facility:*** Not required.
· ***Further information about storage conditions:***
Keep tightly closed in a dry and cool place. Keep away from open flames, hot surfaces and sources of ignition. Any material that is wetted must be vented due to potential pressure build up from fermentation gases.

(Contd. on page 3)

Safety Data Sheet (SDS)

OSHA HazCom 2012 Standard 29 CFR 1910.1200. Prepared to GHS Rev03.

Printing date 05/30/2014 Reviewed on 05/30/2014

Trade name: Provect-IR Antimethanogenic ISCR Reagent

(Contd. of page 2)

· **Specific end use(s)** No further relevant information available.

* 8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters**
· **Components with occupational exposure limits:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· **Additional information:**
Dry or powdered ingredients are combustible. Dispersal of finely divided dust from products into air may form mixtues that are ignitable and explosive. Minimize airborne dust generation and eliminate sources of ignition.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
· **Breathing equipment:** Not required.
· **Protection of hands:** Not required.
· **Eye protection:** Not required.

* 9 Physical and chemical properties

· **Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**

Form:	Solid
Color:	Brown to Green
· **Odor:**	Pleasant
· **Odor threshold:**	Not determined.
· **pH-value:**	Not applicable.
· **Change in condition**	
Melting point/Melting range:	Not determined.
Boiling point/Boiling range:	Undetermined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Not determined.
· **Ignition temperature:**	
Decomposition temperature:	Not determined.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Dry or powdered ingredients are combustible. Dispersal of finely divided dust from products into air may form mixtures that are ingnitable and explosive. Minimize airborne dust generation and eliminate sources of ignition.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapor pressure:**	Not applicable.
· **Density:**	Not determined.

(Contd. on page 4)

Safety Data Sheet (SDS)

OSHA HazCom 2012 Standard 29 CFR 1910.1200. Prepared to GHS Rev03.

Printing date 05/30/2014 Reviewed on 05/30/2014

Trade name: Provect-IR Antimethanogenic ISCR Reagent

(Contd. of page 3)

· **Relative density** Not determined.
· **Vapour density** Not applicable.
· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**
Water: Soluble.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**
Dynamic: Not applicable.
Kinematic: Not applicable.

· **Solvent content:**
Organic solvents: 0.0 %

Solids content: 100.0 %
· **Other information** No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability** Product is stable under normal conditions.
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

* 11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** Product dust may cause eye irritation.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.

(Contd. on page 5)

Safety Data Sheet (SDS)

OSHA HazCom 2012 Standard 29 CFR 1910.1200. Prepared to GHS Rev03.

Printing date 05/30/2014 Reviewed on 05/30/2014

Trade name: Provect-IR Antimethanogenic ISCR Reagent

(Contd. of page 4)

· ***Persistence and degradability*** No further relevant information available.
· ***Bioaccumulative potential*** No further relevant information available.
· ***Mobility in soil*** No further relevant information available.
· ***Additional ecological information:***
· ***General notes:*** Water hazard class 1 (Self-assessment): slightly hazardous for water
· ***Results of PBT and vPvB assessment***
· ***PBT:*** Not applicable.
· ***vPvB:*** Not applicable.
· ***Other adverse effects*** No further relevant information available.

13 Disposal considerations

· ***Waste treatment methods***
· ***Recommendation:*** Smaller quantities can be disposed of with household waste.

· ***Uncleaned packagings:***
· ***Recommendation:*** Disposal must be made according to official regulations.
· ***Recommended cleansing agent:*** Water, if necessary with cleansing agents.

* 14 Transport information

· ***UN-Number***
· ***DOT, ADR, ADN, IMDG, IATA*** Non-Regulated Material
· ***UN proper shipping name***
· ***DOT, ADR, ADN, IMDG, IATA*** Non-Regulated Material
· ***Transport hazard class(es)***

· ***DOT, ADR, ADN, IMDG, IATA***
· ***Class*** Non-Regulated Material
· ***Packing group***
· ***DOT, ADR, IMDG, IATA*** Non-Regulated Material
· ***Environmental hazards:***
· ***Marine pollutant:*** No
· ***Special precautions for user*** Not applicable.
· ***Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code*** Not applicable.
· ***UN "Model Regulation":*** -

15 Regulatory information

· ***Safety, health and environmental regulations/legislation specific for the substance or mixture***
· ***Sara***

· ***Section 355 (extremely hazardous substances):***

None of the ingredients is listed.

· ***Section 313 (Specific toxic chemical listings):***

None of the ingredients is listed.

· ***TSCA (Toxic Substances Control Act):***

7439-89-6	iron
4075-81-4	calcium dipropionate
8013-01-2	Yeast extracts
9000-30-0	Guar gum
7757-83-7	sodium sulphite

(Contd. on page 6)

Safety Data Sheet (SDS)

OSHA HazCom 2012 Standard 29 CFR 1910.1200. Prepared to GHS Rev03.

Printing date 05/30/2014 Reviewed on 05/30/2014

Trade name: Provect-IR Antimethanogenic ISCR Reagent

(Contd. of page 5)

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **GHS label elements** Non-Regulated Material
· **Hazard pictograms** Non-Regulated Material
· **Signal word** Non-Regulated Material
· **Hazard statements** Non-Regulated Material

· **National regulations:**
The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

· **State Right to Know**

7439-89-6	iron	5-40%
4075-81-4	calcium dipropionate	2-4%
8013-01-2	Yeast extracts STOT SE 3, H335	0.5-2%
9000-30-0	Guar gum STOT SE 3, H335; Eye Irrit. 2B, H320; Combustible Dust	0.5-2%
7757-83-7	sodium sulphite Acute Tox. 4, H302	1-2%
	Proprietary Organic Carbon Sources	48-90%

All ingredients are listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** 05/30/2014 / 6
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association

(Contd. on page 7)

Safety Data Sheet (SDS)

OSHA HazCom 2012 Standard 29 CFR 1910.1200. Prepared to GHS Rev03.

Printing date 05/30/2014 *Reviewed on 05/30/2014*

Trade name: Provect-IR Antimethanogenic ISCR Reagent

(Contd. of page 6)

ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
Acute Tox. 4: Acute toxicity, Hazard Category 4
Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

· **** Data compared to the previous version altered.***

SDS / MSDS Created by MSDS Authoring Services (www.MSDSAuthoring.com)

Health	4
Fire	0
Reactivity	0
Personal Protection	F

Material Safety Data Sheet

Contact information: Purebulk, Inc.
1640 Austin Rd
Roseburg, Oregon USA 97471

Toll Free: 888-280-0050
Phone: 541-679-1500
FAX: 541-393-9005

Section 1: Chemical Product and Company Identification

Product Name: ***Red Yeast Rice P.E. 0.4%***

CAS#: 75330-75-5
Synonym: 2-methyl-1S,2,3R,7S,8S,8aR-hexahydro-3,7-dimethyl-8-[2-[(2R,4R)-tetrahydro-4-hydroxy-6-oxo
Chemical Name: Lovastatin
Chemical Formula: C24H36O5

Section 2: Composition and Information on Ingredients

Composition(s):

Composition
Ankaflavin
Monascorubrin
Rubropunctatin
Monascorubramine

Toxicological Data on Ingredients: The toxicological effects of this product have not been thoroughly studied.

Section 3: Hazards Identification

Potential Acute Health Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Severe over-exposure can result in death.

Potential Chronic Health Effects: CARCINOGENIC EFFECTS: 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to lung, upper respiratory tract, mucuous membrances. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Flash point: Not available.
Autoignition Temp: Not available.
Flammability: Not available.

Section 5: Fire and Explosion Data

Flash Pt: No data.
Explosive Limits: LEL: No data. UEL: No data.
Special Fire Fighting Procedures: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.
Unusual Fire and Explosion Hazards: No data available.
Hazardous Combustion Products: No data available.
Suitable Extinguishing Media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.
Unsuitable Extinguishing Media: A solid water stream may be inefficient.

Section 6: Accidental Release Measures

Steps To Be Taken In Case Material Is Released Or Spilled:

Avoid release into the environment.
Avoid raising and breathing dust, and provide adequate ventilation.
As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
Transfer to a proper chemical waste container for disposal.

Section 7: Handling and Storage

Hazard Label Information: Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling
Precautions To Be Taken in Handling: Avoid breathing (dust, vapor, mist, gas). Avoid prolonged or repeated exposure.
Precautions To Be Taken in Storing: Keep tightly closed. Store at correct temperature.

Section 8: Exposure Controls/Personal Protection

Protective Equipment Summary - Hazard Label Information:

Compatible chemical-resistant gloves

Eye wash station in work area
Lab coat
Safety glasses
Safety shower in work area
Vent Hood

Respiratory Equipment (Specify Type):	NIOSH approved respirator, as conditions warrant.
Eye Protection:	Safety glasses
Protective Gloves:	Compatible chemical-resistant gloves
Other Protective Clothing:	Lab coat
Ventilation:	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
Work/Hygienic/Maintenance Practices:	Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Wash thoroughly after handling.

Section 9: Physical and Chemical Properties

Physical States:	Solid
Melting Point:	No data.
Boiling Point:	No data.
Autoignition Pt:	No data.
Flash Pt:	No data.
Explosive Limits:	LEL: No data. UEL: No data.
Specific Gravity (Water = 1):	No data.
Bulk density:	No data.
Vapor Pressure (vs. Air or mm Hg):	No data.
Vapor Density (vs. Air = 1):	No data.
Evaporation Rate (vs Butyl Acetate=1):	No data.
Solubility in Water:	No data.
Solubility Notes:	~0.5 mg/ml in 1: 1 DMSO: PBS (pH 7.2); ~20 mg/ml in EtOH & DMSO; ~15 mg/ml in DMF;
Percent Volatile:	No data.
Heat Value:	No data.
Particle Size:	No data.
Corrosion Rate:	No data.
Formula:	C24H36O5

Section 10: Stability and Reactivity Data

Stability:	Stable
Conditions To Avoid - Instability:	No data available.
Incompatibility - Materials To Avoid:	strong oxidizing agents
Hazardous Decomposition Or Byproducts:	carbon dioxide carbon monoxide
Possibility of Hazardous Reactions:	Will not occur
Conditions To Avoid - Hazardous Reactions:	No data available.

Section 11: Toxicological Information

The toxicological effects of this product have not been thoroughly studied.

Carcinogenicity/Other Information:	No data available.
Carcinogenicity:	NTP? No IARC Monographs? No OSHA Regulated? No

Section 12: Ecological Information

Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.

Section 13: Disposal Considerations

Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14: Transport Information

LAND TRANSPORT (US DOT): DOT Proper Shipping Name Not dangerous goods.

LAND TRANSPORT (European ADR/RID): ADR/RID Shipping Name Not dangerous goods.

AIR TRANSPORT (ICAO/IATA): ICAO/IATA Shipping Name Not dangerous goods.

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

Section 15: Other Regulatory Information

European Community Hazard Symbol codes: No data available.

European Community Risk and Safety Phrases:

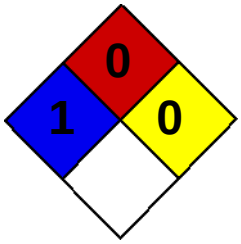
S24/25 - Avoid contact with skin and eyes.
S37/39 - Wear suitable gloves and eye/face protection.

US EPA SARA Title III:

Section 16: Other Information

References: *Not available.*
Other Special Considerations: Not available.
Created: 06/25/2013 2:00 P.M. kkl
Last Updated: 07/09/2013 3:10 P.M. kkl

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Purebulk.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Purebulk.com has been advised of the possibility of such damages.



Health	2
Fire	0
Reactivity	0
Personal Protection	E

Material Safety Data Sheet

MSDS

Sodium sulfite

Section 1: Chemical Product and Company Identification

Product Name: Sodium sulfite

Catalog Codes: SLS2383

CAS#: 7757-83-7

RTECS: WE2150000

TSCA: TSCA 8(b) inventory: Sodium sulfite

CI#: Not available.

Synonym: Sulfurous Acid, Disodium salt

Chemical Name: Sulfurous acid, disodium salt

Chemical Formula: Na2SO3

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Sodium sulfite	7757-83-7	100

Toxicological Data on Ingredients: Sodium sulfite: ORAL (LD50): Acute: 820 mg/kg [Mouse.]. 3650 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of ingestion, of inhalation (lung irritant). Slightly hazardous in case of skin contact (irritant), of eye contact (irritant).

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (sensitizer). CARCINOGENIC EFFECTS: 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to peripheral nervous system, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:
Do not ingest. Do not breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, combustible materials, organic materials, acids.

Storage:

Air sensitive. Moisture sensitive. Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance:
Solid. (Solid crystalline powder. Powdered solid. Crystals solid.)

Odor: Sulfurous. Odorless.

Taste: Sulfurous. Saline.

Molecular Weight: 126.04 g/mole

Color: White or Tan to slightly pink

pH (1% soln/water): Not available.

Boiling Point: Not available.

Melting Point: Decomposition temperature: >500°C (932°F)

Critical Temperature: Not available.

Specific Gravity: 2.63 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility:
Soluble in cold water, hot water. Soluble in glycerol. Almost insoluble in alcohol.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materitals, air, moisture, dust generation

Incompatibility with various substances: Reactive with oxidizing agents, combustible materials, organic materials, acids.

Corrosivity:
Corrosive in presence of aluminum, of zinc, of copper. Slightly corrosive in presence of steel.

Special Remarks on Reactivity:
Air sensitive. Moisture sensitive. Keep container tightly closed. When heated to decompostion, it emits toxic fumes of Na2O and SOx

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 820 mg/kg [Mouse.].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May cause damage to the following organs: peripheral nervous system, central nervous system (CNS).

Other Toxic Effects on Humans:
Hazardous in case of ingestion, of inhalation (lung irritant). Slightly hazardous in case of skin contact (irritant).

Special Remarks on Toxicity to Animals:
Lowest Published Dose: LDL [Rabbit] - Route: Oral; Dose 2825 mg/kg

Special Remarks on Chronic Effects on Humans: May affect genetic material(mutagenic)

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Acute Potential Health Effects: Skin: Causes skin irritation. Eyes: Causes eye irritation and may cause chemical conjunctivitis. Conjunctivitis may be more noted in sensitive individuals. Inhalation: Causes upper respiratory tract and mucous membrane irritation. May cause hypersensitivity reaction with swelling of the tongue, bronchospasm, bronchoconstriction diaphoreisis, flushing, urticaria, hypotension, tachycardia, and anaphylaxis particularly in asthmatic people who are sulfite sensitive. Ingestion: May cause gastrointestinal tract irritation with abdominal pain, nausea, vomiting and diarrhea. May affect behavior/central nervous system (CNS depression with convulsions, somnolence), respiration (respiration depression), and cardiovascular system (circulatory disturbancs, hypotension). It may liberate sulfurous acid which may result in caustic injury. Hypersensitivity reaction with swelling of the tongue bronchospasm, bronchoconstriction diaphoreisis, flushing, urticaria, hypotension, tachycardia, and anaphylaxis may occur more frequently with people who are asthmatic. Chronic Potential Health Effects: Skin: Prolonged or repeated skin contact may cause dermal sensitization (contact dermatitis), but this is rare. Inhalation: Prolonged or repeated inhalation may cause chronic irritation, inflammation, delayed pulmonary edema, and alteration of sense of smell and taste. Ingestion: Prolonged or repeated ingestion may affect the bone marrow (bone marrow atrophy), and behavior/central/peripheral nervous systems (CNS depression and paralysis).

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself. **Special Remarks on the Products of Biodegradation:** Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations: TSCA 8(b) inventory: Sodium

sulfite **Other Regulations:** Not available.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC):
R22- Harmful if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. S22- Do not breathe dust. S24/25- Avoid contact with skin and eyes. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36- Wear suitable protective clothing.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses.

Section 16: Other Information

References:
-The Sigma-Aldrich Library of Chemical Safety Data, Edition II. -Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987. RTECS (Registry of Toxic Effects of Chemicals). Hazardous Substance Data Bank (HDSB)

Other Special Considerations: Not available.

Created: 10/09/2005 06:36 PM

Last Updated: 11/01/2010 12:00 PM

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall ScienceLab.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.

Material Safety Data Sheet
Riboflavin

ACC# 20145

Section 1 - Chemical Prod uct and Company Identification

MSDS Name: Riboflavin
Catalog Numbers: BP167 50, BP167-50, BP16750
Synonyms: Lactoflavine; 6,7-Dimethyl-9-D-ribitylisoalloxazine; Isoalloxazine, 7,8-dimethyl-10-D-ribityl-;Isoalloxazine, 7,8-dimethyl-10-(D-ribo-2,3,4,5-tetrahydroxypentyl)-; Vitamin B2; Vitamin G
Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMT REC assistance, call: 800-424-9300
For International CHEMT REC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
83-88-5	Riboflavin	ca.100	201-507-1

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: Yellow powder or orange-yellow crystals.
Warning! Causes respiratory tract irritation. Causes eye and skin irritation. May cause digestive tract irritation. Light sensitive. This is expected to be a low hazard for usual industrial handling.
Target Organs: No data found.

Potential Health Effects

Eye: Causes eye irritation. May cause chemical conjunctivitis.
Skin: Causes skin irritation. May cause skin discoloration.
Ingestion: Ingestion of large amounts may cause gastrointestinal irritation.

Inhalation: Causes respiratory tract irritation. Can produce delayed pulmonary edema.
Chronic: Effects may be delayed. Laboratory experiments have resulted in m utagenic effects.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion.
Extinguishing Media: Use extinguishing media most appropriate for the surrounding fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Flash Point: Not applicable.
Autoignition Temperature: Not applicable.
Explosion Limits, Lower:Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 1; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Remove contaminated clothing and wash before re use. Minimize d ust generation and acc um ulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adeq uate ventilation. Store protected from light. Wash clothing before re use.
Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible s ubstances. Store protected from light.

Section 8 - Expos ure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material sho uld be eq uipped with an eyewash facility and a safety shower. Use adeq uate ventilation to keep airborne concentrations low.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Riboflavin	none listed	none listed	none listed

OSHA Vacated PELs: Riboflavin: No OSHA Vacated PELs are listed for this chemical. Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Crystals
Appearance: Yellow powder or orange-yellow crystals
Odor: slight odor
pH: 6 (neutral)
Vapor Pressure: Negligible.
Vapor Density: Not available.
Evaporation Rate:negligible

Viscosity: Not applicable.
Boiling Point: Not available.
Freezing/Melting Point:290 deg C
Decomposition Temperature:290 deg C Solubility: Soluble.
Specific Gravity/Density:Not available.
Molecular Formula:C17H2ON4O6
Molecular Weight:374.0366

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions. Light sensitive.
Conditions to Avoid: Incompatible materials, light, dust generation, moisture, excess heat.
Incompatibilities with Other Materials: Strong oxidizing agents, reducing agents, bases, calcium, metallic salts.
Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, oxides of phosphorus, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 83-88-5: V31400000
LDSO/LCSO:
CAS# 83-88-5:
Oral, rat: LD50 = >10 gm/kg;
.

Carcinogenicity:
CAS# 83-88-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found
Teratogenicity: No information found
Reproductive Effects: No information found
Mutagenicity: Cytogenetic Analysis: Hamster, Lung = 300 mg/L.; Sex Chromosome Loss and Nondisj unction: Hamster, Lung = 100 mg/L.
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators m ust determine whether a discarded chemical is classified as a hazardo us waste. US EPA g uidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators m ust cons ult state and local hazardo us waste reg ulations to ens ure complete and acc urate classification.
RC RA P-Series: None listed.
RC RA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	**Not reg ulated as a hazardo us material**	**No information available.**
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 83-88-5 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CE RCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.

Section 313 **No chemicals are reportable under Section 313.**

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 83-88-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

Not available.

Risk Phrases:

Safety Phrases:

WGK (Water Danger/Protection)

CAS# 83-88-5: No information available.

Canada - DSL/NDSL

CAS# 83-88-5 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

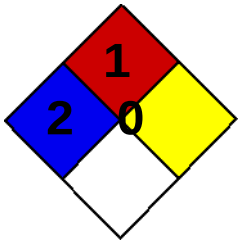
Section 16 - Additional Information

MSDS Creation Date: 7/16/1999

Revision #3 Date: 10/03/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any

claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.



Health	2
Fire	1
Reactivity	0
Personal Protection	E

Material Safety Data Sheet

Cyanocobalamin MSDS

Section 1: Chemical Product and Company Identification

Product Name: Cyanocobalamin

Catalog Codes: SLC5008, SLC2218

CAS#: 68-19-9

RTECS: GL7030000

TSCA: TSCA 8(b) inventory: Cyanocobalamin

CI#: Not available.

Synonym: Vitamin B12; Cobinamide, cyanide phosphate 3'-ester with 5,6-dimethyl-1-alpha-Dribofuranosylbenzimidazole, inner salt

Chemical Formula: C63H88CoN14O14P

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Cyanocobalamin	68-19-9	100

Toxicological Data on Ingredients: Cyanocobalamin LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Slightly hazardous in case of skin contact (permeator).

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to lungs, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention. **Serious Inhalation:** Not available.

Ingestion:
Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...). Some metallic oxides.

Fire Hazards in Presence of Various Substances: Not available.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. Wear suitable protective clothing In case of insufficient ventilation, wear suitable respiratory equipment If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes

Storage:
Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a

cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid.

Odor: Not available.

Taste: Not available.

Molecular Weight: 1355.39 g/mole

Color: Not available.

pH (1% soln/water): Not available.

Boiling Point: Decomposes.

Melting Point: 102.5°C (216.5°F)

Critical Temperature: Not available.

Specific Gravity: Not available.

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility: Partially soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available. LC50: Not available.

Chronic Effects on Humans: The substance is toxic to lungs, mucous membranes.

Other Toxic Effects on Humans:
Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of inhalation. Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic. **Special Remarks on the Products of Biodegradation:** Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations: TSCA 8(b) inventory: Cyanocobalamin

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada): CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC): R36/38- Irritating to eyes and skin.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available. **Created:** 10/10/2005 08:17 PM

Last Updated: 06/09/2012 12:00 PM

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall ScienceLab.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.

Autolyzed yeast

Provesta® 027

O h I

ASIAB.F. tog:stlients Company

Product Code: 50300

D7107

PRODUCT SPECIFICATION

Chemical and physical data

Parameter	Unit	Min.		Max.	Method
Moisture	%			7	100 deg F oven, 24 hours
Protein in product	%	49			AOAC 988.05

Microbiological standard

Parameter	Unit	Specification	Method
Total plate count	cfulg	<7,500	48 hrs at 30 deg F
Yeasts and molds	cfu/g	<50	3 days at 30 deg_F
E. coli	cfulg	NEG	FDA BAM Revision A of 8th Ed, 1998 Chp.4
Coliforms	cfu/g	<10	FDA BAM Revision A of 8th Ed, 1998 Chp.4
Staph aureus	cfu/g	<10	FDA BAM Revision A of 8th Ed, 1998 Chp.12
Salmonella	NEG/375 g	NEG	AOAC/BAM Method 2004.03

Typical Nutritional Information

Calories	371/100g	Cholesterol	<1mg/100g(1)
Calories from fat	631100g	Ash	8g/100g
Calories from Saturated fat	7.2/100g	Sodium	0.10g/100g
Protein	52g/100g	Potassium	2.5g/100g
Carbohydrates	26g/100g	Vitamin A (IU)	<44 IU/100g(1)
Dietary Fiber	5g/100g	Vitamin C (ascorbic acid)	<0.5mg/100g(1)
Sugar-Total	<iwicio 3 [1])	Calcium	0.015g/100g
Fat — Total	7g/ 100g	Iron	0.010g/100g
Saturated Fatty Acids	0.8g/100g		
Trans Fatty Acids	0.07g/100g		

Below Detection Limit

This information is hosed on our present knowledge and experience. However, it implies no liability or other regal respOnstbility on our part. including with regard to existing third parry patent rights. In particular, no guarantee of properties in legai sense is implied. We reserve the right lo make any changes according to technological progress or tunher developments. The customer is not released from the obligation Is conduct careful inspection and leafing of incoming goods. Reference to trade names used by other companies is neither a recommendation. nor is it imended to suggest that similar products could no! be used. All other business transactions shalt exclusively be governed by our General Sales Conditions

Europe - Africa - Middle East — Asia
°lily GmbH
Wandsbeker Zollstr. 59
22041 Hamburg
Germany
Tel: +49 (0)4068 293 01
Fax: +49 (0)4068 293 128
Email: infoeohly.de
www.ohly.corn

America
Chly Americas
35 Adams Street NE
Hutchinson, MN 55350
United States
Tel: -I-1 320-587-2481
Fax: +1 320-587-8617
E-mail: infoOprovesta.com
Toll Free: 0800 321 26 89

BASF
The Chemical Company

Safety data sheet ZV-Iron Microspheres 200

1. Substance/preparation and company identification

Company	24 Hour Emergency Response information
BASF CORPORATION	CHEMTREC: 1-800-424-9300
100 Campus Drive	BASF HOTLINE: 1-800-832-HELP
Florham Park, NJ 07932	

Molecular formula: FE (Small Quantities C,N,O)
Synonyms: Carbonyl Iron Powders

2. Composition/information on ingredients

CAS Number	Content (W/W)	Chemical name
7439-89-6	**98.0 %**	Carbonyl iron powder

3. Hazard identification

Emergency overview

DANGER: EXTREMELY FLAMMABLE. INGESTION MAY CAUSE GASTRIC DISTURBANCES.
CAUSES EYE, SKIN AND RESPIRATORY TRACT IRRITATION.
Avoid contact with the skin, eyes and clothing.
Avoid inhalation of dusts.
Use with local exhaust ventilation.
Wear a NIOSH-certified {or equivalent) particulate respirator.
Wear NIOSH-certified chemical goggles.
Wear protective clothing.
Wash thoroughly after handling.
Eye wash fountains and safety showers must be easily accessible.

Potential health effects

Primary routes **of exposure**
Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

Acute toxicity:
No other known acute effects.

Irritation:
Extremely irritating to the skin, eyes and respiratory tract.

Potential environmental effects

Aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms.
The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

4. First-aid measures

General advice:
Remove contaminated clothing.

If inhaled:
Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

If on skin:
Wash thoroughly with soap and water.

If irritation develops, seek medical attention.

If in eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open. If irritation develops, seek medical attention.

If swallowed:
Rinse mouth and then drink plenty of water.

Seek medical attention.

Note to physician
Symptoms: Overexposure may cause:, vomiting, acidosis, shock, bloody diarrhea, nausea

5. Fire-fighting measures

Autoignition:	150 °C	
Lower explosion limit:		(20 °C, 1 bar)
Flammability:	Highly flammable.	

Suitable extinguishing media:
water spray

Unsuitable extinguishing media far safety reasons:
carbon dioxide

Additional information:
Avoid whirling up the material/product because of the danger of dust explosion.

Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:
The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

NFPA Hazard codes:
Health : 1 Fire: 3 Reactivity: **1** Special:

6. Accidental release measures

Personal **precautions:**
Avoid dust formation. Use personal protective clothing.

Environmental precautions:
This product is not regulated by RCRA. This product is not regulated by CERCLA CSuperfund').

Cleanup:
❑o not vacuum up powder.

For large amounts: Dampen, pick up mechanically and dispose of.
For residues: Dampen, pick up mechanically and dispose of.

7. Handling and storage

Handling

General advice:
Handle in accordance with good industrial hygiene and safety practice. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:
Fine dust of the product is capable of dust explosion. Avoid all sources of ignition: heat, sparks, open flame. Electrostatic discharge may cause ignition. Ground all transfer equipment properly to prevent electrostatic discharge.

Storage

Storage incompatibility:
General: Segregate from acids. Segregate from oxidants.

Storage **stability:**
Protect against moisture.

8. Exposure controls and personal protection

Advice on system design:
Provide local exhaust ventilation to control dust.

Personal protective equipment

Respiratory protection:
Wear a NIOSH-certified (or equivalent) particulate respirator. Do not exceed the maximum use concentration for the respirator facepieceicartridge combination. For emergency or non-routine, high exposure situations, use a NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions. Observe OSHA regulations for respirator use (29 CFR 1910.134).

Eye protection:
Tightly fitting safety goggles (chemical goggles).

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:
Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended.

9. Physical and chemical properties

Form:	powder	
Odour:	faint odour	
Colour:	grey	
Melting point:	1,535 °C	Literature data.
Boiling point:	2,735 °C	Literature data.
Density:	7.8 g/cm3	(20 'C)
Bulk density:	2,500 - 3,500 kg/m3	
Solubility in water:		insoluble

10. Stability and reactivity

Minimum ignition energy:
1 - 3 nnJ, 1 bar, 20 'C, Inductivity: 1 mH (VD! 2263, sheet 1, 2.5)

Conditions to avoid:
Avoid all sources of ignition: heat, sparks, open flame. Avoid electro-static charge. Avoid dust formation.

Substances to avoid:
acids

Hazardous reactions:
Dust explosion hazard. Contact with acids liberates hydrogen gas.

Decomposition products:
No hazardous decomposition products known.

Corrosion to metals:
No corrosive effect on metal.

11. Toxicological information

Acute toxicity

Oral:
LD50/rat: > 5,000 mg/kg

Chronic toxicity

Carcinogenicity:
In the majority of the short term assays the substance caused no carcinogenic effects.

12. Ecological information

Environmental fate and transport

Biodegradation:
Evaluation: Inorganic product which cannot be eliminated from water by biological purification processes.
Can be eliminated mechanically.

Bioaccumulation:

The product will not be readily bioavailable due to its consistency and insolubility in water. Accumulation in organisms is not to be expected.

Environmental toxicity

Acute and prolonged toxicity to fish:
DIN 38412 Part 15 static
golden ❑rfe1LC50 (96 h): > 10,000 mg/l Nominal concentration.

13. Disposal considerations

Waste disposal of substance:
Dispose of in a licensed facility.
Dispose of in accordance with national, state and local regulations.

Container disposal:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

14. Transport information

Land transport
LISDOT

Hazard class:	4.2
Packing group:	II
ID number:	UN 3189
Hazard label:	4.2
Proper shipping name:	METAL POWDER, SELF-HEATING, N.O.S. (contains CARBONYL IRON POWDER)

Sea transport
IMDG

Hazard class:	4.2
Packing group:	II
ID number:	UN 3189
Hazard label:	4.2
Marine pollutant:	NO
Proper shipping name:	METAL POWDER, SELF-HEATING, N.O.S. contains (CARBONYL IRON POWDER)

Air transport
IATMCAO

Hazard class:	4.2
Packing group:	

ID number:	UN 3189
Hazard label:	4.2
Proper shipping name:	METAL POWDER, SELF-HEATING, N.O.S. contains (CARBONYL IRON POWDER)

15. Regulatory information

Federal Regulations

Registration status:
TSCA, US released / listed

OSHA hazard category: Skin and/or eye irritant, Chronic target organ effects reported

SARA hazard categories (EPCRA 311/312): Chronic, Acute Chronic, Acute

16. Other information

HMIS III rating
Health: 2 Flammability: 3 Physical hazard: 1

HMIS uses a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates high hazard.

Local contact Information
prod_reg @ basf .corn

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE , IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA. AND INFORMATION FURNISHED BY BASF HEREUNDER ARE GIVEN GRATIS AND BASF ASSUMES NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.
END OF DATA SHEET

SAFETY DATA SHEET

500164 GARLIC OIL FCC

1. IDENTIFICATION

Product Description: GARLIC OIL FCC

CAS # 8000-78-0

FEMA Number 2503

Other means of identification

Vigon Item # 500164

Recommended use Concentrated aromatic and flavor ingredient which may be used in flavor and fragrance compounds according to legal and IFRA or FEMA GRAS/FDA guidelines.

Recommended restrictions For Manufacturing Use Only

Company

Vigon International, Inc.
127 Airport Road
E. Stroudsburg, PA 18301
For information call: 570-476-6300
Web Site: www.vigon.com

24 Hour Emergency Response Information

INFOTRAC (ACCT# 78928);
1-800-535-5053 WITHIN THE U.S.A.
1-352-323-3500 OUTSIDE THE U.S.A.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	Vigon International, Inc.	
Address	127 Airport Road E. Stroudsburg, PA 18301 United States	
Telephone	For information call:	570-476-6300
Website	www.vigon.com	
E-mail	Not available.	
Emergency phone number	INFOTRAC 1-800-535-5053 1-352-323-3500	(ACCT# 78928); WITHIN THE U.S.A. OUTSIDE THE U.S.A.

2. HAZARD(S) IDENTIFICATION

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Sensitization, skin	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 3

Label elements



Signal word Warning

Hazard statement Flammable liquid and vapor. Harmful if swallowed. Causes skin irritation. Causes skin and eye irritation. May cause an allergic skin reaction. Causes serious eye irritation. Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Avoid breathing mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish.

Storage Store in a well-ventilated place. Keep cool.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information 100% of the mixture consists of component(s) of unknown acute dermal toxicity. 100% of the mixture consists of component(s) of unknown acute inhalation toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Chemical name	Common name and synonyms	CAS number	%
GARLIC OIL		8000-78-0	100

4. FIRST-AID MEASURES

Inhalation If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. For breathing difficulties, oxygen may be necessary. Call a physician if symptoms develop or persist.

Skin contact Take off immediately all contaminated clothing. Get medical attention if irritation develops and persists. Wash skin thoroughly with soap and water for several minutes.

Eye contact Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists. Promptly wash eyes with plenty of water while lifting the eye lids.

Ingestion	Call a physician or poison control center immediately. If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.
Indication of immediate medical attention and special treatment needed	Not available.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Water spray, fog, CO2, dry chemical, or alcohol resistant foam.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	Fire may produce irritating, corrosive and/or toxic gases.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage. Ventilate closed spaces before entering them. Keep run-off water out of sewers and water sources. Dike for water control.
Specific methods	Use water spray to cool unopened containers.
General fire hazards	Static charges generated by emptying package in or near flammable vapor may cause flash fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Eliminate all sources of ignition. Avoid contact with skin or inhalation of spillage, dust or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using pumps.

The product is immiscible with water and will spread on the water surface.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Prevent product from entering drains. Absorb in vermiculite, dry sand or earth and place into containers.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use. This material and its container must be disposed of as hazardous waste. Collect and dispose of spillage as indicated in section 13 of the SDS.

Environmental precautions

Retain and dispose of contaminated wash water. Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water.

7. HANDLING AND STORAGE

Precautions for safe handling

Do not handle or store near an open flame, heat or other sources of ignition. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

This substance has no PEL, TLV, or other recommended exposure limit.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Use explosion-proof ventilation equipment to stay below exposure limits. Adequate ventilation should be provided so that exposure limits are not exceeded.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles). Face shield is recommended.

Skin protection

Hand protection

Chemical resistant gloves.

Other

Use of an impervious apron is recommended.

Respiratory protection

Respiratory protection not required. If ventilation is insufficient, suitable respiratory protection must be provided.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations	When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Refer to Spec Sheet
Physical state	Liquid.
Form	Liquid.
Color	Refer to Spec Sheet
Odor	Characteristic.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	115.0 °F (46.1 °C) Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	10 mm Hg at 25 °C
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Flammability class	Combustible II estimated
Molecular formula	Not applicable
Oxidizing properties	Not oxidizing.

Specific gravity	1.07 at 25 °C

10. STABILITY AND REACTIVITY

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products if stored and handled as indicated.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation. Causes mild eye irritation.
Ingestion	Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Product	Species	Test Results
GARLIC OIL (CAS 8000-78-0)		
Acute		
Oral		
LD50	Rat	424 mg/kg

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not available.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Harmful to aquatic life with long lasting effects.
Persistence and degradability	No data is available on the degradability of this substance.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. DISPOSAL CONSIDERATIONS

Disposal instructions	Do not discharge into drains, water courses or onto the ground. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	Not established.
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

ADN

UN number	1197
UN proper shipping name	EXTRACTS, FLAVOURING, LIQUID
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	No
Labels required	3

ADR

UN number	1197
UN proper shipping name	EXTRACTS, FLAVOURING, LIQUID
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	No
Labels required	3

RID

UN number	1197
UN proper shipping name	EXTRACTS, FLAVOURING, LIQUID
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing Group	III
Environmental Hazards	No
Labels required	3
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT

BULK

UN number	1197
Proper shipping name	EXTRACTS, FLAVOURING, LIQUID
Hazard class	3
Packing group	III
Environmental hazards	
Marine pollutant	No
Packaging exceptions	150
Packaging bulk	242
Labels required	3

DOT

NON-BULK

Not regulated as dangerous goods.

IATA

UN number	1197
UN proper shipping name	EXTRACTS, FLAVOURING, LIQUID
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	No
Labels required	3

IMDG

UN number	1197
UN proper shipping name	EXTRACTS, FLAVOURING, LIQUID
Transport hazard class(es)	3
Subsidiary class(es)	-

Packing group	III
Environmental hazards	
Marine pollutant	No
Labels required	3
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

ADN; ADR; DOT BULK; IATA; IMDG; RID



15. REGULATORY INFORMATION

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not available.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	Yes
Classified hazard categories	Flammable (gases, aerosols, liquids, or solids) Acute toxicity (any route of exposure) Skin corrosion or irritation Serious eye damage or eye irritation Respiratory or skin sensitization

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.
Food and Drug Administration (FDA)	Total food additive Direct food additive GRAS food additive

US state regulations

California Proposition 65

California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Toxic Chemical Substances (TCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Issue date	08-09-2016
Revision date	03-05-2018
Version #	02
HMIS® ratings	Health: 2 Flammability: 2 Physical hazard: 0

Disclaimer

Vigon International, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available. The above information relates only to this product and not to its use in combination with any other material or any particular process and is designed only as guidance for the safe handling, use, processing, storage, transportation, and disposal and should not be considered as a guarantee or quality specification. This product has not been evaluated for safe use in e-cigarettes or any vaping application where the product(s) is/are intentionally vaporized and inhaled. Vigon International, Inc. has performed no testing on these products in e-cig/vaping applications. It is the sole responsibility of the individual(s) purchasing this product to assess its' safety in the final application. The above information relates only to this product and not to its use in combination with any other material or any particular process and is designed only as guidance for the safe handling, use, processing, storage, transportation, disposal, and should not be considered as a guarantee or quality specification. The above information is based on data provided by and collected from recognized sources such as distributors, manufacturers, and technical groups and is considered to be accurate to the best of Vigon's knowledge as of the date of this document. It is the responsibility of the user to review all safety information about this product and determine its safety and suitability in their own processes and operations. Appropriate warnings and safe handling procedures should be provided to all handlers and users, taking into account the intended use and the specific conditions and factors relating to such use in accordance with all applicable laws and regulations.

Revision information

This document has undergone significant changes and should be reviewed in its entirety.

Appendix C
Laboratory Analytical Reports

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 11, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60319241 / WHIRLPOOL**
Pace Workorder: 31953

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, October 29, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/11/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 20

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID	Sample ID	Matrix	Date Collected	Date Received
319530001	TMW-34-201910	Water	10/24/2019 17:30	10/29/2019 11:00
319530002	TMW-32-201910	Water	10/24/2019 15:15	10/29/2019 11:00
319530003	MW-186-201910	Water	10/24/2019 13:15	10/29/2019 11:00
319530004	TMW-25-201910	Water	10/24/2019 10:55	10/29/2019 11:00
319530005	IW-147-201910	Water	10/24/2019 10:15	10/29/2019 11:00
319530006	MW-95-201910	Water	10/24/2019 13:05	10/29/2019 11:00
319530007	IW-147-201910	Bubble Strip	10/24/2019 10:15	10/29/2019 11:00
319530008	MW-95-201910	Bubble Strip	10/24/2019 13:05	10/29/2019 11:00

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31953 60319241 / WHIRLPOOL

Workorder Comments

The container pH for samples 31953 (0001-0006) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530001** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-34-201910** Date Collected: 10/24/2019 17:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**8400**	ug/l	0.50	0.094	1	11/5/2019 11:34	TD	n
Ethane	**0.24**	ug/l	0.10	0.011	1	11/5/2019 11:34	TD	n
Ethene	**<0.10**	ug/l	0.10	0.0080	1	11/5/2019 11:34	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530002** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-32-201910** Date Collected: 10/24/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**8800**	ug/l	0.50	0.094	1	11/5/2019 11:49	TD	n
Ethane	**0.21**	ug/l	0.10	0.011	1	11/5/2019 11:49	TD	n
Ethene	**0.30**	ug/l	0.10	0.0080	1	11/5/2019 11:49	TD	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530003** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **MW-186-201910** Date Collected: 10/24/2019 13:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**12000**	ug/l	0.50	0.094	1	11/5/2019 12:04	TD	n
Ethane	**0.10**	ug/l	0.10	0.011	1	11/5/2019 12:04	TD	n
Ethene	**0.55**	ug/l	0.10	0.0080	1	11/5/2019 12:04	TD	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530004** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-25-201910** Date Collected: 10/24/2019 10:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**12000**	ug/l	0.50	0.094	1	11/5/2019 09:15	TD	n
Ethane	**0.16**	ug/l	0.10	0.011	1	11/5/2019 09:15	TD	n
Ethene	**0.25**	ug/l	0.10	0.0080	1	11/5/2019 09:15	TD	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31953 60319241 / WHIRLPOOL

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31953 60319241 / WHIRLPOOL

QC Batch: DISG/7883 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319530007, 319530008

METHOD BLANK: 64064

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Hydrogen	nM	<1.0	1.0	n

LABORATORY CONTROL SAMPLE & LCSD: 64065 64066

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Hydrogen	nM	24	25	26	102	108	80-120	5	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31953 60319241 / WHIRLPOOL

QC Batch: DISG/7894 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319530004, 319530005, 319530006

METHOD BLANK: 64156

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n
Acetylene	ug/l	<0.50	0.50	n

LABORATORY CONTROL SAMPLE & LCSD: 64158 64160

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	820	790	110	106	80-120	3.7	20	n
Ethane	ug/l	38	38	38	101	99	80-120	1.1	20	n
Ethene	ug/l	35	36	36	102	101	80-120	1.5	20	n
Acetylene	ug/l	33	32	31	96	94	80-120	2.7	20	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31953 60319241 / WHIRLPOOL

QC Batch: DISG/7895 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319530001, 319530002, 319530003

METHOD BLANK: 64162

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n

LABORATORY CONTROL SAMPLE & LCSD: 64164 64166

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	840	830	112	111	80-120	1.4	20	n
Ethane	ug/l	38	40	41	106	108	80-120	1.3	20	n
Ethene	ug/l	35	38	39	107	109	80-120	2	20	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 31953 60319241 / WHIRLPOOL

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
319530007	IW-147-201910			AM20GAX	DISG/7883
319530008	MW-95-201910			AM20GAX	DISG/7883
319530004	TMW-25-201910			AM20GAX	DISG/7894
319530005	IW-147-201910			AM20GAX	DISG/7894
319530006	MW-95-201910			AM20GAX	DISG/7894
319530001	TMW-34-201910			AM20GAX	DISG/7895
319530002	TMW-32-201910			AM20GAX	DISG/7895
319530003	MW-186-201910			AM20GAX	DISG/7895

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

2

Chain of Custody

PASI Kansas Laboratory

31953

Pace Analytical®
www.pacelabs.com

Workorder: 60319241 **Workorder Name:** WHIRLPOOL, FORT SMITH AR **Results Requested By:** 11/6/2019

Report / Invoice To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy P.O. SUB0256

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Unpreserved					Requested Analysis: M/E/E + Acetylene + Hydrogen	M/E/E											LAB USE ONLY
1	TMW-34-201910	10/24/2019 17:30	60319241001	Water	3							X											
2	TMW-32-201910	10/24/2019 15:15	60319241002	Water	3							X											
3	MW-186-201910	10/24/2019 13:15	60319241003	Water	3							X											
4	TMW-25-201910	10/24/2019 10:55	60319241004	Water	3							X											
5	IW-147-201910	10/24/2019 10:15	60319241005	Water	4						X												
6	MW-95-201910	10/24/2019 13:05	60319241006	Water	4						X												

Transfers	Released By	Date/Time	Received By	Date/Time
1	Victor B Pace	10/28/19 1800	[illegible]	10.29
2				1100
3				

Comments

Cooler Temperature on Receipt 1 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

Cooler Receipt Form

Client Name: Pace Project: 60319241 Lab Work Order: 31953

A. **Shipping/Container Information** (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 121929814757

Custody Seal on Cooler/Box Present: (Yes) No Seals Intact: (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 1°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. **Laboratory Assignment/Log-in** (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?		✓		

Comments:_____

Cooler contents examined/received by: LJ Date: 10.29.19

Project Manager Review: ERF Date: 10/29/19

F-PAE-Q-009-rev.01, 3Oct2017

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

June 03, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on April 25, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

RV-3 Revised report

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Richard Mannz
richard.mannz@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Arkansas Drinking Water
Missouri Certification Number: 10090
WY STR Certification #: 2456.01
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Florida: Cert E871149 SEKS WET
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-18-11
Utah Certification #: KS000212018-8
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070
Missouri Certification Number: 10090

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60300925001	MW-98-201904	Water	04/24/19 09:25	04/25/19 02:35
60300925002	MW-184-20190	Water	04/24/19 10:56	04/25/19 02:35
60300925003	MW-99-201904	Water	04/24/19 11:53	04/25/19 02:35
60300925004	ITMW-20-201904	Water	04/24/19 09:15	04/25/19 02:35
60300925005	MW-29-201904	Water	04/24/19 10:40	04/25/19 02:35
60300925006	MW-26-201904	Water	04/24/19 12:05	04/25/19 02:35
60300925007	MW-96-201904	Water	04/24/19 09:00	04/25/19 02:35
60300925008	MW-97-201904	Water	04/24/19 10:30	04/25/19 02:35
60300925009	MW-183R-201904	Water	04/24/19 11:30	04/25/19 02:35
60300925010	MW-192-201904	Water	04/24/19 13:25	04/25/19 02:35
60300925011	TMW-27-201904	Water	04/24/19 09:05	04/25/19 02:35
60300925012	MW-187-201904	Water	04/24/19 10:40	04/25/19 02:35
60300925013	MW-188-201904	Water	04/24/19 12:00	04/25/19 02:35
60300925014	TMW-19-201904	Water	04/24/19 14:00	04/25/19 02:35
60300925015	IW-73-201904	Water	04/24/19 14:30	04/25/19 02:35
60300925016	RW-69-201904	Water	04/24/19 15:35	04/25/19 02:35
60300925017	ITMW-21-201904	Water	04/24/19 14:35	04/25/19 02:35
60300925018	TMW-12-201904	Water	04/24/19 16:10	04/25/19 02:35
60300925019	TMW-23-201904	Water	04/24/19 14:05	04/25/19 02:35
60300925020	TMW-24-201904	Water	04/24/19 15:32	04/25/19 02:35
60300925021	MW-182-201904	Water	04/24/19 15:35	04/25/19 02:35
60300925022	MW-178-201904	Water	04/24/19 11:50	04/25/19 02:35
60300925023	MW-179-201904	Water	04/24/19 12:05	04/25/19 02:35
60300925024	ITMW-7-201904	Water	04/24/19 13:55	04/25/19 02:35
60300925025	MW-37-201904	Water	04/24/19 15:05	04/25/19 02:35
60300925026	MW-93-201904	Water	04/24/19 16:45	04/25/19 02:35
60300925027	MW-39R-201904	Water	04/24/19 17:05	04/25/19 02:35
60300925028	MW-46R-201904	Water	04/24/19 16:50	04/25/19 02:35
60300925029	TMW-14-201904	Water	04/24/19 17:20	04/25/19 02:35
60300925030	EB-02-201904	Water	04/24/19 17:30	04/25/19 02:35
60300925031	EB-03-201904	Water	04/24/19 17:57	04/25/19 02:35
60300925032	TB-02-201904	Water	04/24/19 09:00	04/25/19 02:35
60300925033	TB-03-201904	Water	04/24/19 09:00	04/25/19 02:35
60300925034	VP-10-201904	Water	04/24/19 09:15	04/25/19 02:35
60300925035	VP-12-201904	Water	04/24/19 09:40	04/25/19 02:35
60300925036	VP-7-201904	Water	04/24/19 10:10	04/25/19 02:35
60300925037	VP-8-201904	Water	04/24/19 10:15	04/25/19 02:35

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60300925038	**VP-14-201904**	Water	04/24/19 11:15	04/25/19 02:35
60300925039	**ITMW-5-201904**	Water	04/24/19 17:11	04/25/19 02:35

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60300925001	MW-98-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925002	MW-184-20190	EPA 5030B/8260	PGH	38	PASI-K
60300925003	MW-99-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925004	ITMW-20-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925005	MW-29-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925006	MW-26-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925007	MW-96-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925008	MW-97-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925009	MW-183R-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925010	MW-192-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925011	TMW-27-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925012	MW-187-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925013	MW-188-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925014	TMW-19-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925015	IW-73-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925016	RW-69-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925017	ITMW-21-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925018	TMW-12-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925019	TMW-23-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925020	TMW-24-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925021	MW-182-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925022	MW-178-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925023	MW-179-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925024	ITMW-7-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925025	MW-37-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925026	MW-93-201904	EPA 5030B/8260	EMD, PGH	38	PASI-K
60300925027	MW-39R-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925028	MW-46R-201904	EPA 5030B/8260	EMD, PGH	38	PASI-K
60300925029	TMW-14-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925030	EB-02-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925031	EB-03-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925032	TB-02-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925033	TB-03-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925034	VP-10-201904	EPA 5030B/8260	EMD, PGH	38	PASI-K
60300925035	VP-12-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925036	VP-7-201904	EPA 5030B/8260	PGH	38	PASI-K
60300925037	VP-8-201904	EPA 5030B/8260	PGH	38	PASI-K

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60300925038	**VP-14-201904**	EPA 5030B/8260	PGH	38	PASI-K
60300925039	**ITMW-5-201904**	EPA 5030B/8260	EMD, PGH	38	PASI-K

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: June 03, 2019

General Information:
39 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 581749

B: Analyte was detected in the associated method blank.
- BLANK for HBN 581749 [MSV/9662 (Lab ID: 2387314)
  - 1,2-Dichloroethane

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 581744

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 581749

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60300925027,60300925028,60300925029

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2387318)
  - Trichloroethene
  - cis-1,2-Dichloroethene
- MS (Lab ID: 2387320)
  - Trichloroethene

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: June 03, 2019

QC Batch: 581749

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60300925027,60300925028,60300925029

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 2387319)
  - Methylene Chloride
  - Trichloroethene
  - cis-1,2-Dichloroethene
- MSD (Lab ID: 2387321)
  - Trichloroethene

QC Batch: 581989

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 582563

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

Sample: MW-99-201904 **Lab ID: 60300925003** Collected: 04/24/19 11:53 Received: 04/25/19 02:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		04/30/19 03:29	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		04/30/19 03:29	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		04/30/19 03:29	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		04/30/19 03:29	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		04/30/19 03:29	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		04/30/19 03:29	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		04/30/19 03:29	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		04/30/19 03:29	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		04/30/19 03:29	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		04/30/19 03:29	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		04/30/19 03:29	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		04/30/19 03:29	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		04/30/19 03:29	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		04/30/19 03:29	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		04/30/19 03:29	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		04/30/19 03:29	75-35-4	
cis-1,2-Dichloroethene	**1.6**	ug/L	1.0	0.17	1		04/30/19 03:29	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		04/30/19 03:29	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		04/30/19 03:29	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		04/30/19 03:29	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		04/30/19 03:29	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		04/30/19 03:29	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		04/30/19 03:29	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		04/30/19 03:29	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		04/30/19 03:29	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		04/30/19 03:29	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		04/30/19 03:29	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		04/30/19 03:29	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		04/30/19 03:29	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		04/30/19 03:29	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		04/30/19 03:29	79-00-5	
Trichloroethene	**23.6**	ug/L	1.0	0.17	1		04/30/19 03:29	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		04/30/19 03:29	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		04/30/19 03:29	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		04/30/19 03:29	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		04/30/19 03:29	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		04/30/19 03:29	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		04/30/19 03:29		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

QC Batch: 581606 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60300925001, 60300925002, 60300925003, 60300925004, 60300925005, 60300925006, 60300925007, 60300925008, 60300925009, 60300925010, 60300925011, 60300925012, 60300925013, 60300925014, 60300925015, 60300925016, 60300925017, 60300925018, 60300925019

METHOD BLANK: 2386706 Matrix: Water
Associated Lab Samples: 60300925001, 60300925002, 60300925003, 60300925004, 60300925005, 60300925006, 60300925007, 60300925008, 60300925009, 60300925010, 60300925011, 60300925012, 60300925013, 60300925014, 60300925015, 60300925016, 60300925017, 60300925018, 60300925019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	04/30/19 02:47	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	04/30/19 02:47	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	04/30/19 02:47	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	04/30/19 02:47	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	04/30/19 02:47	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	04/30/19 02:47	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	04/30/19 02:47	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	04/30/19 02:47	
2-Hexanone	ug/L	ND	10.0	1.0	04/30/19 02:47	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	04/30/19 02:47	
Acetone	ug/L	ND	10.0	3.3	04/30/19 02:47	
Benzene	ug/L	ND	1.0	0.079	04/30/19 02:47	
Bromodichloromethane	ug/L	ND	1.0	0.17	04/30/19 02:47	
Bromoform	ug/L	ND	1.0	0.21	04/30/19 02:47	
Bromomethane	ug/L	ND	5.0	0.32	04/30/19 02:47	
Carbon disulfide	ug/L	ND	5.0	0.16	04/30/19 02:47	
Carbon tetrachloride	ug/L	ND	1.0	0.084	04/30/19 02:47	
Chlorobenzene	ug/L	ND	1.0	0.13	04/30/19 02:47	
Chloroethane	ug/L	ND	1.0	0.42	04/30/19 02:47	
Chloroform	ug/L	ND	1.0	0.10	04/30/19 02:47	
Chloromethane	ug/L	ND	1.0	0.16	04/30/19 02:47	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	04/30/19 02:47	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	04/30/19 02:47	
Dibromochloromethane	ug/L	ND	1.0	0.15	04/30/19 02:47	
Ethylbenzene	ug/L	ND	1.0	0.12	04/30/19 02:47	
Methylene Chloride	ug/L	ND	1.0	0.27	04/30/19 02:47	
Styrene	ug/L	ND	1.0	0.15	04/30/19 02:47	
Tetrachloroethene	ug/L	ND	1.0	0.22	04/30/19 02:47	
Toluene	ug/L	ND	1.0	0.14	04/30/19 02:47	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	04/30/19 02:47	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	04/30/19 02:47	
Trichloroethene	ug/L	ND	1.0	0.17	04/30/19 02:47	
Vinyl chloride	ug/L	ND	1.0	0.11	04/30/19 02:47	
Xylene (Total)	ug/L	ND	3.0	0.34	04/30/19 02:47	
1,2-Dichloroethane-d4 (S)	%	105	77-122		04/30/19 02:47	
4-Bromofluorobenzene (S)	%	98	80-120		04/30/19 02:47	
Toluene-d8 (S)	%	99	80-120		04/30/19 02:47	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

LABORATORY CONTROL SAMPLE: 2386707

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	21.3	106	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	17.9	90	71-122	
1,1,2-Trichloroethane	ug/L	20	20.1	100	76-123	
1,1-Dichloroethane	ug/L	20	21.4	107	78-117	
1,1-Dichloroethene	ug/L	20	23.0	115	74-122	
1,2-Dichloroethane	ug/L	20	21.6	108	73-120	
1,2-Dichloropropane	ug/L	20	20.5	103	78-115	
2-Butanone (MEK)	ug/L	100	102	102	54-133	
2-Hexanone	ug/L	100	98.8	99	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	99.2	99	62-130	
Acetone	ug/L	100	91.3	91	54-130	
Benzene	ug/L	20	20.9	104	80-120	
Bromodichloromethane	ug/L	20	21.5	107	78-121	
Bromoform	ug/L	20	20.0	100	62-137	
Bromomethane	ug/L	20	22.0	110	41-145	
Carbon disulfide	ug/L	20	22.2	111	64-119	
Carbon tetrachloride	ug/L	20	22.2	111	77-122	
Chlorobenzene	ug/L	20	20.4	102	80-123	
Chloroethane	ug/L	20	21.6	108	60-146	
Chloroform	ug/L	20	21.2	106	81-116	
Chloromethane	ug/L	20	29.0	145	29-154	
cis-1,2-Dichloroethene	ug/L	20	21.7	108	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.7	104	78-118	
Dibromochloromethane	ug/L	20	20.4	102	73-128	
Ethylbenzene	ug/L	20	20.3	101	80-120	
Methylene Chloride	ug/L	20	21.0	105	80-126	
Styrene	ug/L	20	20.7	103	85-120	
Tetrachloroethene	ug/L	20	20.2	101	77-121	
Toluene	ug/L	20	21.0	105	80-120	
trans-1,2-Dichloroethene	ug/L	20	21.1	106	80-120	
trans-1,3-Dichloropropene	ug/L	20	19.1	96	76-123	
Trichloroethene	ug/L	20	23.3	117	80-121	
Vinyl chloride	ug/L	20	24.0	120	46-162	
Xylene (Total)	ug/L	60	63.6	106	80-120	
1,2-Dichloroethane-d4 (S)	%			103	77-122	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2386708 2386709

Parameter	Units	60300925002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	21.1	21.0	105	105	67-137	0	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	17.1	17.0	86	85	54-134	1	33	
1,1,2-Trichloroethane	ug/L	ND	20	20	18.3	17.1	92	86	59-131	7	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2386708 2386709

Parameter	Units	60300925002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	20.0	19.8	100	99	63-134	1	31	
1,1-Dichloroethene	ug/L	ND	20	20	22.4	22.5	112	112	64-140	0	37	
1,2-Dichloroethane	ug/L	ND	20	20	19.4	18.4	97	92	42-140	6	35	
1,2-Dichloropropane	ug/L	ND	20	20	19.0	18.8	95	94	60-132	1	30	
2-Butanone (MEK)	ug/L	ND	100	100	82.2	85.1	82	85	44-132	3	34	
2-Hexanone	ug/L	ND	100	100	83.7	79.5	84	80	47-134	5	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	83.0	81.1	83	81	50-136	2	34	
Acetone	ug/L	ND	100	100	88.2	82.6	86	80	35-129	7	35	
Benzene	ug/L	ND	20	20	19.7	19.8	99	99	42-137	0	35	
Bromodichloromethane	ug/L	ND	20	20	19.4	19.3	97	96	61-130	1	32	
Bromoform	ug/L	ND	20	20	16.8	16.4	84	82	53-128	2	32	
Bromomethane	ug/L	ND	20	20	20.4	23.1	102	115	33-148	12	42	
Carbon disulfide	ug/L	ND	20	20	23.6	22.3	118	111	52-138	6	37	
Carbon tetrachloride	ug/L	ND	20	20	21.3	21.2	106	106	65-143	1	31	
Chlorobenzene	ug/L	ND	20	20	20.0	19.4	100	97	63-131	3	30	
Chloroethane	ug/L	ND	20	20	22.0	21.8	110	109	51-153	1	39	
Chloroform	ug/L	ND	20	20	19.5	19.7	98	99	62-129	1	32	
Chloromethane	ug/L	ND	20	20	25.2	24.3	126	121	16-169	4	59	
cis-1,2-Dichloroethene	ug/L	ND	20	20	20.3	20.2	102	101	43-152	1	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	18.8	18.9	94	94	58-127	0	31	
Dibromochloromethane	ug/L	ND	20	20	18.5	17.9	92	90	54-134	3	33	
Ethylbenzene	ug/L	ND	20	20	19.5	19.2	97	96	44-143	1	36	
Methylene Chloride	ug/L	ND	20	20	20.2	18.5	101	92	65-135	9	33	
Styrene	ug/L	ND	20	20	19.2	19.3	96	97	49-141	1	37	
Tetrachloroethene	ug/L	ND	20	20	20.8	19.5	104	97	62-134	6	33	
Toluene	ug/L	ND	20	20	20.3	19.9	102	99	45-142	2	36	
trans-1,2-Dichloroethene	ug/L	ND	20	20	20.8	20.6	104	103	65-133	1	32	
trans-1,3-Dichloropropene	ug/L	ND	20	20	17.3	16.2	87	81	56-127	7	28	
Trichloroethene	ug/L	ND	20	20	21.9	21.7	109	109	61-148	1	25	
Vinyl chloride	ug/L	ND	20	20	23.2	23.4	116	117	35-185	1	29	
Xylene (Total)	ug/L	ND	60	60	60.8	59.9	101	100	33-149	1	35	
1,2-Dichloroethane-d4 (S)	%						100	99	77-122			
4-Bromofluorobenzene (S)	%						99	100	80-120			
Toluene-d8 (S)	%						100	99	80-120			
Preservation pH		1.0			1.0	1.0				0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

QC Batch: 581744 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60300925015, 60300925018, 60300925020, 60300925021, 60300925022, 60300925023, 60300925024, 60300925025

METHOD BLANK: 2387285 Matrix: Water
Associated Lab Samples: 60300925015, 60300925018, 60300925020, 60300925021, 60300925022, 60300925023, 60300925024, 60300925025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	04/30/19 13:00	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	04/30/19 13:00	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	04/30/19 13:00	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	04/30/19 13:00	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	04/30/19 13:00	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	04/30/19 13:00	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	04/30/19 13:00	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	04/30/19 13:00	
2-Hexanone	ug/L	ND	10.0	1.0	04/30/19 13:00	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	04/30/19 13:00	
Acetone	ug/L	ND	10.0	3.3	04/30/19 13:00	
Benzene	ug/L	ND	1.0	0.079	04/30/19 13:00	
Bromodichloromethane	ug/L	ND	1.0	0.17	04/30/19 13:00	
Bromoform	ug/L	ND	1.0	0.21	04/30/19 13:00	
Bromomethane	ug/L	ND	5.0	0.32	04/30/19 13:00	
Carbon disulfide	ug/L	0.17J	5.0	0.16	04/30/19 13:00	
Carbon tetrachloride	ug/L	ND	1.0	0.084	04/30/19 13:00	
Chlorobenzene	ug/L	ND	1.0	0.13	04/30/19 13:00	
Chloroethane	ug/L	ND	1.0	0.42	04/30/19 13:00	
Chloroform	ug/L	ND	1.0	0.10	04/30/19 13:00	
Chloromethane	ug/L	ND	1.0	0.16	04/30/19 13:00	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	04/30/19 13:00	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	04/30/19 13:00	
Dibromochloromethane	ug/L	ND	1.0	0.15	04/30/19 13:00	
Ethylbenzene	ug/L	ND	1.0	0.12	04/30/19 13:00	
Methylene Chloride	ug/L	ND	1.0	0.27	04/30/19 13:00	
Styrene	ug/L	ND	1.0	0.15	04/30/19 13:00	
Tetrachloroethene	ug/L	ND	1.0	0.22	04/30/19 13:00	
Toluene	ug/L	ND	1.0	0.14	04/30/19 13:00	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	04/30/19 13:00	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	04/30/19 13:00	
Trichloroethene	ug/L	ND	1.0	0.17	04/30/19 13:00	
Vinyl chloride	ug/L	ND	1.0	0.11	04/30/19 13:00	
Xylene (Total)	ug/L	ND	3.0	0.34	04/30/19 13:00	
1,2-Dichloroethane-d4 (S)	%	99	77-122		04/30/19 13:00	
4-Bromofluorobenzene (S)	%	102	80-120		04/30/19 13:00	
Toluene-d8 (S)	%	102	80-120		04/30/19 13:00	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

LABORATORY CONTROL SAMPLE: 2387286

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.4	97	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	18.9	95	71-122	
1,1,2-Trichloroethane	ug/L	20	18.5	92	76-123	
1,1-Dichloroethane	ug/L	20	18.5	92	78-117	
1,1-Dichloroethene	ug/L	20	19.8	99	74-122	
1,2-Dichloroethane	ug/L	20	18.9	94	73-120	
1,2-Dichloropropane	ug/L	20	19.7	99	78-115	
2-Butanone (MEK)	ug/L	100	101	101	54-133	
2-Hexanone	ug/L	100	102	102	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	101	101	62-130	
Acetone	ug/L	100	95.3	95	54-130	
Benzene	ug/L	20	19.4	97	80-120	
Bromodichloromethane	ug/L	20	18.9	94	78-121	
Bromoform	ug/L	20	19.2	96	62-137	
Bromomethane	ug/L	20	17.5	87	41-145	
Carbon disulfide	ug/L	20	20.7	103	64-119	
Carbon tetrachloride	ug/L	20	19.2	96	77-122	
Chlorobenzene	ug/L	20	18.7	93	80-123	
Chloroethane	ug/L	20	17.6	88	60-146	
Chloroform	ug/L	20	19.2	96	81-116	
Chloromethane	ug/L	20	12.5	63	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.8	99	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.1	100	78-118	
Dibromochloromethane	ug/L	20	19.4	97	73-128	
Ethylbenzene	ug/L	20	19.1	96	80-120	
Methylene Chloride	ug/L	20	20.1	100	80-126	
Styrene	ug/L	20	18.9	94	85-120	
Tetrachloroethene	ug/L	20	19.0	95	77-121	
Toluene	ug/L	20	18.7	94	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.8	99	80-120	
trans-1,3-Dichloropropene	ug/L	20	19.0	95	76-123	
Trichloroethene	ug/L	20	20.6	103	80-121	
Vinyl chloride	ug/L	20	17.4	87	46-162	
Xylene (Total)	ug/L	60	56.9	95	80-120	
1,2-Dichloroethane-d4 (S)	%			99	77-122	
4-Bromofluorobenzene (S)	%			98	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

QC Batch: 581749 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60300925026, 60300925027, 60300925028, 60300925029, 60300925030, 60300925031, 60300925032, 60300925033, 60300925034, 60300925035, 60300925036, 60300925037, 60300925038, 60300925039

METHOD BLANK: 2387314 Matrix: Water
Associated Lab Samples: 60300925026, 60300925027, 60300925028, 60300925029, 60300925030, 60300925031, 60300925032, 60300925033, 60300925034, 60300925035, 60300925036, 60300925037, 60300925038, 60300925039

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	05/01/19 16:44	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	05/01/19 16:44	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	05/01/19 16:44	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	05/01/19 16:44	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	05/01/19 16:44	
1,2-Dichloroethane	ug/L	0.19J	1.0	0.14	05/01/19 16:44	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	05/01/19 16:44	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	05/01/19 16:44	
2-Hexanone	ug/L	ND	10.0	1.0	05/01/19 16:44	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	05/01/19 16:44	
Acetone	ug/L	ND	10.0	3.3	05/01/19 16:44	
Benzene	ug/L	ND	1.0	0.079	05/01/19 16:44	
Bromodichloromethane	ug/L	ND	1.0	0.17	05/01/19 16:44	
Bromoform	ug/L	ND	1.0	0.21	05/01/19 16:44	
Bromomethane	ug/L	ND	5.0	0.32	05/01/19 16:44	
Carbon disulfide	ug/L	0.20J	5.0	0.16	05/01/19 16:44	
Carbon tetrachloride	ug/L	ND	1.0	0.084	05/01/19 16:44	
Chlorobenzene	ug/L	ND	1.0	0.13	05/01/19 16:44	
Chloroethane	ug/L	ND	1.0	0.42	05/01/19 16:44	
Chloroform	ug/L	ND	1.0	0.10	05/01/19 16:44	
Chloromethane	ug/L	ND	1.0	0.16	05/01/19 16:44	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	05/01/19 16:44	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	05/01/19 16:44	
Dibromochloromethane	ug/L	ND	1.0	0.15	05/01/19 16:44	
Ethylbenzene	ug/L	ND	1.0	0.12	05/01/19 16:44	
Methylene Chloride	ug/L	ND	1.0	0.27	05/01/19 16:44	
Styrene	ug/L	ND	1.0	0.15	05/01/19 16:44	
Tetrachloroethene	ug/L	ND	1.0	0.22	05/01/19 16:44	
Toluene	ug/L	0.16J	1.0	0.14	05/01/19 16:44	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	05/01/19 16:44	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	05/01/19 16:44	
Trichloroethene	ug/L	ND	1.0	0.17	05/01/19 16:44	
Vinyl chloride	ug/L	ND	1.0	0.11	05/01/19 16:44	
Xylene (Total)	ug/L	ND	3.0	0.34	05/01/19 16:44	
1,2-Dichloroethane-d4 (S)	%	101	77-122		05/01/19 16:44	
4-Bromofluorobenzene (S)	%	98	80-120		05/01/19 16:44	
Toluene-d8 (S)	%	100	80-120		05/01/19 16:44	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

LABORATORY CONTROL SAMPLE: 2387315

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.2	96	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.7	98	71-122	
1,1,2-Trichloroethane	ug/L	20	18.1	91	76-123	
1,1-Dichloroethane	ug/L	20	19.2	96	78-117	
1,1-Dichloroethene	ug/L	20	19.7	98	74-122	
1,2-Dichloroethane	ug/L	20	18.6	93	73-120	
1,2-Dichloropropane	ug/L	20	19.5	98	78-115	
2-Butanone (MEK)	ug/L	100	102	102	54-133	
2-Hexanone	ug/L	100	105	105	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	103	103	62-130	
Acetone	ug/L	100	86.4	86	54-130	
Benzene	ug/L	20	19.3	97	80-120	
Bromodichloromethane	ug/L	20	18.7	93	78-121	
Bromoform	ug/L	20	18.4	92	62-137	
Bromomethane	ug/L	20	17.0	85	41-145	
Carbon disulfide	ug/L	20	19.7	98	64-119	
Carbon tetrachloride	ug/L	20	19.0	95	77-122	
Chlorobenzene	ug/L	20	19.7	99	80-123	
Chloroethane	ug/L	20	17.8	89	60-146	
Chloroform	ug/L	20	19.1	96	81-116	
Chloromethane	ug/L	20	26.2	131	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.9	100	80-120	
cis-1,3-Dichloropropene	ug/L	20	19.8	99	78-118	
Dibromochloromethane	ug/L	20	19.2	96	73-128	
Ethylbenzene	ug/L	20	18.6	93	80-120	
Methylene Chloride	ug/L	20	18.9	94	80-126	
Styrene	ug/L	20	19.1	95	85-120	
Tetrachloroethene	ug/L	20	18.3	92	77-121	
Toluene	ug/L	20	18.4	92	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.4	97	80-120	
trans-1,3-Dichloropropene	ug/L	20	18.5	93	76-123	
Trichloroethene	ug/L	20	20.5	102	80-121	
Vinyl chloride	ug/L	20	17.8	89	46-162	
Xylene (Total)	ug/L	60	56.1	94	80-120	
1,2-Dichloroethane-d4 (S)	%			101	77-122	
4-Bromofluorobenzene (S)	%			103	80-120	
Toluene-d8 (S)	%			97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2387316 2387317

Parameter	Units	60300925027 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	20.0	20.2	100	101	67-137	1	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	19.0	19.7	95	99	54-134	4	33	
1,1,2-Trichloroethane	ug/L	ND	20	20	17.9	18.2	89	91	59-131	2	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2387316			2387317							
Parameter	Units	60300925027 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	19.1	19.5	96	97	63-134	2	31	
1,1-Dichloroethene	ug/L	ND	20	20	19.6	20.8	98	104	64-140	6	37	
1,2-Dichloroethane	ug/L	0.15J	20	20	17.5	18.1	87	90	42-140	3	35	
1,2-Dichloropropane	ug/L	ND	20	20	18.8	19.3	94	96	60-132	3	30	
2-Butanone (MEK)	ug/L	ND	100	100	88.4	96.1	88	96	44-132	8	34	
2-Hexanone	ug/L	ND	100	100	92.3	102	92	102	47-134	10	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	90.2	99.5	90	100	50-136	10	34	
Acetone	ug/L	4.6J	100	100	74.2	88.1	70	84	35-129	17	35	
Benzene	ug/L	ND	20	20	19.0	19.8	95	99	42-137	4	35	
Bromodichloromethane	ug/L	ND	20	20	18.5	19.4	92	97	61-130	5	32	
Bromoform	ug/L	ND	20	20	16.4	17.3	82	87	53-128	6	32	
Bromomethane	ug/L	ND	20	20	13.9	15.9	70	80	33-148	13	42	
Carbon disulfide	ug/L	ND	20	20	20.7	21.8	103	109	52-138	5	37	
Carbon tetrachloride	ug/L	ND	20	20	19.8	20.7	99	103	65-143	4	31	
Chlorobenzene	ug/L	ND	20	20	19.1	20.2	95	101	63-131	6	30	
Chloroethane	ug/L	ND	20	20	18.0	19.9	90	99	51-153	10	39	
Chloroform	ug/L	ND	20	20	18.6	19.2	93	96	62-129	3	32	
Chloromethane	ug/L	ND	20	20	23.6	19.6	118	98	16-169	19	59	
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.8	19.8	94	99	43-152	5	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	18.2	19.1	91	95	58-127	5	31	
Dibromochloromethane	ug/L	ND	20	20	17.8	18.4	89	92	54-134	4	33	
Ethylbenzene	ug/L	ND	20	20	18.1	18.7	90	93	44-143	3	36	
Methylene Chloride	ug/L	ND	20	20	18.4	17.8	92	89	65-135	3	33	
Styrene	ug/L	ND	20	20	18.0	18.7	90	93	49-141	4	37	
Tetrachloroethene	ug/L	ND	20	20	18.0	18.9	90	94	62-134	5	33	
Toluene	ug/L	ND	20	20	17.9	19.1	90	96	45-142	6	36	
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.0	18.7	95	94	65-133	2	32	
trans-1,3-Dichloropropene	ug/L	ND	20	20	17.2	17.8	86	89	56-127	3	28	
Trichloroethene	ug/L	ND	20	20	20.4	21.0	102	105	61-148	3	25	
Vinyl chloride	ug/L	ND	20	20	18.8	19.5	94	97	35-185	4	29	
Xylene (Total)	ug/L	ND	60	60	54.8	56.5	91	94	33-149	3	35	
1,2-Dichloroethane-d4 (S)	%						102	99	77-122			
4-Bromofluorobenzene (S)	%						103	99	80-120			
Toluene-d8 (S)	%						97	99	80-120			
Preservation pH		1.0			1.0	1.0				0		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2387318			2387319							
Parameter	Units	60300925028 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	20.1	19.7	100	98	67-137	2	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	19.2	18.7	96	93	54-134	2	33	
1,1,2-Trichloroethane	ug/L	ND	20	20	18.9	18.5	95	92	59-131	2	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2387318 2387319

Parameter	Units	60300925028 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	18.8	19.2	94	96	63-134	2	31	
1,1-Dichloroethene	ug/L	1.4	20	20	20.1	20.7	95	98	64-140	3	37	
1,2-Dichloroethane	ug/L	ND	20	20	18.8	18.2	85	82	42-140	4	35	
1,2-Dichloropropane	ug/L	ND	20	20	20.0	19.2	100	96	60-132	4	30	
2-Butanone (MEK)	ug/L	ND	100	100	99.5	94.7	94	89	44-132	5	34	
2-Hexanone	ug/L	ND	100	100	99.0	97.1	99	97	47-134	2	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	102	97.1	102	97	50-136	5	34	
Acetone	ug/L	ND	100	100	91.4	88.7	91	89	35-129	3	35	
Benzene	ug/L	ND	20	20	19.6	19.2	98	96	42-137	2	35	
Bromodichloromethane	ug/L	ND	20	20	19.4	18.4	97	92	61-130	5	32	
Bromoform	ug/L	ND	20	20	18.2	17.8	91	89	53-128	2	32	
Bromomethane	ug/L	ND	20	20	13.7	13.5	68	67	33-148	2	42	
Carbon disulfide	ug/L	ND	20	20	21.3	19.9	107	99	52-138	7	37	
Carbon tetrachloride	ug/L	ND	20	20	20.4	19.8	102	99	65-143	3	31	
Chlorobenzene	ug/L	ND	20	20	19.0	18.9	95	94	63-131	1	30	
Chloroethane	ug/L	ND	20	20	23.0	21.2	115	106	51-153	8	39	
Chloroform	ug/L	ND	20	20	19.6	18.4	98	92	62-129	7	32	
Chloromethane	ug/L	ND	20	20	28.2	25.4	141	127	16-169	11	59	
cis-1,2-Dichloroethene	ug/L	13.4	20	20	20.9	19.6	38	32	43-152	6	30	M1
cis-1,3-Dichloropropene	ug/L	ND	20	20	19.5	18.3	97	92	58-127	6	31	
Dibromochloromethane	ug/L	ND	20	20	18.4	18.0	92	90	54-134	2	33	
Ethylbenzene	ug/L	ND	20	20	17.9	18.0	90	90	44-143	1	36	
Methylene Chloride	ug/L	ND	20	20	19.2	17.8	67	60	65-135	8	33	M1
Styrene	ug/L	ND	20	20	18.5	17.8	92	89	49-141	4	37	
Tetrachloroethene	ug/L	ND	20	20	18.2	18.4	91	92	62-134	1	33	
Toluene	ug/L	ND	20	20	18.0	18.0	84	84	45-142	0	36	
trans-1,2-Dichloroethene	ug/L	0.42J	20	20	20.5	18.1	102	90	65-133	12	32	
trans-1,3-Dichloropropene	ug/L	ND	20	20	17.0	16.9	85	84	56-127	1	28	
Trichloroethene	ug/L	560	20	20	31.2	30.6	-2640	-2640	61-148	2	25	M1
Vinyl chloride	ug/L	0.46J	20	20	19.6	18.8	98	94	35-185	4	29	
Xylene (Total)	ug/L	ND	60	60	55.4	55.2	92	92	33-149	0	35	
1,2-Dichloroethane-d4 (S)	%						106	101	77-122			
4-Bromofluorobenzene (S)	%						98	100	80-120			
Toluene-d8 (S)	%						97	98	80-120			
Preservation pH		1.0			1.0	1.0				0		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2387320 2387321

Parameter	Units	60300925029 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	200	200	210	207	105	104	67-137	1	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	200	200	196	197	98	99	54-134	0	33	
1,1,2-Trichloroethane	ug/L	ND	200	200	195	193	98	97	59-131	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2387320 2387321

Parameter	Units	60300925029 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	200	200	200	203	100	101	63-134	1	31	
1,1-Dichloroethene	ug/L	ND	200	200	207	204	104	102	64-140	2	37	
1,2-Dichloroethane	ug/L	0.14J	200	200	184	178	92	89	42-140	3	35	
1,2-Dichloropropane	ug/L	ND	200	200	201	193	101	96	60-132	4	30	
2-Butanone (MEK)	ug/L	ND	1000	1000	1000	991	100	99	44-132	1	34	
2-Hexanone	ug/L	ND	1000	1000	1020	1000	102	100	47-134	2	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1000	1000	998	984	100	98	50-136	1	34	
Acetone	ug/L	5.0J	1000	1000	857	836	85	83	35-129	2	35	
Benzene	ug/L	ND	200	200	200	197	100	99	42-137	1	35	
Bromodichloromethane	ug/L	ND	200	200	195	191	97	96	61-130	2	32	
Bromoform	ug/L	ND	200	200	171	182	86	91	53-128	6	32	
Bromomethane	ug/L	ND	200	200	176	170	88	85	33-148	3	42	
Carbon disulfide	ug/L	ND	200	200	218	206	109	103	52-138	5	37	
Carbon tetrachloride	ug/L	ND	200	200	203	203	102	101	65-143	0	31	
Chlorobenzene	ug/L	ND	200	200	205	198	102	99	63-131	4	30	
Chloroethane	ug/L	ND	200	200	203	186	102	93	51-153	9	39	
Chloroform	ug/L	ND	200	200	198	194	99	97	62-129	2	32	
Chloromethane	ug/L	ND	200	200	234	276	117	138	16-169	16	59	
cis-1,2-Dichloroethene	ug/L	0.39J	200	200	214	212	107	106	43-152	1	30	
cis-1,3-Dichloropropene	ug/L	ND	200	200	193	193	97	96	58-127	0	31	
Dibromochloromethane	ug/L	ND	200	200	191	191	96	96	54-134	0	33	
Ethylbenzene	ug/L	ND	200	200	189	195	95	98	44-143	3	36	
Methylene Chloride	ug/L	ND	200	200	205	193	102	96	65-135	6	33	
Styrene	ug/L	ND	200	200	193	190	97	95	49-141	2	37	
Tetrachloroethene	ug/L	ND	200	200	195	190	97	95	62-134	3	33	
Toluene	ug/L	ND	200	200	189	184	95	92	45-142	3	36	
trans-1,2-Dichloroethene	ug/L	ND	200	200	202	195	101	97	65-133	4	32	
trans-1,3-Dichloropropene	ug/L	ND	200	200	181	178	90	89	56-127	2	28	
Trichloroethene	ug/L	10.1	200	200	785	762	387	376	61-148	3	25	M1
Vinyl chloride	ug/L	ND	200	200	200	196	100	98	35-185	2	29	
Xylene (Total)	ug/L	ND	600	600	577	578	96	96	33-149	0	35	
1,2-Dichloroethane-d4 (S)	%						104	103	77-122			
4-Bromofluorobenzene (S)	%						99	100	80-120			
Toluene-d8 (S)	%						100	99	80-120			
Preservation pH		1.0			1.0	1.0				0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

QC Batch: 581989 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60300925020, 60300925025

METHOD BLANK: 2388377 Matrix: Water
Associated Lab Samples: 60300925020, 60300925025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	05/02/19 09:13	
Trichloroethene	ug/L	ND	1.0	0.17	05/02/19 09:13	
Vinyl chloride	ug/L	ND	1.0	0.11	05/02/19 09:13	
1,2-Dichloroethane-d4 (S)	%	102	77-122		05/02/19 09:13	
4-Bromofluorobenzene (S)	%	101	80-120		05/02/19 09:13	
Toluene-d8 (S)	%	99	80-120		05/02/19 09:13	

LABORATORY CONTROL SAMPLE: 2388378

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/L	20	19.3	97	80-120	
Trichloroethene	ug/L	20	20.3	101	80-121	
Vinyl chloride	ug/L	20	19.6	98	46-162	
1,2-Dichloroethane-d4 (S)	%			103	77-122	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			101	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

QC Batch: 582563 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60300925026, 60300925028, 60300925034, 60300925039

METHOD BLANK: 2390754 Matrix: Water
Associated Lab Samples: 60300925026, 60300925028, 60300925034, 60300925039

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	05/03/19 23:48	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.23	05/03/19 23:48	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	05/03/19 23:48	
1,1-Dichloroethane	ug/L	ND	1.0	0.12	05/03/19 23:48	
1,1-Dichloroethene	ug/L	ND	1.0	0.14	05/03/19 23:48	
1,2-Dichloroethane	ug/L	ND	1.0	0.33	05/03/19 23:48	
1,2-Dichloropropane	ug/L	ND	1.0	0.14	05/03/19 23:48	
2-Butanone (MEK)	ug/L	ND	10.0	1.8	05/03/19 23:48	
2-Hexanone	ug/L	ND	10.0	1.6	05/03/19 23:48	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	1.3	05/03/19 23:48	
Acetone	ug/L	ND	10.0	7.4	05/03/19 23:48	
Benzene	ug/L	ND	1.0	0.13	05/03/19 23:48	
Bromodichloromethane	ug/L	ND	1.0	0.14	05/03/19 23:48	
Bromoform	ug/L	ND	1.0	0.28	05/03/19 23:48	
Bromomethane	ug/L	ND	5.0	2.8	05/03/19 23:48	
Carbon disulfide	ug/L	ND	5.0	0.086	05/03/19 23:48	
Carbon tetrachloride	ug/L	ND	1.0	0.070	05/03/19 23:48	
Chlorobenzene	ug/L	ND	1.0	0.17	05/03/19 23:48	
Chloroethane	ug/L	ND	1.0	0.83	05/03/19 23:48	
Chloroform	ug/L	ND	1.0	0.25	05/03/19 23:48	
Chloromethane	ug/L	ND	1.0	0.51	05/03/19 23:48	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.18	05/03/19 23:48	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.18	05/03/19 23:48	
Dibromochloromethane	ug/L	ND	1.0	0.15	05/03/19 23:48	
Ethylbenzene	ug/L	ND	1.0	0.20	05/03/19 23:48	
Methylene Chloride	ug/L	ND	1.0	0.35	05/03/19 23:48	
Styrene	ug/L	ND	1.0	0.19	05/03/19 23:48	
Tetrachloroethene	ug/L	ND	1.0	0.14	05/03/19 23:48	
Toluene	ug/L	ND	1.0	0.17	05/03/19 23:48	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.082	05/03/19 23:48	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.18	05/03/19 23:48	
Trichloroethene	ug/L	ND	1.0	0.097	05/03/19 23:48	
Vinyl chloride	ug/L	ND	1.0	0.17	05/03/19 23:48	
Xylene (Total)	ug/L	ND	3.0	0.42	05/03/19 23:48	
1,2-Dichloroethane-d4 (S)	%	101	77-122		05/03/19 23:48	
4-Bromofluorobenzene (S)	%	100	80-120		05/03/19 23:48	
Toluene-d8 (S)	%	99	80-120		05/03/19 23:48	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

LABORATORY CONTROL SAMPLE: 2390755

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.1	95	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	17.2	86	71-122	
1,1,2-Trichloroethane	ug/L	20	18.6	93	76-123	
1,1-Dichloroethane	ug/L	20	19.4	97	78-117	
1,1-Dichloroethene	ug/L	20	19.0	95	74-122	
1,2-Dichloroethane	ug/L	20	18.7	93	73-120	
1,2-Dichloropropane	ug/L	20	19.4	97	78-115	
2-Butanone (MEK)	ug/L	100	96.8	97	54-133	
2-Hexanone	ug/L	100	95.0	95	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	96.4	96	62-130	
Acetone	ug/L	100	95.2	95	54-130	
Benzene	ug/L	20	19.7	98	80-120	
Bromodichloromethane	ug/L	20	19.2	96	78-121	
Bromoform	ug/L	20	19.6	98	62-137	
Bromomethane	ug/L	20	15.2	76	41-145	
Carbon disulfide	ug/L	20	20.6	103	64-119	
Carbon tetrachloride	ug/L	20	19.0	95	77-122	
Chlorobenzene	ug/L	20	19.5	98	80-123	
Chloroethane	ug/L	20	20.0	100	60-146	
Chloroform	ug/L	20	19.6	98	81-116	
Chloromethane	ug/L	20	21.0	105	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.4	97	80-120	
cis-1,3-Dichloropropene	ug/L	20	19.2	96	78-118	
Dibromochloromethane	ug/L	20	20.1	100	73-128	
Ethylbenzene	ug/L	20	19.0	95	80-120	
Methylene Chloride	ug/L	20	20.1	101	80-126	
Styrene	ug/L	20	19.8	99	85-120	
Tetrachloroethene	ug/L	20	19.4	97	77-121	
Toluene	ug/L	20	19.3	96	80-120	
trans-1,2-Dichloroethene	ug/L	20	18.8	94	80-120	
trans-1,3-Dichloropropene	ug/L	20	18.6	93	76-123	
Trichloroethene	ug/L	20	21.6	108	80-121	
Vinyl chloride	ug/L	20	18.9	94	46-162	
Xylene (Total)	ug/L	60	59.3	99	80-120	
1,2-Dichloroethane-d4 (S)	%			100	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 581744

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 581989

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 582563

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60300925001	MW-98-201904	EPA 5030B/8260	581606		
60300925002	MW-184-20190	EPA 5030B/8260	581606		
60300925003	MW-99-201904	EPA 5030B/8260	581606		
60300925004	ITMW-20-201904	EPA 5030B/8260	581606		
60300925005	MW-29-201904	EPA 5030B/8260	581606		
60300925006	MW-26-201904	EPA 5030B/8260	581606		
60300925007	MW-96-201904	EPA 5030B/8260	581606		
60300925008	MW-97-201904	EPA 5030B/8260	581606		
60300925009	MW-183R-201904	EPA 5030B/8260	581606		
60300925010	MW-192-201904	EPA 5030B/8260	581606		
60300925011	TMW-27-201904	EPA 5030B/8260	581606		
60300925012	MW-187-201904	EPA 5030B/8260	581606		
60300925013	MW-188-201904	EPA 5030B/8260	581606		
60300925014	TMW-19-201904	EPA 5030B/8260	581606		
60300925015	IW-73-201904	EPA 5030B/8260	581606		
60300925015	IW-73-201904	EPA 5030B/8260	581744		
60300925016	RW-69-201904	EPA 5030B/8260	581606		
60300925017	ITMW-21-201904	EPA 5030B/8260	581606		
60300925018	TMW-12-201904	EPA 5030B/8260	581606		
60300925018	TMW-12-201904	EPA 5030B/8260	581744		
60300925019	TMW-23-201904	EPA 5030B/8260	581606		
60300925020	TMW-24-201904	EPA 5030B/8260	581744		
60300925020	TMW-24-201904	EPA 5030B/8260	581989		
60300925021	MW-182-201904	EPA 5030B/8260	581744		
60300925022	MW-178-201904	EPA 5030B/8260	581744		
60300925023	MW-179-201904	EPA 5030B/8260	581744		
60300925024	ITMW-7-201904	EPA 5030B/8260	581744		
60300925025	MW-37-201904	EPA 5030B/8260	581744		
60300925025	MW-37-201904	EPA 5030B/8260	581989		
60300925026	MW-93-201904	EPA 5030B/8260	581749		
60300925026	MW-93-201904	EPA 5030B/8260	582563		
60300925027	MW-39R-201904	EPA 5030B/8260	581749		
60300925028	MW-46R-201904	EPA 5030B/8260	581749		
60300925028	MW-46R-201904	EPA 5030B/8260	582563		
60300925029	TMW-14-201904	EPA 5030B/8260	581749		
60300925030	EB-02-201904	EPA 5030B/8260	581749		
60300925031	EB-03-201904	EPA 5030B/8260	581749		
60300925032	TB-02-201904	EPA 5030B/8260	581749		
60300925033	TB-03-201904	EPA 5030B/8260	581749		
60300925034	VP-10-201904	EPA 5030B/8260	581749		
60300925034	VP-10-201904	EPA 5030B/8260	582563		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300925

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60300925035	**VP-12-201904**	EPA 5030B/8260	581749		
60300925036	**VP-7-201904**	EPA 5030B/8260	581749		
60300925037	**VP-8-201904**	EPA 5030B/8260	581749		
60300925038	**VP-14-201904**	EPA 5030B/8260	581749		
60300925039	**ITMW-5-201904**	EPA 5030B/8260	581749		
60300925039	**ITMW-5-201904**	EPA 5030B/8260	582563		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- / ... or MTJL Log-

WO# : 60300925

ALL 60300925

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Container Preservative Type **: 3

Lab Project Manager:

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Copy To: Nick Zurweller

Site Collection Info/Address:

Customer Project Name/Number:

State / County/City / Time Zone Collected PT MT CT ET

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print): Haley Anlers

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature): Haley Anlers

Turnaround Date Required: Standard

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive _____
[ ] Hold _____

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses: 8620 Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	✓	N	NA
Custody Signatures Present	✓	N	NA
Collector Signature Present	✓	N	NA
Bottles intact	✓	N	NA
Correct Bottles	✓	N	NA
Sufficient Volume	✓	N	NA
Samples received on ice	✓	N	NA
VOA - Headspace Acceptable	Y	✓	NA
USDA Regulated Soils	Y	N	✓
Samples in holding time	✓	N	NA
Residual Chlorine Present	Y	N	✓
Cl Strips:			
Sample pH Acceptable	Y	N	✓
pH Strips:			
Sulfide Present	Y	N	✓
Lead Acetate Strips:			

60300925

↓ LAB USE ONLY: ↓

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8620 Full List		Lab Sample # / Comments
MW-98-201904	GW	G	4/24/19	0925				3	X	1) G977(3)	001
MW-184-201904	↓	↓	↓	1056				↓	↓	1) G977(9)	002
MW-99-201904	↓	↓	↓	1153				↓	↓	1) G977(3)	003
ITMW-20-201904	↓	↓	↓	0915				↓	↓	↓	004
MW-29-201904	↓	↓	↓	1040				↓	↓	↓	005
MW-26-201904	↓	↓	↓	1205				↓	↓	↓	006
MW-96-201904	↓	↓	↓	0900				↓	↓	↓	007
MW-97-201904	↓	↓	↓	1030				↓	↓	↓	008
MW-183R-201904	↓	↓	↓	1130				↓	↓	↓	009
MW-192-201904	↓	↓	↓	1325				↓	↓	↓	010

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [✓] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y ✓ N/A

Packing Material Used: 20 lc

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [✓] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: T-296

Cooler Temp Upon Receipt 2.5, 1.3 oC

Cooler Therm Corr. Factor -1.0 oC

Cooler Temp Corrected 1.5, 0.3 oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 1 of 6

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Johanna Pavlovsky	4/24/19 @ 1800	[signature]	4/25/19 0235
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

F-ALL-C-010-rev.00, 05Jul2018

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Container Preservative Type **: 3

Lab Project Manager:

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Copy To: Nick Zurweller

Site Collection Info/Address:

Customer Project Name/Number:

State / County/City / Time Zone Collected PT MT CT ET

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print): Haley Ahlers

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature): Haley Ahlers

Turnaround Date Required: Standard

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses: 8620 Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	✓	N	NA
Custody Signatures Present	✓	N	NA
Collector Signature Present	✓	N	NA
Bottles intact	✓	N	NA
Correct Bottles	✓	N	NA
Sufficient Volume	✓	N	NA
Samples received on ice	✓	N	NA
VOA - Headspace Acceptable	Y	✓	NA
USDA Regulated Soils	Y	N	✓
Samples in holding time	✓	N	NA
Residual Chlorine Present	Y	N	✓
Cl Strips:			
Sample pH Acceptable	Y	N	✓
pH Strips:			
Sulfide Present	Y	N	✓
Lead Acetate Strips:			

60300925

↓ LAB USE ONLY: ↓

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8620 Full List		Lab Sample # / Comments
TMW-27-201904	GW	G	4/24/19	0905				3	X	DG9477(3)	04
MW-187-201904	↓	↓	↓	1040				↓	↓	↓	012
MW-188-201904	↓	↓	↓	1200				↓	↓	↓	013
TMW-19-201904	↓	↓	↓	1400				↓	↓	↓	014
IW-73-201904	↓	↓	↓	1430				↓	↓	↓	015
RW-69-201904	↓	↓	↓	1535				↓	↓	↓	016
ITMW-21-201904	↓	↓	↓	1435				↓	↓	↓	017
TMW-12-201904	↓	↓	↓	1610				↓	↓	↓	018
TMW-23-201904	↓	↓	↓	1405				↓	↓	↓	019
TMW-24-201904	↓	↓	↓	1532				↓	↓	↓	020

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [✓] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y ✓ N N/A

Packing Material Used: Zplc

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [✓] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: R-296

Cooler Temp Upon Receipt 2.5, 1.3 oC

Cooler Therm Corr. Factor -1.0 oC

Cooler Temp Corrected 1.5, 0.3 oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 2 of 6

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
See page 1/6		[signature]	4/25/19 0235
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

F-ALL-C-010-rev.00, 05Jul2018

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Container Preservative Type **: 3

Lab Project Manager:

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Copy To: Nick Zurweller

Site Collection Info/Address:

Customer Project Name/Number:

State / County/City / Time Zone Collected PT MT CT ET

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print): Haley Ahlers

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature): Haley Ahlers

Turnaround Date Required: Standard

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses: 8620 Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	✓	N	NA
Custody Signatures Present	✓	N	NA
Collector Signature Present	✓	N	NA
Bottles intact	✓	N	NA
Correct Bottles	✓	N	NA
Sufficient Volume	✓	N	NA
Samples received on ice	✓	N	NA
VOA - Headspace Acceptable	Y	✓	NA
USDA Regulated Soils	Y	N	✓
Samples in holding time	✓	N	NA
Residual Chlorine Present	Y	N	✓
Cl Strips:			
Sample pH Acceptable	Y	N	✓
pH Strips:			
Sulfide Present	Y	N	✓
Lead Acetate Strips:			

60300925

↓ LAB USE ONLY: ↓

Customer Sample ID	Matrix*	Comp/Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8620 Full List		Lab Sample # / Comments
MW-182-201904	GW	G	2/24/19	1535				3	X	1) G9H(3)	021
MW-178-201904				1150							022
MW-179-201904				1205							023
ITMW-7-201904				1355							024
MW-37-201904				1505							025
MW-93-201904				1645							026
MW-39R-201904				1705						1) G9H(9)	027
MW-46R-201904				1650						1) G9H(9)	028
MW-39R-201904-MS				1705							
MW-39R-201904-MSD				1705							

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [✓] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y ✓ N/A

Packing Material Used: Zpk

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [✓] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: T-296

Cooler Temp Upon Receipt 2.5 1.3 oC

Cooler Therm Corr. Factor -1.0 oC

Cooler Temp Corrected 1.5, 0.3 oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 3 of 6

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
See pg 1/6		[signature] 1 Pace	2/25/19 0235

F-ALL-C-010-rev.00, 05Jul2018

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Container Preservative Type **: 3

Lab Project Manager:

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Copy To: Nick Zurweller

Site Collection Info/Address:

Customer Project Name/Number:

State / County/City / Time Zone Collected PT MT CT ET

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print): Haley Ahlers

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature): Haley Ahlers

Turnaround Date Required: Standard

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive _____
[ ] Hold _____

RUSH:
Same Day Next Day 2 Day 3 Day 4 Day 5 Day
(Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses: 8620 Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	✓	N	NA
Custody Signatures Present	✓	N	NA
Collector Signature Present	✓	N	NA
Bottles intact	✓	N	NA
Correct Bottles	✓	N	NA
Sufficient Volume	✓	N	NA
Samples received on ice	✓	N	NA
VOA - Headspace Acceptable	~~Y~~	✓	NA
USDA Regulated Soils	Y	N	~~NA~~
Samples in holding time	✓	N	NA
Residual Chlorine Present	Y	N	~~NA~~
Cl Strips:			
Sample pH Acceptable	Y	N	~~NA~~
pH Strips:			
Sulfide Present	Y	N	~~NA~~
Lead Acetate Strips:			

60300925

↓ LAB USE ONLY: ↓

Customer Sample ID	Matrix*	Comp/Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8620 Full List		Lab Sample # / Comments
MW-184-201904-MS	GW	G	4/24/19	1056				3	X		
MW-184-201904-MSD				1056							
MW-46R-201904-MS				1650							
MW-46R-201904-MSD				1650							
TMW-14-201904				1720						DG9H(9)	029
TMW-14-201904-MS				1720							
TMW-14-201904-MSD				1720							
EB-02-201904				1730						DG9H(3)	030
EB-03-201904				1757							031
TB-02-201904	OT	NA	NA	NA				2		4/25/19 2 DEAH	032

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [✓] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y ~~N~~ N/A

Packing Material Used: 2pk

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [✓] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY
Table #: _____
ACCT #: _____
Template: _____
Prelogin: _____
PM: _____
PB: _____

LAB Sample Temperature Info:
Temp Blank received: Y N NA
Therm ID #: T-296
Cooler Temp Upon Receipt 2.5 1.3 oC
Cooler Therm Corr. Factor -1.0 oC
Cooler Temp Corrected 1.5 0.3 oC
Comments: _____

Trip Blank Received: Y N N/A
HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 4 of 6

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
see pg 1/6		[signature]	4/25/19 0235
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

F-ALL-C-010-rev.00, 05Jul2018

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller

Site Collection Info/Address:

Customer Project Name/Number:

State / County/City / Time Zone Collected: PT MT CT ET

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print): Haley Ahlers

Purchase Order #

DW PWS ID #:

Collected by (signature): Haley Ahlers

Quote #

DW Location Code #:

Turnaround Date Required: Std

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive _____
[ ] Hold _____

RUSH:
Same Day Next Day 2 Day 3 Day 4 Day 5 Day
(Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

Analyses: E620 Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

60300975

↓ LAB USE ONLY: ↓ Lab Sample # / Comments

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	E620 Full List	Lab Sample # / Comments
TB-03-20190404	OT	-	NA	NA				2	X	20694
TMW-12-20190404	GW	G	4-24-19	1610				3	X	033
~~TMW-21-20190404~~				1425				3	X	
~~TMW-24-20190404~~				1542				3	X	
TMW-5-20190404				1711				3	X	
~~TMW-23-20190404~~				1405				3	X	

(ignore)

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [X] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N/A

Packing Material Used: Zip

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: T-296

Cooler Temp Upon Receipt 1.3 oC

Cooler Therm Corr. Factor -1.0 oC

Cooler Temp Corrected 0.3 oC

Comments:

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 5 of 6

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
See page 1/6			4/25/19 0235
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller

Site Collection Info/Address:

Customer Project Name/Number:

State / County/City / Time Zone Collected: PT MT CT ET

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print): Haley Ahlers

Purchase Order #

DW PWS ID #:

Collected by (signature): Haley Ahlers

Quote #

DW Location Code #:

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive _____
[ ] Hold _____

Turnaround Date Required: Standard

RUSH:
Same Day Next Day 2 Day 3 Day 4 Day 5 Day
(Expedite Charges Apply)

Immediately Packed on Ice? [ ] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

Analyses: 8260 Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

6630092S

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses	LAB USE ONLY: Lab Sample # / Comments
VP-10-201904			4/24/19	0915				3	X	034
VP-12-201904				0940						035
VP-7-201904				1010						036
VP-8-201904				1015						037
VP-14-201904				1115						038

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____
ACCT #: _____
Template: _____
Prelogin: _____
PM: _____
PB: _____

LAB Sample Temperature Info:
Temp Blank received: Y N NA
Therm ID #: T-296
Cooler Temp Upon Receipt 2.5 oC
Cooler Therm Corr. Factor -1.0 oC
Cooler Temp Corrected 2.5 oC
Comments: _____

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
See page 1 of 6			4/25/19 0935
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

Trip Blank Received: Y N N/A
HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 12 of 12

Pace Analytical

Sample Receiving Non-Conformance Form (NCF)

Date:	Evaluated by:
Client:	

Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

60300925

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. If COC is incomplete, check applicable issues below and add details where appropriate:

	Collection date/time missing or incorrect		Analyses or analytes: missing or clarification needed		Samples listed on COC do not match samples received (missing, additional, etc.)
	Sample IDs on COC do not match sample labels		Required trip blanks were not received		Required signatures are missing

Comments/Details/Other Issues not listed above:

Didn't send sample TMW-12-20190401 (DEGH(3)).

3. Sample integrity issues: check applicable issues below and add details where appropriate:

	Samples: Past holding time		Samples: Condition needs to be brought to lab personnel's attention (details below)		Preservation: Improper
	Samples: Not field filtered		Containers: Broken or compromised		Temperature: not within acceptance criteria (typically 0-6C)
	Samples: Insufficient volume received		Containers: Incorrect		Temperature: Samples arrived frozen
	Samples: Cooler damaged or compromised		Custody Seals: Missing or compromised on samples, trip blanks or coolers		Vials received with improper headspace
	Samples: contain chlorine or sulfides		Packing Material: Insufficient/Improper		Other:

Comments/Details:

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:	
PM Initials:	Date/Time:	

Client Comments/Instructions:

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

June 04, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on April 26, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

RV-1 Revised report

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Richard Mannz
richard.mannz@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Arkansas Drinking Water
Missouri Certification Number: 10090
WY STR Certification #: 2456.01
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Florida: Cert E871149 SEKS WET
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-18-11
Utah Certification #: KS000212018-8
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070
Missouri Certification Number: 10090

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60300963001	MW-95-201904	Water	04/25/19 09:40	04/26/19 06:25
60300963002	DUP-06-201904	Water	04/25/19 09:40	04/26/19 06:25
60300963003	ITMW-10-201904	Water	04/25/19 11:15	04/26/19 06:25
60300963004	DUP-07-201904	Water	04/25/19 11:15	04/26/19 06:25
60300963005	MW-58R-201904	Water	04/25/19 12:40	04/26/19 06:25
60300963006	MW-55R-201904	Water	04/25/19 15:05	04/26/19 06:25
60300963007	TMW-21-201904	Water	04/25/19 17:55	04/26/19 06:25
60300963008	TMW-11-201904	Water	04/25/19 12:55	04/26/19 06:25
60300963009	TMW-25-201904	Water	04/25/19 11:00	04/26/19 06:25
60300963010	TMW-34-201904	Water	04/25/19 14:10	04/26/19 06:25
60300963011	MW-185-201904	Water	04/25/19 16:35	04/26/19 06:25
60300963012	MW-91-201904	Water	04/25/19 09:47	04/26/19 06:25
60300963013	IW-77-201904	Water	04/25/19 11:30	04/26/19 06:25
60300963014	DUP-04-201904	Water	04/25/19 11:30	04/26/19 06:25
60300963015	ITMW-11-201904	Water	04/25/19 14:15	04/26/19 06:25
60300963016	DUP-05-201904	Water	04/25/19 14:15	04/26/19 06:25
60300963017	MW-194-201904	Water	04/25/19 14:15	04/26/19 06:25
60300963018	MW-38-201904	Water	04/25/19 09:45	04/26/19 06:25
60300963019	DUP-02-201904	Water	04/25/19 09:45	04/26/19 06:25
60300963020	MW-56R-201904	Water	04/25/19 11:30	04/26/19 06:25
60300963021	DUP-03-201904	Water	04/25/19 11:30	04/26/19 06:25
60300963022	MW-57R-201904	Water	04/25/19 12:40	04/26/19 06:25
60300963023	MW-86-201904	Water	04/25/19 15:30	04/26/19 06:25
60300963024	MW-189-201904	Water	04/25/19 17:25	04/26/19 06:25
60300963025	TMW-16-201904	Water	04/25/19 10:50	04/26/19 06:25
60300963026	TMW-32-201904	Water	04/25/19 13:30	04/26/19 06:25
60300963027	MW-61R-201904	Water	04/25/19 15:40	04/26/19 06:25
60300963028	TMW-22R-201904	Water	04/25/19 17:45	04/26/19 06:25
60300963029	TMW-26-201904	Water	04/25/19 16:45	04/26/19 06:25
60300963030	TMW-10-201904	Water	04/25/19 17:30	04/26/19 06:25
60300963031	EB-04-201904	Water	04/25/19 18:05	04/26/19 06:25
60300963032	EB-05-201904	Water	04/25/19 18:05	04/26/19 06:25
60300963033	TB-04	Water	04/25/19 08:00	04/26/19 06:25
60300963034	TB-05	Water	04/25/19 08:00	04/26/19 06:25
60300963035	TB-06	Water	04/25/19 08:00	04/26/19 06:25
60300963036	TB-07	Water	04/25/19 08:00	04/26/19 06:25

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60300963001	**MW-95-201904**	EPA 5030B/8260	EMD, PGH	38	PASI-K
60300963002	**DUP-06-201904**	EPA 5030B/8260	EMD, PGH	38	PASI-K
60300963003	**ITMW-10-201904**	EPA 5030B/8260	PGH	38	PASI-K
60300963004	**DUP-07-201904**	EPA 5030B/8260	PGH	38	PASI-K
60300963005	**MW-58R-201904**	EPA 5030B/8260	PGH	38	PASI-K
60300963006	**MW-55R-201904**	EPA 5030B/8260	PGH	38	PASI-K
60300963007	**TMW-21-201904**	EPA 6010	JDE	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	JDS, WNM	2	PASI-K
		EPA 353.2	BLA	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60300963008	**TMW-11-201904**	EPA 6010	JDE	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	JDS, WNM	2	PASI-K
		EPA 353.2	BLA	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60300963009	**TMW-25-201904**	EPA 6010	JDE	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	JDS, WNM	2	PASI-K
		EPA 353.2	BLA	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60300963010	**TMW-34-201904**	EPA 6010	JDE	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	JDS	2	PASI-K
		EPA 353.2	BLA	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60300963011	**MW-185-201904**	EPA 6010	JDE	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	JDS	2	PASI-K
		EPA 353.2	BLA	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60300963012	**MW-91-201904**	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60300963013	**IW-77-201904**	EPA 5030B/8260	PGH	38	PASI-K
60300963014	**DUP-04-201904**	EPA 5030B/8260	EMD	38	PASI-K
60300963015	**ITMW-11-201904**	EPA 5030B/8260	EMD, PGH	38	PASI-K
60300963016	**DUP-05-201904**	EPA 5030B/8260	PGH	38	PASI-K
60300963017	**MW-194-201904**	EPA 6010	JDE	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	WNM	2	PASI-K
		EPA 353.2	BLA	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60300963018	**MW-38-201904**	EPA 5030B/8260	EMD, PGH	38	PASI-K
60300963019	**DUP-02-201904**	EPA 5030B/8260	PGH	38	PASI-K
60300963020	**MW-56R-201904**	EPA 5030B/8260	PGH	38	PASI-K
60300963021	**DUP-03-201904**	EPA 5030B/8260	PGH	38	PASI-K
60300963022	**MW-57R-201904**	EPA 5030B/8260	PGH	38	PASI-K
60300963023	**MW-86-201904**	EPA 5030B/8260	EMD, PGH	38	PASI-K
60300963024	**MW-189-201904**	EPA 5030B/8260	PGH	38	PASI-K
		SM 3500-Fe B#4	RAD	1	PASI-K
60300963025	**TMW-16-201904**	EPA 6010	JDE	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	JDS, WNM	2	PASI-K
		EPA 353.2	BLA	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60300963026	**TMW-32-201904**	EPA 6010	JDE	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	WNM	2	PASI-K
		EPA 353.2	BLA	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60300963027	**MW-61R-201904**	EPA 6010	JDE	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	JDS, WNM	2	PASI-K
		EPA 353.2	BLA	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60300963028	**TMW-22R-201904**	EPA 6010	JDE	1	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	JDS, WNM	2	PASI-K
		EPA 353.2	BLA	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60300963029	**TMW-26-201904**	EPA 6010	JDE	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	WNM	2	PASI-K
		EPA 353.2	BLA	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60300963030	**TMW-10-201904**	EPA 6010	JDE	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	JDS, WNM	2	PASI-K
		EPA 353.2	BLA	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60300963031	**EB-04-201904**	EPA 5030B/8260	PGH	38	PASI-K
60300963032	**EB-05-201904**	EPA 5030B/8260	PGH	38	PASI-K
60300963033	**TB-04**	EPA 5030B/8260	PGH	38	PASI-K
60300963034	**TB-05**	EPA 5030B/8260	PGH	38	PASI-K
60300963035	**TB-06**	EPA 5030B/8260	PGH	38	PASI-K
60300963036	**TB-07**	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Ramboll Environ_AR
Date: June 04, 2019

General Information:
12 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 582968

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60301541001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2392398)
  - Iron

R1: RPD value was outside control limits.

- MSD (Lab ID: 2392399)
  - Iron

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: June 04, 2019

General Information:
36 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

pH: Post-analysis pH measurement indicates insufficient VOA sample preservation.
- TMW-16-201904 (Lab ID: 60300963025)
- TMW-21-201904 (Lab ID: 60300963007)
- TMW-26-201904 (Lab ID: 60300963029)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 582450

B: Analyte was detected in the associated method blank.
- BLANK for HBN 582450 [MSV/9671 (Lab ID: 2390346)
  - 1,2-Dichloroethane

QC Batch: 582452

B: Analyte was detected in the associated method blank.
- BLANK for HBN 582452 [MSV/9672 (Lab ID: 2390351)
  - 1,2-Dichloroethane
  - Trichloroethene

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 582452

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
- LCS (Lab ID: 2390352)
  - Chloromethane

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: June 04, 2019

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 582449
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 582450
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 582452
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 582726
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 583067
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

Analyte Comments:

QC Batch: 583067

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- MW-86-201904 (Lab ID: 60300963023)
  - Preservation pH

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Method: **SM 3500-Fe B#4**
Description: Iron, Ferrous
Client: Ramboll Environ_AR
Date: June 04, 2019

General Information:
1 sample was analyzed for SM 3500-Fe B#4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated outside of the 15 minute EPA required holding time.
- MW-189-201904 (Lab ID: 60300963024)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Ramboll Environ_AR
Date: June 04, 2019

General Information:
12 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 583325

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60300948005,60300968002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2393604)
  - Chloride

Additional Comments:

Analyte Comments:

QC Batch: 583325

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2393604)
  - Chloride

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 unpres
Client: Ramboll Environ_AR
Date: June 04, 2019

General Information:
12 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 581268

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60300963030,60300977001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2385292)
  - Nitrogen, NO2 plus NO3
  - Nitrogen, Nitrate

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 581268

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 2385292)
  - Nitrogen, NO2 plus NO3

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Method: **SM 5310C**
Description: 5310C TOC
Client: Ramboll Environ_AR
Date: June 04, 2019

General Information:
12 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Method: **SM 5310C**
Description: 5310C Dissolved Organic Carbon
Client: Ramboll Environ_AR
Date: June 04, 2019

General Information:
12 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 583665

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60300963007

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2394933)
  - Dissolved Organic Carbon

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: TMW-21-201904 **Lab ID: 60300963007** Collected: 04/25/19 17:55 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**147000**	ug/L	50.0	14.0	1	05/07/19 12:00	05/08/19 14:52	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**443**	ug/L	10.0	3.3	1		05/03/19 19:07	67-64-1	
Benzene	**0.10J**	ug/L	1.0	0.079	1		05/03/19 19:07	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		05/03/19 19:07	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		05/03/19 19:07	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		05/03/19 19:07	74-83-9	
2-Butanone (MEK)	**932**	ug/L	10.0	0.70	1		05/03/19 19:07	78-93-3	
Carbon disulfide	**1.1J**	ug/L	5.0	0.16	1		05/03/19 19:07	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		05/03/19 19:07	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		05/03/19 19:07	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		05/03/19 19:07	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		05/03/19 19:07	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		05/03/19 19:07	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		05/03/19 19:07	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		05/03/19 19:07	75-34-3	
1,2-Dichloroethane	**0.19J**	ug/L	1.0	0.14	1		05/03/19 19:07	107-06-2	
1,1-Dichloroethene	**0.25J**	ug/L	1.0	0.22	1		05/03/19 19:07	75-35-4	
cis-1,2-Dichloroethene	**27.7**	ug/L	1.0	0.17	1		05/03/19 19:07	156-59-2	
trans-1,2-Dichloroethene	**0.25J**	ug/L	1.0	0.17	1		05/03/19 19:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		05/03/19 19:07	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		05/03/19 19:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		05/03/19 19:07	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		05/03/19 19:07	100-41-4	
2-Hexanone	**6.3J**	ug/L	10.0	1.0	1		05/03/19 19:07	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		05/03/19 19:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.1J**	ug/L	10.0	0.56	1		05/03/19 19:07	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		05/03/19 19:07	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		05/03/19 19:07	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		05/03/19 19:07	127-18-4	
Toluene	**0.34J**	ug/L	1.0	0.14	1		05/03/19 19:07	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		05/03/19 19:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		05/03/19 19:07	79-00-5	
Trichloroethene	**47.0**	ug/L	1.0	0.17	1		05/03/19 19:07	79-01-6	
Vinyl chloride	**5.9**	ug/L	1.0	0.11	1		05/03/19 19:07	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		05/03/19 19:07	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	96	%	80-120		1		05/03/19 19:07	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		05/03/19 19:07	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		05/03/19 19:07	2037-26-5	
Preservation pH	**4.0**		0.10	0.10	1		05/03/19 19:07		pH
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**214**	mg/L	50.0	11.0	50		05/07/19 16:34	16887-00-6	
Sulfate	**24.9**	mg/L	2.0	0.46	2		05/08/19 22:24	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: TMW-21-201904 **Lab ID: 60300963007** Collected: 04/25/19 17:55 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		04/26/19 13:37		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		04/26/19 13:37	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		04/26/19 13:37	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**3930**	mg/L	500	145	500		04/30/19 20:00	7440-44-0	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**3660**	mg/L	500	145	500		05/09/19 18:00		M1

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: TMW-25-201904 **Lab ID: 60300963009** Collected: 04/25/19 11:00 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**149000**	ug/L	50.0	14.0	1	05/07/19 12:00	05/08/19 14:56	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**78.6**	ug/L	10.0	3.3	1		05/03/19 19:35	67-64-1	
Benzene	**0.21J**	ug/L	1.0	0.079	1		05/03/19 19:35	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		05/03/19 19:35	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		05/03/19 19:35	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		05/03/19 19:35	74-83-9	
2-Butanone (MEK)	**295**	ug/L	10.0	0.70	1		05/03/19 19:35	78-93-3	
Carbon disulfide	**0.48J**	ug/L	5.0	0.16	1		05/03/19 19:35	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		05/03/19 19:35	56-23-5	
Chlorobenzene	**4.7**	ug/L	1.0	0.13	1		05/03/19 19:35	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		05/03/19 19:35	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		05/03/19 19:35	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		05/03/19 19:35	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		05/03/19 19:35	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		05/03/19 19:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		05/03/19 19:35	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		05/03/19 19:35	75-35-4	
cis-1,2-Dichloroethene	**47.7**	ug/L	1.0	0.17	1		05/03/19 19:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		05/03/19 19:35	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		05/03/19 19:35	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		05/03/19 19:35	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		05/03/19 19:35	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		05/03/19 19:35	100-41-4	
2-Hexanone	**4.6J**	ug/L	10.0	1.0	1		05/03/19 19:35	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		05/03/19 19:35	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		05/03/19 19:35	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		05/03/19 19:35	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		05/03/19 19:35	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		05/03/19 19:35	127-18-4	
Toluene	**0.19J**	ug/L	1.0	0.14	1		05/03/19 19:35	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		05/03/19 19:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		05/03/19 19:35	79-00-5	
Trichloroethene	**38.6**	ug/L	1.0	0.17	1		05/03/19 19:35	79-01-6	
Vinyl chloride	**0.39J**	ug/L	1.0	0.11	1		05/03/19 19:35	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		05/03/19 19:35	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		05/03/19 19:35	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	77-122		1		05/03/19 19:35	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		05/03/19 19:35	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		05/03/19 19:35		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**192**	mg/L	10.0	2.2	10		05/07/19 17:25	16887-00-6	
Sulfate	**23.3**	mg/L	2.0	0.46	2		05/08/19 22:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: TMW-25-201904 **Lab ID: 60300963009** Collected: 04/25/19 11:00 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.0**	mg/L	0.10	0.038	1		04/26/19 13:14		
Nitrogen, Nitrate	**1.0**	mg/L	0.10	0.067	1		04/26/19 13:14	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		04/26/19 13:14	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**14.2**	mg/L	1.0	0.29	1		05/02/19 15:24	7440-44-0	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**1420**	mg/L	100	29.0	100		05/09/19 18:51		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: TMW-34-201904 **Lab ID: 60300963010** Collected: 04/25/19 14:10 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**2360**	ug/L	50.0	14.0	1	05/07/19 12:00	05/08/19 14:58	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**10.8**	ug/L	10.0	3.3	1		05/03/19 21:29	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		05/03/19 21:29	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		05/03/19 21:29	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		05/03/19 21:29	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		05/03/19 21:29	74-83-9	
2-Butanone (MEK)	**1.7J**	ug/L	10.0	0.70	1		05/03/19 21:29	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		05/03/19 21:29	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		05/03/19 21:29	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		05/03/19 21:29	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		05/03/19 21:29	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		05/03/19 21:29	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		05/03/19 21:29	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		05/03/19 21:29	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		05/03/19 21:29	75-34-3	
1,2-Dichloroethane	**0.16J**	ug/L	1.0	0.14	1		05/03/19 21:29	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		05/03/19 21:29	75-35-4	
cis-1,2-Dichloroethene	**2.2**	ug/L	1.0	0.17	1		05/03/19 21:29	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		05/03/19 21:29	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		05/03/19 21:29	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		05/03/19 21:29	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		05/03/19 21:29	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		05/03/19 21:29	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		05/03/19 21:29	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		05/03/19 21:29	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		05/03/19 21:29	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		05/03/19 21:29	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		05/03/19 21:29	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		05/03/19 21:29	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		05/03/19 21:29	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		05/03/19 21:29	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		05/03/19 21:29	79-00-5	
Trichloroethene	**10.3**	ug/L	1.0	0.17	1		05/03/19 21:29	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		05/03/19 21:29	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		05/03/19 21:29	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	93	%	80-120		1		05/03/19 21:29	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	77-122		1		05/03/19 21:29	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		05/03/19 21:29	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		05/03/19 21:29		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**23.5**	mg/L	2.0	0.44	2		05/08/19 23:27	16887-00-6	
Sulfate	**9.4**	mg/L	1.0	0.23	1		05/08/19 23:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: TMW-34-201904 **Lab ID: 60300963010** Collected: 04/25/19 14:10 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.87**	mg/L	0.10	0.038	1		04/26/19 13:22		
Nitrogen, Nitrate	**0.87**	mg/L	0.10	0.067	1		04/26/19 13:22	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		04/26/19 13:22	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**3.0**	mg/L	1.0	0.29	1		04/30/19 21:04	7440-44-0	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**1.9**	mg/L	1.0	0.29	1		05/09/19 19:04		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: MW-185-201904 **Lab ID: 60300963011** Collected: 04/25/19 16:35 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**826**	ug/L	50.0	14.0	1	05/07/19 12:00	05/08/19 15:01	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**3.8J**	ug/L	10.0	3.3	1		05/03/19 21:43	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		05/03/19 21:43	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		05/03/19 21:43	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		05/03/19 21:43	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		05/03/19 21:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		05/03/19 21:43	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		05/03/19 21:43	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		05/03/19 21:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		05/03/19 21:43	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		05/03/19 21:43	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		05/03/19 21:43	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		05/03/19 21:43	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		05/03/19 21:43	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		05/03/19 21:43	75-34-3	
1,2-Dichloroethane	**0.16J**	ug/L	1.0	0.14	1		05/03/19 21:43	107-06-2	B
1,1-Dichloroethene	**0.28J**	ug/L	1.0	0.22	1		05/03/19 21:43	75-35-4	
cis-1,2-Dichloroethene	**3.4**	ug/L	1.0	0.17	1		05/03/19 21:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		05/03/19 21:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		05/03/19 21:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		05/03/19 21:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		05/03/19 21:43	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		05/03/19 21:43	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		05/03/19 21:43	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		05/03/19 21:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		05/03/19 21:43	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		05/03/19 21:43	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		05/03/19 21:43	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		05/03/19 21:43	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		05/03/19 21:43	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		05/03/19 21:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		05/03/19 21:43	79-00-5	
Trichloroethene	**17.0**	ug/L	1.0	0.17	1		05/03/19 21:43	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		05/03/19 21:43	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		05/03/19 21:43	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	80-120		1		05/03/19 21:43	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		05/03/19 21:43	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		05/03/19 21:43	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		05/03/19 21:43		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**21.7**	mg/L	2.0	0.44	2		05/08/19 23:59	16887-00-6	
Sulfate	**8.0**	mg/L	1.0	0.23	1		05/08/19 23:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: MW-185-201904 **Lab ID: 60300963011** Collected: 04/25/19 16:35 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**4.8**	mg/L	0.10	0.038	1		04/26/19 13:25		
Nitrogen, Nitrate	**4.8**	mg/L	0.10	0.067	1		04/26/19 13:25	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		04/26/19 13:25	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.69J**	mg/L	1.0	0.29	1		04/30/19 21:17	7440-44-0	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**0.54J**	mg/L	1.0	0.29	1		05/09/19 19:43		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: MW-91-201904 **Lab ID: 60300963012** Collected: 04/25/19 09:47 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**6.5J**	ug/L	10.0	3.3	1		05/04/19 00:33	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		05/04/19 00:33	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		05/04/19 00:33	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		05/04/19 00:33	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		05/04/19 00:33	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		05/04/19 00:33	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		05/04/19 00:33	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		05/04/19 00:33	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		05/04/19 00:33	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		05/04/19 00:33	75-00-3	
Chloroform	**0.14J**	ug/L	1.0	0.10	1		05/04/19 00:33	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		05/04/19 00:33	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		05/04/19 00:33	124-48-1	
1,1-Dichloroethane	**1.3**	ug/L	1.0	0.097	1		05/04/19 00:33	75-34-3	
1,2-Dichloroethane	**0.19J**	ug/L	1.0	0.14	1		05/04/19 00:33	107-06-2	B
1,1-Dichloroethene	**3.8**	ug/L	1.0	0.22	1		05/04/19 00:33	75-35-4	
cis-1,2-Dichloroethene	**29.9**	ug/L	1.0	0.17	1		05/04/19 00:33	156-59-2	
trans-1,2-Dichloroethene	**0.60J**	ug/L	1.0	0.17	1		05/04/19 00:33	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		05/04/19 00:33	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		05/04/19 00:33	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		05/04/19 00:33	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		05/04/19 00:33	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		05/04/19 00:33	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		05/04/19 00:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		05/04/19 00:33	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		05/04/19 00:33	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		05/04/19 00:33	79-34-5	
Tetrachloroethene	**4.0**	ug/L	1.0	0.22	1		05/04/19 00:33	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		05/04/19 00:33	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		05/04/19 00:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		05/04/19 00:33	79-00-5	
Trichloroethene	**454**	ug/L	10.0	1.7	10		05/06/19 12:36	79-01-6	
Vinyl chloride	**0.21J**	ug/L	1.0	0.11	1		05/04/19 00:33	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		05/04/19 00:33	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		05/04/19 00:33	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	77-122		1		05/04/19 00:33	17060-07-0	
Toluene-d8 (S)	98	%	80-120		1		05/04/19 00:33	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		05/04/19 00:33		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: TMW-16-201904 **Lab ID: 60300963025** Collected: 04/25/19 10:50 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**114000**	ug/L	50.0	14.0	1	05/07/19 12:00	05/08/19 15:05	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**402**	ug/L	10.0	3.3	1		05/04/19 01:15	67-64-1	
Benzene	**0.20J**	ug/L	1.0	0.079	1		05/04/19 01:15	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		05/04/19 01:15	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		05/04/19 01:15	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		05/04/19 01:15	74-83-9	
2-Butanone (MEK)	**7460**	ug/L	100	7.0	10		05/06/19 14:17	78-93-3	
Carbon disulfide	**0.85J**	ug/L	5.0	0.16	1		05/04/19 01:15	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		05/04/19 01:15	56-23-5	
Chlorobenzene	**0.24J**	ug/L	1.0	0.13	1		05/04/19 01:15	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		05/04/19 01:15	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		05/04/19 01:15	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		05/04/19 01:15	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		05/04/19 01:15	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		05/04/19 01:15	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		05/04/19 01:15	107-06-2	
1,1-Dichloroethene	**0.58J**	ug/L	1.0	0.22	1		05/04/19 01:15	75-35-4	
cis-1,2-Dichloroethene	**236**	ug/L	10.0	1.7	10		05/06/19 14:17	156-59-2	
trans-1,2-Dichloroethene	**2.3**	ug/L	1.0	0.17	1		05/04/19 01:15	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		05/04/19 01:15	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		05/04/19 01:15	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		05/04/19 01:15	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		05/04/19 01:15	100-41-4	
2-Hexanone	**6.8J**	ug/L	10.0	1.0	1		05/04/19 01:15	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		05/04/19 01:15	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		05/04/19 01:15	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		05/04/19 01:15	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		05/04/19 01:15	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		05/04/19 01:15	127-18-4	
Toluene	**0.15J**	ug/L	1.0	0.14	1		05/04/19 01:15	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		05/04/19 01:15	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		05/04/19 01:15	79-00-5	
Trichloroethene	**23.8**	ug/L	1.0	0.17	1		05/04/19 01:15	79-01-6	
Vinyl chloride	**1.4**	ug/L	1.0	0.11	1		05/04/19 01:15	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		05/04/19 01:15	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		05/04/19 01:15	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	77-122		1		05/04/19 01:15	17060-07-0	
Toluene-d8 (S)	95	%	80-120		1		05/04/19 01:15	2037-26-5	
Preservation pH	**4.0**		0.10	0.10	1		05/04/19 01:15		pH
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**496**	mg/L	50.0	11.0	50		05/07/19 15:14	16887-00-6	
Sulfate	**1.9**	mg/L	1.0	0.23	1		05/09/19 00:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: TMW-16-201904 **Lab ID: 60300963025** Collected: 04/25/19 10:50 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.042J**	mg/L	0.10	0.038	1		04/26/19 13:20		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		04/26/19 13:20	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		04/26/19 13:20	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**14.5**	mg/L	1.0	0.29	1		05/02/19 15:50	7440-44-0	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**1440**	mg/L	100	29.0	100		05/09/19 20:08		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: TMW-32-201904 **Lab ID: 60300963026** Collected: 04/25/19 13:30 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**17300**	ug/L	50.0	14.0	1	05/07/19 12:00	05/08/19 15:07	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**3.5J**	ug/L	10.0	3.3	1		05/03/19 22:25	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		05/03/19 22:25	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		05/03/19 22:25	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		05/03/19 22:25	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		05/03/19 22:25	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		05/03/19 22:25	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		05/03/19 22:25	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		05/03/19 22:25	56-23-5	
Chlorobenzene	**2.6**	ug/L	1.0	0.13	1		05/03/19 22:25	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		05/03/19 22:25	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		05/03/19 22:25	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		05/03/19 22:25	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		05/03/19 22:25	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		05/03/19 22:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		05/03/19 22:25	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		05/03/19 22:25	75-35-4	
cis-1,2-Dichloroethene	**36.4**	ug/L	1.0	0.17	1		05/03/19 22:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		05/03/19 22:25	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		05/03/19 22:25	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		05/03/19 22:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		05/03/19 22:25	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		05/03/19 22:25	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		05/03/19 22:25	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		05/03/19 22:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		05/03/19 22:25	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		05/03/19 22:25	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		05/03/19 22:25	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		05/03/19 22:25	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		05/03/19 22:25	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		05/03/19 22:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		05/03/19 22:25	79-00-5	
Trichloroethene	**12.5**	ug/L	1.0	0.17	1		05/03/19 22:25	79-01-6	
Vinyl chloride	**0.13J**	ug/L	1.0	0.11	1		05/03/19 22:25	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		05/03/19 22:25	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		05/03/19 22:25	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-122		1		05/03/19 22:25	17060-07-0	
Toluene-d8 (S)	96	%	80-120		1		05/03/19 22:25	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		05/03/19 22:25		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**129**	mg/L	10.0	2.2	10		05/07/19 15:30	16887-00-6	
Sulfate	**33.1**	mg/L	10.0	2.3	10		05/07/19 15:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: TMW-32-201904 **Lab ID: 60300963026** Collected: 04/25/19 13:30 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		04/26/19 13:21		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		04/26/19 13:21	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		04/26/19 13:21	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.57J**	mg/L	1.0	0.29	1		05/02/19 16:03	7440-44-0	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**0.73J**	mg/L	1.0	0.29	1		05/09/19 20:21		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: MW-61R-201904 **Lab ID: 60300963027** Collected: 04/25/19 15:40 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**9980**	ug/L	50.0	14.0	1	05/07/19 12:00	05/08/19 15:14	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		05/03/19 22:39	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		05/03/19 22:39	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		05/03/19 22:39	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		05/03/19 22:39	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		05/03/19 22:39	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		05/03/19 22:39	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		05/03/19 22:39	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		05/03/19 22:39	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		05/03/19 22:39	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		05/03/19 22:39	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		05/03/19 22:39	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		05/03/19 22:39	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		05/03/19 22:39	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		05/03/19 22:39	75-34-3	
1,2-Dichloroethane	**0.18J**	ug/L	1.0	0.14	1		05/03/19 22:39	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		05/03/19 22:39	75-35-4	
cis-1,2-Dichloroethene	**1.1**	ug/L	1.0	0.17	1		05/03/19 22:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		05/03/19 22:39	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		05/03/19 22:39	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		05/03/19 22:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		05/03/19 22:39	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		05/03/19 22:39	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		05/03/19 22:39	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		05/03/19 22:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		05/03/19 22:39	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		05/03/19 22:39	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		05/03/19 22:39	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		05/03/19 22:39	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		05/03/19 22:39	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		05/03/19 22:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		05/03/19 22:39	79-00-5	
Trichloroethene	**14.9**	ug/L	1.0	0.17	1		05/03/19 22:39	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		05/03/19 22:39	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		05/03/19 22:39	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		05/03/19 22:39	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		05/03/19 22:39	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		05/03/19 22:39	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		05/03/19 22:39		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**129**	mg/L	10.0	2.2	10		05/07/19 16:33	16887-00-6	
Sulfate	**12.1**	mg/L	1.0	0.23	1		05/09/19 01:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: MW-61R-201904 **Lab ID: 60300963027** Collected: 04/25/19 15:40 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		04/26/19 13:24		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		04/26/19 13:24	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		04/26/19 13:24	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.47J**	mg/L	1.0	0.29	1		05/02/19 16:54	7440-44-0	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**0.67J**	mg/L	1.0	0.29	1		05/09/19 20:35		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: TMW-22R-201904 **Lab ID: 60300963028** Collected: 04/25/19 17:45 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**14800**	ug/L	50.0	14.0	1	05/07/19 12:00	05/08/19 15:16	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**12.8**	ug/L	10.0	3.3	1		05/04/19 00:18	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		05/04/19 00:18	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		05/04/19 00:18	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		05/04/19 00:18	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		05/04/19 00:18	74-83-9	
2-Butanone (MEK)	**4.0J**	ug/L	10.0	0.70	1		05/04/19 00:18	78-93-3	
Carbon disulfide	**0.31J**	ug/L	5.0	0.16	1		05/04/19 00:18	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		05/04/19 00:18	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		05/04/19 00:18	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		05/04/19 00:18	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		05/04/19 00:18	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		05/04/19 00:18	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		05/04/19 00:18	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		05/04/19 00:18	75-34-3	
1,2-Dichloroethane	**0.16J**	ug/L	1.0	0.14	1		05/04/19 00:18	107-06-2	B
1,1-Dichloroethene	**1.6**	ug/L	1.0	0.22	1		05/04/19 00:18	75-35-4	
cis-1,2-Dichloroethene	**184**	ug/L	5.0	0.85	5		05/06/19 14:32	156-59-2	
trans-1,2-Dichloroethene	**1.6**	ug/L	1.0	0.17	1		05/04/19 00:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		05/04/19 00:18	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		05/04/19 00:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		05/04/19 00:18	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		05/04/19 00:18	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		05/04/19 00:18	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		05/04/19 00:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		05/04/19 00:18	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		05/04/19 00:18	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		05/04/19 00:18	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		05/04/19 00:18	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		05/04/19 00:18	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		05/04/19 00:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		05/04/19 00:18	79-00-5	
Trichloroethene	**202**	ug/L	5.0	0.85	5		05/06/19 14:32	79-01-6	
Vinyl chloride	**8.3**	ug/L	1.0	0.11	1		05/04/19 00:18	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		05/04/19 00:18	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		05/04/19 00:18	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	77-122		1		05/04/19 00:18	17060-07-0	
Toluene-d8 (S)	97	%	80-120		1		05/04/19 00:18	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		05/04/19 00:18		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**200**	mg/L	50.0	11.0	50		05/07/19 17:20	16887-00-6	
Sulfate	**2.8**	mg/L	1.0	0.23	1		05/09/19 01:18	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: TMW-22R-201904 **Lab ID: 60300963028** Collected: 04/25/19 17:45 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		04/26/19 13:28		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		04/26/19 13:28	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		04/26/19 13:28	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1.5**	mg/L	1.0	0.29	1		05/02/19 17:07	7440-44-0	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**2.0**	mg/L	1.0	0.29	1		05/09/19 20:47		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: TMW-10-201904 **Lab ID: 60300963030** Collected: 04/25/19 17:30 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**29900**	ug/L	50.0	14.0	1	05/07/19 12:00	05/08/19 15:21	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**10.8**	ug/L	10.0	3.3	1		05/04/19 05:03	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		05/04/19 05:03	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		05/04/19 05:03	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		05/04/19 05:03	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		05/04/19 05:03	74-83-9	
2-Butanone (MEK)	**2.7J**	ug/L	10.0	0.70	1		05/04/19 05:03	78-93-3	
Carbon disulfide	**1.0J**	ug/L	5.0	0.16	1		05/04/19 05:03	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		05/04/19 05:03	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		05/04/19 05:03	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		05/04/19 05:03	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		05/04/19 05:03	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		05/04/19 05:03	74-87-3	L1
Dibromochloromethane	ND	ug/L	1.0	0.15	1		05/04/19 05:03	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		05/04/19 05:03	75-34-3	
1,2-Dichloroethane	**0.16J**	ug/L	1.0	0.14	1		05/04/19 05:03	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		05/04/19 05:03	75-35-4	
cis-1,2-Dichloroethene	**2.4**	ug/L	1.0	0.17	1		05/04/19 05:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		05/04/19 05:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		05/04/19 05:03	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		05/04/19 05:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		05/04/19 05:03	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		05/04/19 05:03	100-41-4	
2-Hexanone	**1.8J**	ug/L	10.0	1.0	1		05/04/19 05:03	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		05/04/19 05:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	**0.77J**	ug/L	10.0	0.56	1		05/04/19 05:03	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		05/04/19 05:03	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		05/04/19 05:03	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		05/04/19 05:03	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		05/04/19 05:03	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		05/04/19 05:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		05/04/19 05:03	79-00-5	
Trichloroethene	**11.5**	ug/L	1.0	0.17	1		05/04/19 05:03	79-01-6	
Vinyl chloride	**3.7**	ug/L	1.0	0.11	1		05/04/19 05:03	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		05/04/19 05:03	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		05/04/19 05:03	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	77-122		1		05/04/19 05:03	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		05/04/19 05:03	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		05/04/19 05:03		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**201**	mg/L	50.0	11.0	50		05/07/19 18:24	16887-00-6	
Sulfate	**0.56J**	mg/L	1.0	0.23	1		05/09/19 01:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Sample: TMW-10-201904 **Lab ID: 60300963030** Collected: 04/25/19 17:30 Received: 04/26/19 06:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		04/26/19 13:26		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		04/26/19 13:26	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		04/26/19 13:26	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**35.7**	mg/L	20.0	5.8	20		05/09/19 16:17	7440-44-0	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**24.8**	mg/L	20.0	5.8	20		05/09/19 21:13		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

QC Batch: 582968 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60300963007, 60300963008, 60300963009, 60300963010, 60300963011, 60300963017, 60300963025, 60300963026, 60300963027, 60300963028, 60300963029, 60300963030

METHOD BLANK: 2392396 Matrix: Water
Associated Lab Samples: 60300963007, 60300963008, 60300963009, 60300963010, 60300963011, 60300963017, 60300963025, 60300963026, 60300963027, 60300963028, 60300963029, 60300963030

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	14.0	05/08/19 14:48	

LABORATORY CONTROL SAMPLE: 2392397

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	9280	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2392398 2392399

Parameter	Units	60301541001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	296	10000	10000	7300	9450	70	92	75-125	26	20	M1,R1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

QC Batch: 582449 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60300963001, 60300963002, 60300963003, 60300963004, 60300963005, 60300963006, 60300963007, 60300963008, 60300963009

METHOD BLANK: 2390342 Matrix: Water
Associated Lab Samples: 60300963001, 60300963002, 60300963003, 60300963004, 60300963005, 60300963006, 60300963007, 60300963008, 60300963009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	05/03/19 15:06	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	05/03/19 15:06	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	05/03/19 15:06	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	05/03/19 15:06	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	05/03/19 15:06	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	05/03/19 15:06	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	05/03/19 15:06	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	05/03/19 15:06	
2-Hexanone	ug/L	ND	10.0	1.0	05/03/19 15:06	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	05/03/19 15:06	
Acetone	ug/L	ND	10.0	3.3	05/03/19 15:06	
Benzene	ug/L	ND	1.0	0.079	05/03/19 15:06	
Bromodichloromethane	ug/L	ND	1.0	0.17	05/03/19 15:06	
Bromoform	ug/L	ND	1.0	0.21	05/03/19 15:06	
Bromomethane	ug/L	ND	5.0	0.32	05/03/19 15:06	
Carbon disulfide	ug/L	ND	5.0	0.16	05/03/19 15:06	
Carbon tetrachloride	ug/L	ND	1.0	0.084	05/03/19 15:06	
Chlorobenzene	ug/L	ND	1.0	0.13	05/03/19 15:06	
Chloroethane	ug/L	ND	1.0	0.42	05/03/19 15:06	
Chloroform	ug/L	ND	1.0	0.10	05/03/19 15:06	
Chloromethane	ug/L	ND	1.0	0.16	05/03/19 15:06	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	05/03/19 15:06	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	05/03/19 15:06	
Dibromochloromethane	ug/L	ND	1.0	0.15	05/03/19 15:06	
Ethylbenzene	ug/L	ND	1.0	0.12	05/03/19 15:06	
Methylene Chloride	ug/L	ND	1.0	0.27	05/03/19 15:06	
Styrene	ug/L	ND	1.0	0.15	05/03/19 15:06	
Tetrachloroethene	ug/L	ND	1.0	0.22	05/03/19 15:06	
Toluene	ug/L	ND	1.0	0.14	05/03/19 15:06	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	05/03/19 15:06	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	05/03/19 15:06	
Trichloroethene	ug/L	ND	1.0	0.17	05/03/19 15:06	
Vinyl chloride	ug/L	ND	1.0	0.11	05/03/19 15:06	
Xylene (Total)	ug/L	ND	3.0	0.34	05/03/19 15:06	
1,2-Dichloroethane-d4 (S)	%	109	77-122		05/03/19 15:06	
4-Bromofluorobenzene (S)	%	100	80-120		05/03/19 15:06	
Toluene-d8 (S)	%	99	80-120		05/03/19 15:06	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

LABORATORY CONTROL SAMPLE: 2390343

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.3	101	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	18.3	91	71-122	
1,1,2-Trichloroethane	ug/L	20	19.4	97	76-123	
1,1-Dichloroethane	ug/L	20	18.4	92	78-117	
1,1-Dichloroethene	ug/L	20	17.5	87	74-122	
1,2-Dichloroethane	ug/L	20	19.0	95	73-120	
1,2-Dichloropropane	ug/L	20	19.5	98	78-115	
2-Butanone (MEK)	ug/L	100	98.1	98	54-133	
2-Hexanone	ug/L	100	103	103	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	101	101	62-130	
Acetone	ug/L	100	72.6	73	54-130	
Benzene	ug/L	20	19.0	95	80-120	
Bromodichloromethane	ug/L	20	18.6	93	78-121	
Bromoform	ug/L	20	18.0	90	62-137	
Bromomethane	ug/L	20	15.8	79	41-145	
Carbon disulfide	ug/L	20	17.8	89	64-119	
Carbon tetrachloride	ug/L	20	19.6	98	77-122	
Chlorobenzene	ug/L	20	20.0	100	80-123	
Chloroethane	ug/L	20	16.3	81	60-146	
Chloroform	ug/L	20	19.0	95	81-116	
Chloromethane	ug/L	20	22.7	113	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.3	97	80-120	
cis-1,3-Dichloropropene	ug/L	20	18.9	95	78-118	
Dibromochloromethane	ug/L	20	19.1	96	73-128	
Ethylbenzene	ug/L	20	18.7	94	80-120	
Methylene Chloride	ug/L	20	16.9	84	80-126	
Styrene	ug/L	20	18.8	94	85-120	
Tetrachloroethene	ug/L	20	19.1	96	77-121	
Toluene	ug/L	20	18.7	93	80-120	
trans-1,2-Dichloroethene	ug/L	20	16.8	84	80-120	
trans-1,3-Dichloropropene	ug/L	20	18.7	94	76-123	
Trichloroethene	ug/L	20	22.1	111	80-121	
Vinyl chloride	ug/L	20	16.9	85	46-162	
Xylene (Total)	ug/L	60	56.3	94	80-120	
1,2-Dichloroethane-d4 (S)	%			102	77-122	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			101	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

QC Batch: 582450 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60300963010, 60300963011, 60300963012, 60300963013, 60300963015, 60300963016, 60300963017, 60300963018, 60300963019, 60300963020, 60300963021, 60300963022, 60300963023, 60300963024, 60300963025, 60300963026, 60300963027, 60300963028, 60300963029

METHOD BLANK: 2390346 Matrix: Water
Associated Lab Samples: 60300963010, 60300963011, 60300963012, 60300963013, 60300963015, 60300963016, 60300963017, 60300963018, 60300963019, 60300963020, 60300963021, 60300963022, 60300963023, 60300963024, 60300963025, 60300963026, 60300963027, 60300963028, 60300963029

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	05/03/19 21:14	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	05/03/19 21:14	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	05/03/19 21:14	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	05/03/19 21:14	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	05/03/19 21:14	
1,2-Dichloroethane	ug/L	0.14J	1.0	0.14	05/03/19 21:14	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	05/03/19 21:14	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	05/03/19 21:14	
2-Hexanone	ug/L	ND	10.0	1.0	05/03/19 21:14	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	05/03/19 21:14	
Acetone	ug/L	ND	10.0	3.3	05/03/19 21:14	
Benzene	ug/L	ND	1.0	0.079	05/03/19 21:14	
Bromodichloromethane	ug/L	ND	1.0	0.17	05/03/19 21:14	
Bromoform	ug/L	ND	1.0	0.21	05/03/19 21:14	
Bromomethane	ug/L	ND	5.0	0.32	05/03/19 21:14	
Carbon disulfide	ug/L	ND	5.0	0.16	05/03/19 21:14	
Carbon tetrachloride	ug/L	ND	1.0	0.084	05/03/19 21:14	
Chlorobenzene	ug/L	ND	1.0	0.13	05/03/19 21:14	
Chloroethane	ug/L	ND	1.0	0.42	05/03/19 21:14	
Chloroform	ug/L	ND	1.0	0.10	05/03/19 21:14	
Chloromethane	ug/L	ND	1.0	0.16	05/03/19 21:14	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	05/03/19 21:14	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	05/03/19 21:14	
Dibromochloromethane	ug/L	ND	1.0	0.15	05/03/19 21:14	
Ethylbenzene	ug/L	ND	1.0	0.12	05/03/19 21:14	
Methylene Chloride	ug/L	ND	1.0	0.27	05/03/19 21:14	
Styrene	ug/L	ND	1.0	0.15	05/03/19 21:14	
Tetrachloroethene	ug/L	ND	1.0	0.22	05/03/19 21:14	
Toluene	ug/L	ND	1.0	0.14	05/03/19 21:14	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	05/03/19 21:14	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	05/03/19 21:14	
Trichloroethene	ug/L	0.55J	1.0	0.17	05/03/19 21:14	
Vinyl chloride	ug/L	ND	1.0	0.11	05/03/19 21:14	
Xylene (Total)	ug/L	ND	3.0	0.34	05/03/19 21:14	
1,2-Dichloroethane-d4 (S)	%	102	77-122		05/03/19 21:14	
4-Bromofluorobenzene (S)	%	100	80-120		05/03/19 21:14	
Toluene-d8 (S)	%	98	80-120		05/03/19 21:14	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

LABORATORY CONTROL SAMPLE: 2390347

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.5	97	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	18.1	91	71-122	
1,1,2-Trichloroethane	ug/L	20	18.6	93	76-123	
1,1-Dichloroethane	ug/L	20	18.6	93	78-117	
1,1-Dichloroethene	ug/L	20	17.4	87	74-122	
1,2-Dichloroethane	ug/L	20	18.3	91	73-120	
1,2-Dichloropropane	ug/L	20	19.3	96	78-115	
2-Butanone (MEK)	ug/L	100	96.7	97	54-133	
2-Hexanone	ug/L	100	105	105	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	102	102	62-130	
Acetone	ug/L	100	82.4	82	54-130	
Benzene	ug/L	20	19.3	96	80-120	
Bromodichloromethane	ug/L	20	18.7	93	78-121	
Bromoform	ug/L	20	16.9	85	62-137	
Bromomethane	ug/L	20	18.1	91	41-145	
Carbon disulfide	ug/L	20	19.0	95	64-119	
Carbon tetrachloride	ug/L	20	19.0	95	77-122	
Chlorobenzene	ug/L	20	19.0	95	80-123	
Chloroethane	ug/L	20	16.6	83	60-146	
Chloroform	ug/L	20	19.1	95	81-116	
Chloromethane	ug/L	20	21.7	109	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.5	98	80-120	
cis-1,3-Dichloropropene	ug/L	20	19.4	97	78-118	
Dibromochloromethane	ug/L	20	18.4	92	73-128	
Ethylbenzene	ug/L	20	18.0	90	80-120	
Methylene Chloride	ug/L	20	17.4	87	80-126	
Styrene	ug/L	20	18.5	93	85-120	
Tetrachloroethene	ug/L	20	18.5	93	77-121	
Toluene	ug/L	20	18.1	90	80-120	
trans-1,2-Dichloroethene	ug/L	20	16.8	84	80-120	
trans-1,3-Dichloropropene	ug/L	20	17.6	88	76-123	
Trichloroethene	ug/L	20	22.1	111	80-121	
Vinyl chloride	ug/L	20	16.1	80	46-162	
Xylene (Total)	ug/L	60	55.6	93	80-120	
1,2-Dichloroethane-d4 (S)	%			99	77-122	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			97	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

QC Batch: 582452 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60300963030, 60300963031, 60300963032, 60300963033, 60300963034, 60300963035, 60300963036

METHOD BLANK: 2390351 Matrix: Water
Associated Lab Samples: 60300963030, 60300963031, 60300963032, 60300963033, 60300963034, 60300963035, 60300963036

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	05/04/19 02:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	05/04/19 02:55	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	05/04/19 02:55	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	05/04/19 02:55	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	05/04/19 02:55	
1,2-Dichloroethane	ug/L	0.15J	1.0	0.14	05/04/19 02:55	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	05/04/19 02:55	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	05/04/19 02:55	
2-Hexanone	ug/L	ND	10.0	1.0	05/04/19 02:55	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	05/04/19 02:55	
Acetone	ug/L	ND	10.0	3.3	05/04/19 02:55	
Benzene	ug/L	ND	1.0	0.079	05/04/19 02:55	
Bromodichloromethane	ug/L	ND	1.0	0.17	05/04/19 02:55	
Bromoform	ug/L	ND	1.0	0.21	05/04/19 02:55	
Bromomethane	ug/L	ND	5.0	0.32	05/04/19 02:55	
Carbon disulfide	ug/L	ND	5.0	0.16	05/04/19 02:55	
Carbon tetrachloride	ug/L	ND	1.0	0.084	05/04/19 02:55	
Chlorobenzene	ug/L	ND	1.0	0.13	05/04/19 02:55	
Chloroethane	ug/L	ND	1.0	0.42	05/04/19 02:55	
Chloroform	ug/L	ND	1.0	0.10	05/04/19 02:55	
Chloromethane	ug/L	ND	1.0	0.16	05/04/19 02:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	05/04/19 02:55	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	05/04/19 02:55	
Dibromochloromethane	ug/L	ND	1.0	0.15	05/04/19 02:55	
Ethylbenzene	ug/L	ND	1.0	0.12	05/04/19 02:55	
Methylene Chloride	ug/L	ND	1.0	0.27	05/04/19 02:55	
Styrene	ug/L	ND	1.0	0.15	05/04/19 02:55	
Tetrachloroethene	ug/L	ND	1.0	0.22	05/04/19 02:55	
Toluene	ug/L	ND	1.0	0.14	05/04/19 02:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	05/04/19 02:55	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	05/04/19 02:55	
Trichloroethene	ug/L	0.28J	1.0	0.17	05/04/19 02:55	
Vinyl chloride	ug/L	ND	1.0	0.11	05/04/19 02:55	
Xylene (Total)	ug/L	ND	3.0	0.34	05/04/19 02:55	
1,2-Dichloroethane-d4 (S)	%	103	77-122		05/04/19 02:55	
4-Bromofluorobenzene (S)	%	103	80-120		05/04/19 02:55	
Toluene-d8 (S)	%	99	80-120		05/04/19 02:55	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

LABORATORY CONTROL SAMPLE: 2390352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.0	100	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	17.4	87	71-122	
1,1,2-Trichloroethane	ug/L	20	18.9	94	76-123	
1,1-Dichloroethane	ug/L	20	19.7	98	78-117	
1,1-Dichloroethene	ug/L	20	21.3	107	74-122	
1,2-Dichloroethane	ug/L	20	20.6	103	73-120	
1,2-Dichloropropane	ug/L	20	19.6	98	78-115	
2-Butanone (MEK)	ug/L	100	108	108	54-133	
2-Hexanone	ug/L	100	111	111	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	112	112	62-130	
Acetone	ug/L	100	106	106	54-130	
Benzene	ug/L	20	19.0	95	80-120	
Bromodichloromethane	ug/L	20	19.4	97	78-121	
Bromoform	ug/L	20	18.8	94	62-137	
Bromomethane	ug/L	20	20.2	101	41-145	
Carbon disulfide	ug/L	20	22.9	115	64-119	
Carbon tetrachloride	ug/L	20	20.5	102	77-122	
Chlorobenzene	ug/L	20	19.4	97	80-123	
Chloroethane	ug/L	20	19.6	98	60-146	
Chloroform	ug/L	20	19.9	99	81-116	
Chloromethane	ug/L	20	31.6	158	29-154	L1
cis-1,2-Dichloroethene	ug/L	20	19.7	99	80-120	
cis-1,3-Dichloropropene	ug/L	20	19.7	99	78-118	
Dibromochloromethane	ug/L	20	19.5	98	73-128	
Ethylbenzene	ug/L	20	17.9	90	80-120	
Methylene Chloride	ug/L	20	22.1	111	80-126	
Styrene	ug/L	20	18.8	94	85-120	
Tetrachloroethene	ug/L	20	18.3	91	77-121	
Toluene	ug/L	20	17.6	88	80-120	
trans-1,2-Dichloroethene	ug/L	20	22.2	111	80-120	
trans-1,3-Dichloropropene	ug/L	20	18.0	90	76-123	
Trichloroethene	ug/L	20	22.5	113	80-121	
Vinyl chloride	ug/L	20	19.6	98	46-162	
Xylene (Total)	ug/L	60	54.1	90	80-120	
1,2-Dichloroethane-d4 (S)	%			111	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			98	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

QC Batch: 582726 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60300963002, 60300963005, 60300963012, 60300963013, 60300963016, 60300963019, 60300963020, 60300963021, 60300963022, 60300963025, 60300963028

METHOD BLANK: 2391736 Matrix: Water
Associated Lab Samples: 60300963002, 60300963005, 60300963012, 60300963013, 60300963016, 60300963019, 60300963020, 60300963021, 60300963022, 60300963025, 60300963028

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2-Butanone (MEK)	ug/L	1.2J	10.0	0.70	05/06/19 09:44	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	05/06/19 09:44	
Trichloroethene	ug/L	ND	1.0	0.17	05/06/19 09:44	
1,2-Dichloroethane-d4 (S)	%	106	77-122		05/06/19 09:44	
4-Bromofluorobenzene (S)	%	102	80-120		05/06/19 09:44	
Toluene-d8 (S)	%	97	80-120		05/06/19 09:44	

LABORATORY CONTROL SAMPLE: 2391737

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Butanone (MEK)	ug/L	100	129	129	54-133	
cis-1,2-Dichloroethene	ug/L	20	20.5	103	80-120	
Trichloroethene	ug/L	20	21.0	105	80-121	
1,2-Dichloroethane-d4 (S)	%			108	77-122	
4-Bromofluorobenzene (S)	%			103	80-120	
Toluene-d8 (S)	%			96	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

QC Batch: 583067 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60300963001, 60300963002, 60300963014, 60300963015, 60300963018, 60300963023

METHOD BLANK: 2392775 Matrix: Water
Associated Lab Samples: 60300963001, 60300963002, 60300963014, 60300963015, 60300963018, 60300963023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	05/07/19 12:45	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.23	05/07/19 12:45	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	05/07/19 12:45	
1,1-Dichloroethane	ug/L	ND	1.0	0.12	05/07/19 12:45	
1,1-Dichloroethene	ug/L	ND	1.0	0.14	05/07/19 12:45	
1,2-Dichloroethane	ug/L	ND	1.0	0.33	05/07/19 12:45	
1,2-Dichloropropane	ug/L	ND	1.0	0.14	05/07/19 12:45	
2-Butanone (MEK)	ug/L	1.9J	10.0	1.8	05/07/19 12:45	
2-Hexanone	ug/L	ND	10.0	1.6	05/07/19 12:45	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	1.3	05/07/19 12:45	
Acetone	ug/L	ND	10.0	7.4	05/07/19 12:45	
Benzene	ug/L	ND	1.0	0.13	05/07/19 12:45	
Bromodichloromethane	ug/L	ND	1.0	0.14	05/07/19 12:45	
Bromoform	ug/L	ND	1.0	0.28	05/07/19 12:45	
Bromomethane	ug/L	ND	5.0	2.8	05/07/19 12:45	
Carbon disulfide	ug/L	ND	5.0	0.086	05/07/19 12:45	
Carbon tetrachloride	ug/L	ND	1.0	0.070	05/07/19 12:45	
Chlorobenzene	ug/L	ND	1.0	0.17	05/07/19 12:45	
Chloroethane	ug/L	ND	1.0	0.83	05/07/19 12:45	
Chloroform	ug/L	ND	1.0	0.25	05/07/19 12:45	
Chloromethane	ug/L	ND	1.0	0.51	05/07/19 12:45	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.18	05/07/19 12:45	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.18	05/07/19 12:45	
Dibromochloromethane	ug/L	ND	1.0	0.15	05/07/19 12:45	
Ethylbenzene	ug/L	ND	1.0	0.20	05/07/19 12:45	
Methylene Chloride	ug/L	ND	1.0	0.35	05/07/19 12:45	
Styrene	ug/L	ND	1.0	0.19	05/07/19 12:45	
Tetrachloroethene	ug/L	ND	1.0	0.14	05/07/19 12:45	
Toluene	ug/L	ND	1.0	0.17	05/07/19 12:45	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.082	05/07/19 12:45	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.18	05/07/19 12:45	
Trichloroethene	ug/L	ND	1.0	0.097	05/07/19 12:45	
Vinyl chloride	ug/L	ND	1.0	0.17	05/07/19 12:45	
Xylene (Total)	ug/L	ND	3.0	0.42	05/07/19 12:45	
1,2-Dichloroethane-d4 (S)	%	99	77-122		05/07/19 12:45	
4-Bromofluorobenzene (S)	%	100	80-120		05/07/19 12:45	
Toluene-d8 (S)	%	99	80-120		05/07/19 12:45	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

LABORATORY CONTROL SAMPLE: 2392776

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.4	97	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	18.4	92	71-122	
1,1,2-Trichloroethane	ug/L	20	18.7	94	76-123	
1,1-Dichloroethane	ug/L	20	19.7	98	78-117	
1,1-Dichloroethene	ug/L	20	18.9	94	74-122	
1,2-Dichloroethane	ug/L	20	18.5	93	73-120	
1,2-Dichloropropane	ug/L	20	19.2	96	78-115	
2-Butanone (MEK)	ug/L	100	105	105	54-133	
2-Hexanone	ug/L	100	95.5	95	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	97.8	98	62-130	
Acetone	ug/L	100	103	103	54-130	
Benzene	ug/L	20	19.5	98	80-120	
Bromodichloromethane	ug/L	20	18.9	95	78-121	
Bromoform	ug/L	20	18.1	90	62-137	
Bromomethane	ug/L	20	17.3	86	41-145	
Carbon disulfide	ug/L	20	20.0	100	64-119	
Carbon tetrachloride	ug/L	20	18.4	92	77-122	
Chlorobenzene	ug/L	20	19.0	95	80-123	
Chloroethane	ug/L	20	19.6	98	60-146	
Chloroform	ug/L	20	19.6	98	81-116	
Chloromethane	ug/L	20	20.3	101	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.5	98	80-120	
cis-1,3-Dichloropropene	ug/L	20	19.8	99	78-118	
Dibromochloromethane	ug/L	20	19.3	96	73-128	
Ethylbenzene	ug/L	20	18.9	94	80-120	
Methylene Chloride	ug/L	20	20.6	103	80-126	
Styrene	ug/L	20	19.3	97	85-120	
Tetrachloroethene	ug/L	20	18.6	93	77-121	
Toluene	ug/L	20	18.9	95	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.2	96	80-120	
trans-1,3-Dichloropropene	ug/L	20	18.2	91	76-123	
Trichloroethene	ug/L	20	20.6	103	80-121	
Vinyl chloride	ug/L	20	18.1	91	46-162	
Xylene (Total)	ug/L	60	57.6	96	80-120	
1,2-Dichloroethane-d4 (S)	%			100	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			98	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

QC Batch: 581507 Analysis Method: SM 3500-Fe B#4
QC Batch Method: SM 3500-Fe B#4 Analysis Description: Iron, Ferrous
Associated Lab Samples: 60300963024

METHOD BLANK: 2386475 Matrix: Water
Associated Lab Samples: 60300963024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	ND	0.20	0.034	04/29/19 14:06	H6

LABORATORY CONTROL SAMPLE: 2386476

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	1.9	94	90-110	H6

SAMPLE DUPLICATE: 2386477

Parameter	Units	60300954002 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	ND	ND		20	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

QC Batch: 583003 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60300963007, 60300963008, 60300963009

METHOD BLANK: 2392509 Matrix: Water
Associated Lab Samples: 60300963007, 60300963008, 60300963009, 60300963010, 60300963011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	05/07/19 09:50	

LABORATORY CONTROL SAMPLE: 2392510

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	

MATRIX SPIKE SAMPLE: 2392511

Parameter	Units	60301599006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	104	100	199	95	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

QC Batch: 583027 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60300963017, 60300963025, 60300963026, 60300963027, 60300963028, 60300963029, 60300963030

METHOD BLANK: 2392626 Matrix: Water
Associated Lab Samples: 60300963017, 60300963025, 60300963026, 60300963027, 60300963028, 60300963029, 60300963030

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	05/07/19 09:46	
Sulfate	mg/L	ND	1.0	0.23	05/07/19 09:46	

LABORATORY CONTROL SAMPLE: 2392627

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	98	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2392628 2392629

Parameter	Units	20102693013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	4.8	5	5	10.0	10.0	104	103	80-120	0	15	
Sulfate	mg/L	ND	5	5	5.2	5.2	98	98	80-120	1	15	

MATRIX SPIKE SAMPLE: 2392630

Parameter	Units	20102693012 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	7.1	5	12.2	104	80-120	
Sulfate	mg/L	9.0	5	14.0	101	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

QC Batch: 583325 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60300963007, 60300963008, 60300963009, 60300963010, 60300963011, 60300963025, 60300963027, 60300963028, 60300963030

METHOD BLANK: 2393600 Matrix: Water
Associated Lab Samples: 60300963007, 60300963008, 60300963009, 60300963010, 60300963011, 60300963025, 60300963027, 60300963028, 60300963030

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	05/08/19 17:22	
Sulfate	mg/L	ND	1.0	0.23	05/08/19 17:22	

LABORATORY CONTROL SAMPLE: 2393601

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	99	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2393602 2393603

Parameter	Units	60300968002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	350	250	250	616	617	106	107	80-120	0	15	
Sulfate	mg/L	212	250	250	465	463	101	100	80-120	1	15	

MATRIX SPIKE SAMPLE: 2393604

Parameter	Units	60300948005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	58.4	10	71.5	132	80-120	E,M1
Sulfate	mg/L	25.1	10	36.1	110	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

QC Batch: 581268 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 60300963007, 60300963008, 60300963009, 60300963010, 60300963011, 60300963017, 60300963025, 60300963026, 60300963027, 60300963028, 60300963029, 60300963030

METHOD BLANK: 2385290 Matrix: Water
Associated Lab Samples: 60300963007, 60300963008, 60300963009, 60300963010, 60300963011, 60300963017, 60300963025, 60300963026, 60300963027, 60300963028, 60300963029, 60300963030

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	0.067	04/26/19 13:10	
Nitrogen, Nitrite	mg/L	ND	0.10	0.067	04/26/19 13:10	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	04/26/19 13:10	

LABORATORY CONTROL SAMPLE: 2385291

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	0.94	94	70-130	
Nitrogen, Nitrite	mg/L	1	1.0	102	90-110	
Nitrogen, NO2 plus NO3	mg/L	2	2.0	98	90-110	

MATRIX SPIKE SAMPLE: 2385292

Parameter	Units	60300977001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	68.2	20	80.6	62	70-130	M1
Nitrogen, Nitrite	mg/L	ND	20	21.1	106	90-110	
Nitrogen, NO2 plus NO3	mg/L	68.2	40	102	84	90-110	E,M1

MATRIX SPIKE SAMPLE: 2385294

Parameter	Units	60300963030 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	1	0.96	96	70-130	
Nitrogen, Nitrite	mg/L	ND	1	1.0	104	90-110	
Nitrogen, NO2 plus NO3	mg/L	ND	2	2.0	100	90-110	

SAMPLE DUPLICATE: 2385293

Parameter	Units	60300963009 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	1.0	0.97	3	20	
Nitrogen, Nitrite	mg/L	ND	ND		20	
Nitrogen, NO2 plus NO3	mg/L	1.0	1.0	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

QC Batch: 581698 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60300963007, 60300963008, 60300963010, 60300963011, 60300963017

METHOD BLANK: 2387111 Matrix: Water
Associated Lab Samples: 60300963007, 60300963008, 60300963010, 60300963011, 60300963017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	04/30/19 15:30	

LABORATORY CONTROL SAMPLE: 2387112

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.8	116	80-120	

MATRIX SPIKE SAMPLE: 2387114

Parameter	Units	60300782005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	3.2	5	7.9	94	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

QC Batch: 582190 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60300963009, 60300963025, 60300963026, 60300963027, 60300963028

METHOD BLANK: 2389256 Matrix: Water
Associated Lab Samples: 60300963009, 60300963025, 60300963026, 60300963027, 60300963028

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	05/02/19 14:06	

LABORATORY CONTROL SAMPLE: 2389257

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.3	106	80-120	

MATRIX SPIKE SAMPLE: 2389258

Parameter	Units	60301319001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	16.0	10	26.9	109	80-120	

SAMPLE DUPLICATE: 2389259

Parameter	Units	60300963009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	14.2	14.2	0	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

QC Batch: 583664 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60300963029, 60300963030

METHOD BLANK: 2394923 Matrix: Water
Associated Lab Samples: 60300963029, 60300963030

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	05/09/19 14:35	

LABORATORY CONTROL SAMPLE: 2394924

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.8	115	80-120	

MATRIX SPIKE SAMPLE: 2394925

Parameter	Units	60301519001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	10.2	10	21.2	110	80-120	

SAMPLE DUPLICATE: 2394926

Parameter	Units	60301520002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	118	120	1	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

QC Batch: 583665 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60300963007, 60300963008, 60300963009, 60300963010, 60300963011, 60300963017, 60300963025, 60300963026, 60300963027, 60300963028, 60300963029, 60300963030

METHOD BLANK: 2394931 Matrix: Water
Associated Lab Samples: 60300963007, 60300963008, 60300963009, 60300963010, 60300963011, 60300963017, 60300963025, 60300963026, 60300963027, 60300963028, 60300963029, 60300963030

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.29	05/09/19 17:34	

LABORATORY CONTROL SAMPLE: 2394932

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.8	116	80-120	

MATRIX SPIKE SAMPLE: 2394933

Parameter	Units	60300963007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	3660	2500	6750	124	80-120	M1

SAMPLE DUPLICATE: 2394934

Parameter	Units	60300963008 Result	Dup Result	RPD	Max RPD	Qualifiers
Dissolved Organic Carbon	mg/L	2.8	2.8	0	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 582449

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 582450

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 582452

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 582726

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 583067

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H6	Analysis initiated outside of the 15 minute EPA required holding time.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

ANALYTE QUALIFIERS

L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.
pH	Post-analysis pH measurement indicates insufficient VOA sample preservation.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60300963007	TMW-21-201904	EPA 3010	582968	EPA 6010	583075
60300963008	TMW-11-201904	EPA 3010	582968	EPA 6010	583075
60300963009	TMW-25-201904	EPA 3010	582968	EPA 6010	583075
60300963010	TMW-34-201904	EPA 3010	582968	EPA 6010	583075
60300963011	MW-185-201904	EPA 3010	582968	EPA 6010	583075
60300963017	MW-194-201904	EPA 3010	582968	EPA 6010	583075
60300963025	TMW-16-201904	EPA 3010	582968	EPA 6010	583075
60300963026	TMW-32-201904	EPA 3010	582968	EPA 6010	583075
60300963027	MW-61R-201904	EPA 3010	582968	EPA 6010	583075
60300963028	TMW-22R-201904	EPA 3010	582968	EPA 6010	583075
60300963029	TMW-26-201904	EPA 3010	582968	EPA 6010	583075
60300963030	TMW-10-201904	EPA 3010	582968	EPA 6010	583075
60300963001	MW-95-201904	EPA 5030B/8260	582449		
60300963001	MW-95-201904	EPA 5030B/8260	583067		
60300963002	DUP-06-201904	EPA 5030B/8260	582449		
60300963002	DUP-06-201904	EPA 5030B/8260	582726		
60300963002	DUP-06-201904	EPA 5030B/8260	583067		
60300963003	ITMW-10-201904	EPA 5030B/8260	582449		
60300963004	DUP-07-201904	EPA 5030B/8260	582449		
60300963005	MW-58R-201904	EPA 5030B/8260	582449		
60300963005	MW-58R-201904	EPA 5030B/8260	582726		
60300963006	MW-55R-201904	EPA 5030B/8260	582449		
60300963007	TMW-21-201904	EPA 5030B/8260	582449		
60300963008	TMW-11-201904	EPA 5030B/8260	582449		
60300963009	TMW-25-201904	EPA 5030B/8260	582449		
60300963010	TMW-34-201904	EPA 5030B/8260	582450		
60300963011	MW-185-201904	EPA 5030B/8260	582450		
60300963012	MW-91-201904	EPA 5030B/8260	582450		
60300963012	MW-91-201904	EPA 5030B/8260	582726		
60300963013	IW-77-201904	EPA 5030B/8260	582450		
60300963013	IW-77-201904	EPA 5030B/8260	582726		
60300963014	DUP-04-201904	EPA 5030B/8260	583067		
60300963015	ITMW-11-201904	EPA 5030B/8260	582450		
60300963015	ITMW-11-201904	EPA 5030B/8260	583067		
60300963016	DUP-05-201904	EPA 5030B/8260	582450		
60300963016	DUP-05-201904	EPA 5030B/8260	582726		
60300963017	MW-194-201904	EPA 5030B/8260	582450		
60300963018	MW-38-201904	EPA 5030B/8260	582450		
60300963018	MW-38-201904	EPA 5030B/8260	583067		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60300963019	DUP-02-201904	EPA 5030B/8260	582450		
60300963019	DUP-02-201904	EPA 5030B/8260	582726		
60300963020	MW-56R-201904	EPA 5030B/8260	582450		
60300963020	MW-56R-201904	EPA 5030B/8260	582726		
60300963021	DUP-03-201904	EPA 5030B/8260	582450		
60300963021	DUP-03-201904	EPA 5030B/8260	582726		
60300963022	MW-57R-201904	EPA 5030B/8260	582450		
60300963022	MW-57R-201904	EPA 5030B/8260	582726		
60300963023	MW-86-201904	EPA 5030B/8260	582450		
60300963023	MW-86-201904	EPA 5030B/8260	583067		
60300963024	MW-189-201904	EPA 5030B/8260	582450		
60300963025	TMW-16-201904	EPA 5030B/8260	582450		
60300963025	TMW-16-201904	EPA 5030B/8260	582726		
60300963026	TMW-32-201904	EPA 5030B/8260	582450		
60300963027	MW-61R-201904	EPA 5030B/8260	582450		
60300963028	TMW-22R-201904	EPA 5030B/8260	582450		
60300963028	TMW-22R-201904	EPA 5030B/8260	582726		
60300963029	TMW-26-201904	EPA 5030B/8260	582450		
60300963030	TMW-10-201904	EPA 5030B/8260	582452		
60300963031	EB-04-201904	EPA 5030B/8260	582452		
60300963032	EB-05-201904	EPA 5030B/8260	582452		
60300963033	TB-04	EPA 5030B/8260	582452		
60300963034	TB-05	EPA 5030B/8260	582452		
60300963035	TB-06	EPA 5030B/8260	582452		
60300963036	TB-07	EPA 5030B/8260	582452		
60300963024	MW-189-201904	SM 3500-Fe B#4	581507		
60300963007	TMW-21-201904	EPA 300.0	583003		
60300963007	TMW-21-201904	EPA 300.0	583325		
60300963008	TMW-11-201904	EPA 300.0	583003		
60300963008	TMW-11-201904	EPA 300.0	583325		
60300963009	TMW-25-201904	EPA 300.0	583003		
60300963009	TMW-25-201904	EPA 300.0	583325		
60300963010	TMW-34-201904	EPA 300.0	583325		
60300963011	MW-185-201904	EPA 300.0	583325		
60300963017	MW-194-201904	EPA 300.0	583027		
60300963025	TMW-16-201904	EPA 300.0	583027		
60300963025	TMW-16-201904	EPA 300.0	583325		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60300963026	TMW-32-201904	EPA 300.0	583027		
60300963027	MW-61R-201904	EPA 300.0	583027		
60300963027	MW-61R-201904	EPA 300.0	583325		
60300963028	TMW-22R-201904	EPA 300.0	583027		
60300963028	TMW-22R-201904	EPA 300.0	583325		
60300963029	TMW-26-201904	EPA 300.0	583027		
60300963030	TMW-10-201904	EPA 300.0	583027		
60300963030	TMW-10-201904	EPA 300.0	583325		
60300963007	TMW-21-201904	EPA 353.2	581268		
60300963008	TMW-11-201904	EPA 353.2	581268		
60300963009	TMW-25-201904	EPA 353.2	581268		
60300963010	TMW-34-201904	EPA 353.2	581268		
60300963011	MW-185-201904	EPA 353.2	581268		
60300963017	MW-194-201904	EPA 353.2	581268		
60300963025	TMW-16-201904	EPA 353.2	581268		
60300963026	TMW-32-201904	EPA 353.2	581268		
60300963027	MW-61R-201904	EPA 353.2	581268		
60300963028	TMW-22R-201904	EPA 353.2	581268		
60300963029	TMW-26-201904	EPA 353.2	581268		
60300963030	TMW-10-201904	EPA 353.2	581268		
60300963007	TMW-21-201904	SM 5310C	581698		
60300963008	TMW-11-201904	SM 5310C	581698		
60300963009	TMW-25-201904	SM 5310C	582190		
60300963010	TMW-34-201904	SM 5310C	581698		
60300963011	MW-185-201904	SM 5310C	581698		
60300963017	MW-194-201904	SM 5310C	581698		
60300963025	TMW-16-201904	SM 5310C	582190		
60300963026	TMW-32-201904	SM 5310C	582190		
60300963027	MW-61R-201904	SM 5310C	582190		
60300963028	TMW-22R-201904	SM 5310C	582190		
60300963029	TMW-26-201904	SM 5310C	583664		
60300963030	TMW-10-201904	SM 5310C	583664		
60300963007	TMW-21-201904	SM 5310C	583665		
60300963008	TMW-11-201904	SM 5310C	583665		
60300963009	TMW-25-201904	SM 5310C	583665		
60300963010	TMW-34-201904	SM 5310C	583665		
60300963011	MW-185-201904	SM 5310C	583665		
60300963017	MW-194-201904	SM 5310C	583665		
60300963025	TMW-16-201904	SM 5310C	583665		
60300963026	TMW-32-201904	SM 5310C	583665		
60300963027	MW-61R-201904	SM 5310C	583665		
60300963028	TMW-22R-201904	SM 5310C	583665		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60300963

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60300963029	**TMW-26-201904**	SM 5310C	583665		
60300963030	**TMW-10-201904**	SM 5310C	583665		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in

WO# : 60300963

60300963

LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected by (print): Haley Anders	Purchase Order #: DW PWS ID #:
Collected by (signature): Haley Anders	Quote #: DW Location Code #:
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold	Turnaround Date Required: Standard RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)
	Immediately Packed on Ice? [ ] Yes [ ] No
	Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

Project Manager:

3 D 1 u 2 u 0

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other Benzalkonium chloride

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	8620 Full List	MEEA AM20GAX	metals, total iron	Sulfate, Nitrate, Chloride	TOC	DOC	VFA			LAB Sample # / Comments
MW-95-201904	GW		4/25/19	0940				3	X	DG9H(3)								001
DUP-06-201904				0940				3										002
ITMW-10-201904				1115				3										003
DUP-07-201904				1115				3										004
MW-58R-201904				1240				3										005
MW-55R-201904				1505				3										006
TMW-21-201904		AG3S		1755		AG2U, BP3N		12		X	X	X	X	X	X	DG9H(3), 4/12/19	DG9U(3), BP3U	007
TMW-11-201904				1255				12										008
TMW-25-201904				1100				12										009
TMW-34-201904				1410				12										010

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [✓] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): [ ] N N/A

Packing Material Used: ZIP

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [✓] Pace Courier [ ]

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Haley Anders / Ramboll	4/25/19 1830		4/26/19 0625
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	✓	N	NA
Custody Signatures Present	✓	N	NA
Collector Signature Present	✓	N	NA
Bottles intact	✓	N	NA
Correct Bottles	✓	N	NA
Sufficient Volume	✓	N	NA
Samples received on ice	✓	N	NA
VOA - Headspace Acceptable	Y	✓	NA
USDA Regulated Soils	Y	N	✓
Samples in holding time	✓	N	NA
Residual Chlorine Present	Y	N	✓
Cl Strips:			
Sample pH Acceptable	Y	N	✓
pH Strips:			
Sulfide Present	Y	N	✓
Lead Acetate Strips:			

60300963

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: T-294

Cooler Temp Upon Receipt 2.5, 1.4, 3.0, 5.2 oC

Cooler Therm Corr. Factor 1.0 oC

Cooler Temp Corrected 2.5, 0.4 oC

Comments: 2.0, 2.2

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 1 of 4

Page 8 of 17

F-ALL-C-010-rev.00, 05Jul2018

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd Ste 925 Overland Park Kansas	
Report To: Tamara House-Knight	Email To: thouseknight@Ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State: / County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Haley Ahlers	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature): Haley Ahlers	Turnaround Date Required: Standard Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

Container Preservative Type **: 3 D I U 2 U O

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other Benzalkonium chloride

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	8420 Full List	MEEA 4M20GAX	Metals, Total Iron	Sulfate, Nitrate, Chloride	TDC	DOC	VFA				Lab Sample # / Comments:	
MW-185-201904	GW	AG 35	4/25/19	1635	AG2U, BP3	N		12	X	X	X	X	X	X	X	DG9H(5),	DG9U(3), BP3U		011	
MW-91-201904				0947				3		DG9U(3)									012	
IW-77-201904				1130				3											013	
DUP-04-201904				1130				3											014	
ITMW-11-201904				1415				3											015	
DUP-05-201904				1415				3											016	
MW-194-201904		AG 35, BP3	N	1415	BP3U, AG2U			12		X	X	X	X	X	X	DG9H(5),	DG9U(3)		017	
MW-38-201904				0945				3		DG9U(3)									018	
DUP-02-201904				0945				3											019	
MW-5 OR 201904				1130				3											020	

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

LAB USE ONLY:
Lab Sample # / Comments:
40030963

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used: Zplc

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #:

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: T-296
Cooler 1 Temp Upon Receipt: 3.2 °C 3.2
Cooler 1 Therm Corr. Factor: -1.0 °C
Cooler 1 Corrected Temp: 1.5 °C
Comments: 2.0, 1.2

Relinquished by/Company: (Signature) Haley Ahlers / Ramboll	Date/Time: 4/25/19 1830	Received by/Company: (Signature)	Date/Time: 4/26/19 0625
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 2 of: 4

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: Email:	Site/Facility ID # / Compliance Monitoring? [ ] Yes [ ] No
Collected by (print): Haley Ahlers	Purchase Order # / DW PWS ID #:
Collected by (signature): Haley Ahlers	Quote # / DW Location Code #:
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	Turnaround Date Required: Standard / Immediately Packed on Ice? [ ] Yes [ ] No
	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply) / Field Filtered (if applicable): [ ] Yes [ ] No
	Analysis: _____

Container Preservative Type **: 3 D 7 H 2 H O A W

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other Benzalkonium Chloride

Lab Project Manager:

Analyses: 8620 Full List; MEEA AM20GAX; Metals, total iron; Sulfate, nitrate, Chloride; TDC; DOC; VFA; 8620 Full List; Ferrous Iron

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	✓	N	NA
Custody Signatures Present	✓	N	NA
Collector Signature Present	✓	N	NA
Bottles intact	✓	N	NA
Correct Bottles	✓	N	NA
Sufficient Volume	✓	N	NA
Samples received on ice	✓	N	NA
VOA - Headspace Acceptable	Y	✓	NA
USDA Regulated Soils	Y	N	✓
Samples in holding time	✓	N	NA
Residual Chlorine Present	Y	N	✓
Cl Strips: _____			
Sample pH Acceptable	Y	N	✓
pH Strips: _____			
Sulfide Present	Y	N	✓
Lead Acetate Strips: _____			

LAB USE ONLY: LD3009U3

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8620 Full List	MEEA AM20GAX	Metals, total iron	Sulfate, nitrate, Chloride	TDC	DOC	VFA	8620 Full List	Ferrous Iron	LAB USE ONLY Lab Sample # / Comments
DUP-03-201904	GW		4/25/19	1130				3	X	DG4H(3)								021
MW-5R-201904				1240				3	X									022
MW-86-201904				1530				3								X		023
MW-189-201904				1725				3	X				BP3U				X	024
TMW-16-201904		AG3S		1050	AG4H, BP3U			12		X	X	X	X	X	X	DG4H(5), DG4H(3)	BP3N	025
TMW-32-201904				1330				12										026
MW-61R-201904				1540				12										027
TMW-22R-201904				1745				12										028
TMW-26-201904				1645				12										029
TMW-10-201904				1730				12		X	X	X	X	X	X			030

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [✓] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): ✓ N N/A

Packing Material Used: Zip

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [✓] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: T-294

Cooler Temp Upon Receipt: 2.5, 1.4 / 3.0, 3.2 oC

Cooler Therm Corr. Factor: -1.0 oC

Cooler Temp Corrected: 1.5, 0.4 / 2.0, 2.2 oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 3 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Haley Ahlers / Ramboll	4/25/19 1835		4/26/19 0825
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House- Knight
Address: 7500 College Blvd Ste 925 Overland Pk Kansas	
Report To: Tamara House- Knight	Email To: thouseknight@Ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State: / County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Haley Anders	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature): Haley Anders	Turnaround Date Required: Standard Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

Container Preservative Type ** | Lab Project Manager:

3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses | Lab Profile/Line:

8620 Full List

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	X	N	NA
Custody Signatures Present	X	N	NA
Collector Signature Present	X	N	NA
Bottles Intact	X	N	NA
Correct Bottles	X	N	NA
Sufficient Volume	X	N	NA
Samples Received on Ice	X	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	X	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

LAB USE ONLY:
Lab Sample # / Comments:

L0300963

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns		Lab Sample # / Comments
EB-04-201904			4/25/19	1805				3	X D647(3)	031
EB-05-201904			4/25/19	1805				3	D647(3)	032
TB-04								2	D647(2)	033
TB-05								2		034
TB-06								2		035
TB-07								2		036

Haley Anders

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used: Zplc

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #:

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: T-29
Cooler 1 Temp Upon Receipt: 3.5, 3.6 oC
Cooler 1 Therm Corr. Factor: -1.0 oC
Cooler 1 Corrected Temp: 1.5, 2.6 oC
Comments: 2.0 2.2

Relinquished by/Company: (Signature) Haley Anders/Ramboll	Date/Time: 4/25/19 1830	Received by/Company: (Signature)	Date/Time: 4/26/19 0625	MTJL LAB USE ONLY
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Table #: Acctnum: Template: Prelogin: PM: PB:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 4 of: 4

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

May 10, 2019

Richard Mannz
Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219

RE: **WHIRLPOOL SPRING/ 60300963**

Pace Workorder: 30177

Dear Richard Mannz:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, April 30, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 05/10/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 26

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

Lab ID	Sample ID	Matrix	Date Collected	Date Received
301770001	TMW-21-201904	Water	4/25/2019 17:55	4/30/2019 11:45
301770002	TMW-11-201904	Water	4/25/2019 12:55	4/30/2019 11:45
301770003	TMW-25-201904	Water	4/25/2019 11:00	4/30/2019 11:45
301770004	TMW-34-201904	Water	4/25/2019 14:10	4/30/2019 11:45
301770005	MW-185-201904	Water	4/25/2019 16:35	4/30/2019 11:45
301770006	MW-194-201904	Water	4/25/2019 14:15	4/30/2019 11:45
301770007	TMW-16-201904	Water	4/25/2019 10:50	4/30/2019 11:45
301770008	TMW-32-201904	Water	4/25/2019 13:30	4/30/2019 11:45
301770009	MW-61R-201904	Water	4/25/2019 15:40	4/30/2019 11:45
301770010	TMW-22R-201904	Water	4/25/2019 17:45	4/30/2019 11:45
301770011	TMW-26-201904	Water	4/25/2019 16:45	4/30/2019 11:45
301770012	TMW-10-201904	Water	4/25/2019 17:30	4/30/2019 11:45

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

Workorder Comments

The container pH for samples 30177 (0001, 0003, 0007-0008, 0011-0012) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

The analysis for volatile fatty acids, method AM23G, was reported at dilution for samples 30177 (0001-0003, 0006-0007, 0010-0012) due to the measured chloride concentration within the sample; matrix interfering compound.

Batch Comments

Batch: EDON/4055 - Low Level Volatile Fatty Acids

The matrix spike and/or spike duplicate, recovery or relative percent difference; accuracy influenced by the reference sample 301680002. Analyte Lactic and Acetic acids. Batch acceptance based on laboratory control sample recovery.

The percent recovery for the opening calibration verification analysis was above laboratory control limits. Analytes Lactic acid. Results associated to the analytes in samples were unaffected by high bias.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

Lab ID: **301770001** Date Received: 4/30/2019 11:45 Matrix: Water

Sample ID: **TMW-21-201904** Date Collected: 4/25/2019 17:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<20**	mg/l	20	4.8	100	5/3/2019 03:51	KB	d
Acetic Acid	**610**	mg/l	100	25	1000	5/3/2019 04:44	KB	d,B
Propionic Acid	**3900**	mg/l	100	2.0	1000	5/3/2019 04:44	KB	d,B
Butyric Acid	**280**	mg/l	10	0.70	100	5/3/2019 03:51	KB	d,B
Pyruvic Acid	**13**	mg/l	10	0.50	100	5/3/2019 03:51	KB	d
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**17000**	ug/l	0.50	0.046	1	5/6/2019 09:45	BW	n
Ethane	**0.86**	ug/l	0.10	0.0050	1	5/6/2019 09:45	BW	n
Ethene	**2.5**	ug/l	0.10	0.0040	1	5/6/2019 09:45	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	5/6/2019 09:45	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

Lab ID: **301770002** Date Received: 4/30/2019 11:45 Matrix: Water

Sample ID: **TMW-11-201904** Date Collected: 4/25/2019 12:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<2.0**	mg/l	2.0	0.48	10	5/2/2019 10:58	KB	d,D3,B,M1,M5
Acetic Acid	**<1.0**	mg/l	1.0	0.25	10	5/2/2019 10:58	KB	d,D3,B,M5
Propionic Acid	**<1.0**	mg/l	1.0	0.020	10	5/2/2019 10:58	KB	d,B
Butyric Acid	**<1.0**	mg/l	1.0	0.070	10	5/2/2019 10:58	KB	d,B
Pyruvic Acid	**<1.0**	mg/l	1.0	0.050	10	5/2/2019 10:58	KB	d
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**17000**	ug/l	0.50	0.046	1	5/6/2019 09:57	BW	n
Ethane	**1.4**	ug/l	0.10	0.0050	1	5/6/2019 09:57	BW	n
Ethene	**1.1**	ug/l	0.10	0.0040	1	5/6/2019 09:57	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	5/6/2019 09:57	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

Lab ID: **301770003** Date Received: 4/30/2019 11:45 Matrix: Water

Sample ID: **TMW-25-201904** Date Collected: 4/25/2019 11:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<20**	mg/l	20	4.8	100	5/3/2019 05:37	KB	d
Acetic Acid	**290**	mg/l	10	2.5	100	5/3/2019 05:37	KB	d,B
Propionic Acid	**2000**	mg/l	100	2.0	1000	5/3/2019 06:31	KB	d,B
Butyric Acid	**120**	mg/l	10	0.70	100	5/3/2019 05:37	KB	d,B
Pyruvic Acid	**19**	mg/l	10	0.50	100	5/3/2019 05:37	KB	d
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**9900**	ug/l	0.50	0.046	1	5/6/2019 10:11	BW	n
Ethane	**0.22**	ug/l	0.10	0.0050	1	5/6/2019 10:11	BW	n
Ethene	**1.1**	ug/l	0.10	0.0040	1	5/6/2019 10:11	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	5/6/2019 10:11	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

Lab ID: **301770004** Date Received: 4/30/2019 11:45 Matrix: Water

Sample ID: **TMW-34-201904** Date Collected: 4/25/2019 14:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	5/2/2019 12:51	KB	D3,B,M1,M5
Acetic Acid	**0.62**	mg/l	0.10	0.025	1	5/2/2019 12:51	KB	D3,B,M5
Propionic Acid	**<0.10**	mg/l	0.10	0.0020	1	5/2/2019 12:51	KB	B
Butyric Acid	**<0.10**	mg/l	0.10	0.0070	1	5/2/2019 12:51	KB	B
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	5/2/2019 12:51	KB	
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**13000**	ug/l	0.50	0.046	1	5/6/2019 10:23	BW	n
Ethane	**0.86**	ug/l	0.10	0.0050	1	5/6/2019 10:23	BW	n
Ethene	**0.11**	ug/l	0.10	0.0040	1	5/6/2019 10:23	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	5/6/2019 10:23	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

Lab ID: **301770005** Date Received: 4/30/2019 11:45 Matrix: Water

Sample ID: **MW-185-201904** Date Collected: 4/25/2019 16:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	5/2/2019 13:45	KB	D3,B,M1,M5
Acetic Acid	**<0.10**	mg/l	0.10	0.025	1	5/2/2019 13:45	KB	D3,B,M5
Propionic Acid	**<0.10**	mg/l	0.10	0.0020	1	5/2/2019 13:45	KB	B
Butyric Acid	**<0.10**	mg/l	0.10	0.0070	1	5/2/2019 13:45	KB	B
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	5/2/2019 13:45	KB	
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**0.62**	ug/l	0.50	0.046	1	5/6/2019 11:29	BW	n
Ethane	**0.65**	ug/l	0.10	0.0050	1	5/6/2019 11:29	BW	n
Ethene	**<0.10**	ug/l	0.10	0.0040	1	5/6/2019 11:29	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	5/6/2019 11:29	BW	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

Lab ID: **301770006** Date Received: 4/30/2019 11:45 Matrix: Water

Sample ID: **MW-194-201904** Date Collected: 4/25/2019 14:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<2.0**	mg/l	2.0	0.48	10	5/2/2019 14:39	KB	d,D3,B,M1,M5
Acetic Acid	**12**	mg/l	1.0	0.25	10	5/2/2019 14:39	KB	d,D3,B,M5
Propionic Acid	**32**	mg/l	1.0	0.020	10	5/2/2019 14:39	KB	d,B
Butyric Acid	**<1.0**	mg/l	1.0	0.070	10	5/2/2019 14:39	KB	d,B
Pyruvic Acid	**<1.0**	mg/l	1.0	0.050	10	5/2/2019 14:39	KB	d
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**6800**	ug/l	0.50	0.046	1	5/6/2019 11:41	BW	n
Ethane	**1.3**	ug/l	0.10	0.0050	1	5/6/2019 11:41	BW	n
Ethene	**0.29**	ug/l	0.10	0.0040	1	5/6/2019 11:41	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	5/6/2019 11:41	BW	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

Lab ID: **301770007** Date Received: 4/30/2019 11:45 Matrix: Water

Sample ID: **TMW-16-201904** Date Collected: 4/25/2019 10:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<20**	mg/l	20	4.8	100	5/3/2019 07:24	KB	d
Acetic Acid	**83**	mg/l	10	2.5	100	5/3/2019 07:24	KB	d,B
Propionic Acid	**3100**	mg/l	100	2.0	1000	5/3/2019 08:17	KB	d,B
Butyric Acid	**34**	mg/l	10	0.70	100	5/3/2019 07:24	KB	d,B
Pyruvic Acid	**23**	mg/l	10	0.50	100	5/3/2019 07:24	KB	d
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**16000**	ug/l	0.50	0.046	1	5/6/2019 11:54	BW	n
Ethane	**0.45**	ug/l	0.10	0.0050	1	5/6/2019 11:54	BW	n
Ethene	**2.0**	ug/l	0.10	0.0040	1	5/6/2019 11:54	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	5/6/2019 11:54	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

Lab ID: **301770008** Date Received: 4/30/2019 11:45 Matrix: Water

Sample ID: **TMW-32-201904** Date Collected: 4/25/2019 13:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	5/2/2019 16:26	KB	D3,B,M1,M5
Acetic Acid	**<0.10**	mg/l	0.10	0.025	1	5/2/2019 16:26	KB	D3,B,M5
Propionic Acid	**<0.10**	mg/l	0.10	0.0020	1	5/2/2019 16:26	KB	B
Butyric Acid	**<0.10**	mg/l	0.10	0.0070	1	5/2/2019 16:26	KB	B
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	5/2/2019 16:26	KB	
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**7800**	ug/l	0.50	0.046	1	5/6/2019 12:08	BW	n
Ethane	**0.26**	ug/l	0.10	0.0050	1	5/6/2019 12:08	BW	n
Ethene	**0.70**	ug/l	0.10	0.0040	1	5/6/2019 12:08	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	5/6/2019 12:08	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

Lab ID: **301770009** Date Received: 4/30/2019 11:45 Matrix: Water

Sample ID: **MW-61R-201904** Date Collected: 4/25/2019 15:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	5/2/2019 17:19	KB	D3,B,M1,M5
Acetic Acid	**<0.10**	mg/l	0.10	0.025	1	5/2/2019 17:19	KB	D3,B,M5
Propionic Acid	**<0.10**	mg/l	0.10	0.0020	1	5/2/2019 17:19	KB	B
Butyric Acid	**<0.10**	mg/l	0.10	0.0070	1	5/2/2019 17:19	KB	B
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	5/2/2019 17:19	KB	
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**4300**	ug/l	0.50	0.046	1	5/6/2019 12:20	BW	n
Ethane	**<0.10**	ug/l	0.10	0.0050	1	5/6/2019 12:20	BW	n
Ethene	**<0.10**	ug/l	0.10	0.0040	1	5/6/2019 12:20	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	5/6/2019 12:20	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

Lab ID: **301770010** Date Received: 4/30/2019 11:45 Matrix: Water

Sample ID: **TMW-22R-201904** Date Collected: 4/25/2019 17:45

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<2.0**	mg/l	2.0	0.48	10	5/2/2019 18:12	KB	d,D3,B,M1,M5
Acetic Acid	**2.7**	mg/l	1.0	0.25	10	5/2/2019 18:12	KB	d,D3,B,M5
Propionic Acid	**1.4**	mg/l	1.0	0.020	10	5/2/2019 18:12	KB	d,B
Butyric Acid	**<1.0**	mg/l	1.0	0.070	10	5/2/2019 18:12	KB	d,B
Pyruvic Acid	**<1.0**	mg/l	1.0	0.050	10	5/2/2019 18:12	KB	d
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**7700**	ug/l	0.50	0.046	1	5/6/2019 12:32	BW	n
Ethane	**1.1**	ug/l	0.10	0.0050	1	5/6/2019 12:32	BW	n
Ethene	**7.2**	ug/l	0.10	0.0040	1	5/6/2019 12:32	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	5/6/2019 12:32	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

Lab ID: **301770011** Date Received: 4/30/2019 11:45 Matrix: Water

Sample ID: **TMW-26-201904** Date Collected: 4/25/2019 16:45

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<20**	mg/l	20	4.8	100	5/3/2019 09:11	KB	d
Acetic Acid	**360**	mg/l	100	25	1000	5/3/2019 10:07	KB	d,B
Propionic Acid	**3900**	mg/l	100	2.0	1000	5/3/2019 10:07	KB	d,B
Butyric Acid	**140**	mg/l	10	0.70	100	5/3/2019 09:11	KB	d,B
Pyruvic Acid	**32**	mg/l	10	0.50	100	5/3/2019 09:11	KB	d
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**12000**	ug/l	0.50	0.046	1	5/6/2019 12:45	BW	n
Ethane	**0.31**	ug/l	0.10	0.0050	1	5/6/2019 12:45	BW	n
Ethene	**2.0**	ug/l	0.10	0.0040	1	5/6/2019 12:45	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	5/6/2019 12:45	BW	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

Lab ID: **301770012** Date Received: 4/30/2019 11:45 Matrix: Water

Sample ID: **TMW-10-201904** Date Collected: 4/25/2019 17:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<2.0**	mg/l	2.0	0.48	10	5/2/2019 20:03	KB	d,D3,B,M1,M5
Acetic Acid	**2.7**	mg/l	1.0	0.25	10	5/2/2019 20:03	KB	d,D3,B,M5
Propionic Acid	**4.0**	mg/l	1.0	0.020	10	5/2/2019 20:03	KB	d,B
Butyric Acid	**<1.0**	mg/l	1.0	0.070	10	5/2/2019 20:03	KB	d,B
Pyruvic Acid	**<1.0**	mg/l	1.0	0.050	10	5/2/2019 20:03	KB	d
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**16000**	ug/l	0.50	0.046	1	5/6/2019 12:57	BW	n
Ethane	**0.32**	ug/l	0.10	0.0050	1	5/6/2019 12:57	BW	n
Ethene	**2.8**	ug/l	0.10	0.0040	1	5/6/2019 12:57	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	5/6/2019 12:57	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.
B	The analyte was detected in the associated blank.
D3	The matrix spike duplicate relative percent difference (RPD) exceeded laboratory control limits.
d	The analyte concentration was determined from a dilution.
M1	The continuing calibration verification recovery was outside laboratory control limits.
M5	The matrix spike duplicate sample recovery was outside laboratory control limits.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

QC Batch: EDON/4055 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 301770002, 301770004, 301770005, 301770006, 301770008, 301770009, 301770010, 301770012

METHOD BLANK: 61021

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	D3,B,M1,M5
Acetic Acid	mg/l	<0.10	0.10	D3,B,M5
Propionic Acid	mg/l	<0.10	0.10	B
Butyric Acid	mg/l	<0.10	0.10	B
Pyruvic Acid	mg/l	<0.10	0.10	

LABORATORY CONTROL SAMPLE: 61022

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	2.1	106	70-130	D3,B,M1,M5
Acetic Acid	mg/l	2	2.0	102	70-130	D3,B,M5
Propionic Acid	mg/l	2	2.0	102	70-130	B
Butyric Acid	mg/l	2	2.1	104	70-130	B
Pyruvic Acid	mg/l	2	1.8	92	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 61023 61024 Original: 301680002

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
EDonors											
Lactic Acid	mg/l	0.057	2	1.9	4.2	94	207	70-130	74	30	D3,B,M1,M5
Acetic Acid	mg/l	0.77	2	2.7	1.1	98	16	70-130	86	30	D3,B,M5
Propionic Acid	mg/l	0.018	2	2.1	1.9	106	96	70-130	11	30	B
Butyric Acid	mg/l	0.036	2	2.4	2.2	117	106	70-130	9.5	30	B
Pyruvic Acid	mg/l	0	2	2.2	2.4	112	122	70-130	9	30	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

QC Batch: DISG/7517 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 301770001, 301770002, 301770003, 301770004, 301770005, 301770006, 301770007, 301770008, 301770009, 301770010, 301770011, 301770012

METHOD BLANK: 61037

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n
Acetylene	ug/l	<0.50	0.50	n

LABORATORY CONTROL SAMPLE & LCSD: 61038 61039

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	710	710	95	95	80-120	0.13	20	n
Ethane	ug/l	38	39	40	104	105	80-120	1.3	20	n
Ethene	ug/l	35	36	37	103	104	80-120	0.62	20	n
Acetylene	ug/l	33	36	35	109	106	80-120	3.4	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

QC Batch: EDON/4059 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 301770001, 301770003, 301770007, 301770011

METHOD BLANK: 61087

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	B
Propionic Acid	mg/l	<0.10	0.10	B
Butyric Acid	mg/l	<0.10	0.10	B
Pyruvic Acid	mg/l	<0.10	0.10	

LABORATORY CONTROL SAMPLE: 61088

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	2.1	105	70-130	
Acetic Acid	mg/l	2	2.0	102	70-130	B
Propionic Acid	mg/l	2	2.0	101	70-130	B
Butyric Acid	mg/l	2	2.0	101	70-130	B
Pyruvic Acid	mg/l	2	1.9	94	70-130	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

QUALITY CONTROL PARAMETER QUALIFIERS

B	The analyte was detected in the associated blank.
D3	The matrix spike duplicate relative percent difference (RPD) exceeded laboratory control limits.
M1	The continuing calibration verification recovery was outside laboratory control limits.
M5	The matrix spike duplicate sample recovery was outside laboratory control limits.
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 30177 WHIRLPOOL SPRING/ 60300963

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
301770002	TMW-11-201904			AM23G	EDON/4055
301770004	TMW-34-201904			AM23G	EDON/4055
301770005	MW-185-201904			AM23G	EDON/4055
301770006	MW-194-201904			AM23G	EDON/4055
301770008	TMW-32-201904			AM23G	EDON/4055
301770009	MW-61R-201904			AM23G	EDON/4055
301770010	TMW-22R-201904			AM23G	EDON/4055
301770012	TMW-10-201904			AM23G	EDON/4055
301770001	TMW-21-201904			AM20GAX	DISG/7517
301770002	TMW-11-201904			AM20GAX	DISG/7517
301770003	TMW-25-201904			AM20GAX	DISG/7517
301770004	TMW-34-201904			AM20GAX	DISG/7517
301770005	MW-185-201904			AM20GAX	DISG/7517
301770006	MW-194-201904			AM20GAX	DISG/7517
301770007	TMW-16-201904			AM20GAX	DISG/7517
301770008	TMW-32-201904			AM20GAX	DISG/7517
301770009	MW-61R-201904			AM20GAX	DISG/7517
301770010	TMW-22R-201904			AM20GAX	DISG/7517
301770011	TMW-26-201904			AM20GAX	DISG/7517
301770012	TMW-10-201904			AM20GAX	DISG/7517
301770001	TMW-21-201904			AM23G	EDON/4059
301770003	TMW-25-201904			AM23G	EDON/4059
301770007	TMW-16-201904			AM23G	EDON/4059
301770011	TMW-26-201904			AM23G	EDON/4059

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Chain of Custody

30177

Pace Analytical®
www.pacelabs.com

Workorder: 60300963 **Workorder Name:** WHIRLPOOL SPRING 2019 **Results Requested By:** 5/10/2019

Report / Invoice To	Subcontract To
Richard Mannz Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665 Email: richard.mannz@pacelabs.com	Pace Energy 220 William Pitt Way Pittsburgh, PA 15238 P.O. SUB-9881

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved		Other				Requested Analysis: AM20GAX M,E,E,A		Volatile Fatty Acids										LAB USE ONLY
1	TMW-21-201904	4/25/2019 17:55	60300963007	Water	3		2				X		X										
2	TMW-11-201904	4/25/2019 12:55	60300963008	Water	3		2				X		X										
3	TMW-25-201904	4/25/2019 11:00	60300963009	Water	3		2				X		X										
4	TMW-34-201904	4/25/2019 14:10	60300963010	Water	3		2				X		X										
5	MW-185-201904	4/25/2019 16:35	60300963011	Water	3		2				X		X										
6	MW-194-201904	4/25/2019 14:15	60300963017	Water	3		2				X		X										
7	TMW-16-201904	4/25/2019 10:50	60300963025	Water	3		2				X		X										
8	TMW-32-201904	4/25/2019 13:30	60300963026	Water	3		2				X		X										
9	MW-61R-201904	4/25/2019 15:40	60300963027	Water	3		2				X		X										
10	TMW-22R-201904	4/25/2019 17:45	60300963028	Water	3		2				X		X										
11	TMW-26-201904	4/25/2019 16:45	60300963029	Water	3		2				X		X										
12	TMW-10-201904	4/25/2019 17:30	60300963030	Water	3		2				X		X										
13																							
14																							
15																							
16																							

Transfers	Released By	Date/Time	Received By	Date/Time
1	EBrockett/Pace	4/29/19 1800	Lora PACE	4.30.19 11:45
2				
3				

Comments

Cooler Temperature on Receipt 1 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

Cooler Receipt Form

Client Name: Pace Project: Whirlpool Spring 2019 Lab Work Order: 30177

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 100078246 €989

Custody Seal on Cooler/Box Present: (Yes) No Seals Intact: (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 1°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided		✓		
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?		✓		

Comments:_____

Cooler contents examined/received by: CS Date: 4.30.19

Project Manager Review: JW Date: 4.30.19

NON-CONFORMANCE FORM

PAES Work Order #: 30177

Date: 4-30-19 Time of Receipt: 11:45 Receiver: LJ

Client: Pace

REASON FOR NON-CONFORMANCE:

TMW-32-201904 # rec'd 1 BAK not received.
No back-up if needed.

ACTION TAKEN:

Client name: _____ Date: _____ Time: _____

client emailed

Customer Service Initials: JW Date: 4.30.19

F-PAE-Q-014-rev.00, 20 Nov2014

Joseph Ward - 60300963

From: Joseph Ward
To: Richard Mannz
Subject: 60300963

Upon receiving your samples for the project referenced above, We only received 1 BAK vial for sample TMW-32-201904. We can still run the analysis but there is no back up if needed.

Joseph Ward
Customer Service
Pace Analytical Energy Services
220 William Pitt Way
Pittsburgh PA 15238
412-826-5245/412-826-2384(Direct)

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

May 13, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on April 29, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Richard Mannz
richard.mannz@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Arkansas Drinking Water
Missouri Certification Number: 10090
WY STR Certification #: 2456.01
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Florida: Cert E871149 SEKS WET
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-18-11
Utah Certification #: KS000212018-8
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070
Missouri Certification Number: 10090

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60301142001	**MW-186-201904**	Water	04/26/19 08:55	04/29/19 08:45
60301142002	**TB-08**	Water	04/26/19 08:55	04/29/19 08:45

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60301142001	**MW-186-201904**	EPA 6010	JDE	1	PASI-K
		EPA 5030B/8260	EMD, PGH	38	PASI-K
		EPA 300.0	JDS	2	PASI-K
		EPA 353.2	BLA	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60301142002	**TB-08**	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Ramboll Environ_AR
Date: May 13, 2019

General Information:
1 sample was analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: May 13, 2019

General Information:
2 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 582452

B: Analyte was detected in the associated method blank.
- BLANK for HBN 582452 [MSV/9672 (Lab ID: 2390351)
  - 1,2-Dichloroethane
  - Trichloroethene

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 582452

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
- LCS (Lab ID: 2390352)
  - Chloromethane

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 582452

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 583067

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: May 13, 2019

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Ramboll Environ_AR
Date: May 13, 2019

General Information:
1 sample was analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 unpres
Client: Ramboll Environ_AR
Date: May 13, 2019

General Information:
1 sample was analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- MW-186-201904 (Lab ID: 60301142001)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 581658

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60301164002,60301172001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 2387021)
  - Nitrogen, Nitrite
- MS (Lab ID: 2387023)
  - Nitrogen, Nitrite

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

Method: **SM 5310C**
Description: 5310C TOC
Client: Ramboll Environ_AR
Date: May 13, 2019

General Information:
1 sample was analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

Method: **SM 5310C**
Description: 5310C Dissolved Organic Carbon
Client: Ramboll Environ_AR
Date: May 13, 2019

General Information:
1 sample was analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

Sample: MW-186-201904 **Lab ID: 60301142001** Collected: 04/26/19 08:55 Received: 04/29/19 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**41400**	ug/L	50.0	14.0	1	05/07/19 16:45	05/08/19 17:03	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**659**	ug/L	10.0	3.3	1		05/04/19 05:17	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		05/04/19 05:17	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		05/04/19 05:17	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		05/04/19 05:17	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		05/04/19 05:17	74-83-9	
2-Butanone (MEK)	**5050**	ug/L	200	36.0	20		05/07/19 15:41	78-93-3	
Carbon disulfide	**3.2J**	ug/L	5.0	0.16	1		05/04/19 05:17	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		05/04/19 05:17	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		05/04/19 05:17	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		05/04/19 05:17	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		05/04/19 05:17	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		05/04/19 05:17	74-87-3	L1
Dibromochloromethane	ND	ug/L	1.0	0.15	1		05/04/19 05:17	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		05/04/19 05:17	75-34-3	
1,2-Dichloroethane	**0.16J**	ug/L	1.0	0.14	1		05/04/19 05:17	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		05/04/19 05:17	75-35-4	
cis-1,2-Dichloroethene	**8.8**	ug/L	1.0	0.17	1		05/04/19 05:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		05/04/19 05:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		05/04/19 05:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		05/04/19 05:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		05/04/19 05:17	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		05/04/19 05:17	100-41-4	
2-Hexanone	**7.3J**	ug/L	10.0	1.0	1		05/04/19 05:17	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		05/04/19 05:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.0J**	ug/L	10.0	0.56	1		05/04/19 05:17	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		05/04/19 05:17	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		05/04/19 05:17	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		05/04/19 05:17	127-18-4	
Toluene	**0.22J**	ug/L	1.0	0.14	1		05/04/19 05:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		05/04/19 05:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		05/04/19 05:17	79-00-5	
Trichloroethene	**5.6**	ug/L	1.0	0.17	1		05/04/19 05:17	79-01-6	
Vinyl chloride	**0.14J**	ug/L	1.0	0.11	1		05/04/19 05:17	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		05/04/19 05:17	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		05/04/19 05:17	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	77-122		1		05/04/19 05:17	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		05/04/19 05:17	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		05/04/19 05:17		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**155**	mg/L	10.0	2.2	10		05/10/19 03:25	16887-00-6	
Sulfate	**13.7**	mg/L	1.0	0.23	1		05/10/19 03:08	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

Sample: MW-186-201904 **Lab ID: 60301142001** Collected: 04/26/19 08:55 Received: 04/29/19 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		04/30/19 08:54		H3
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		04/30/19 08:54	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		04/30/19 08:54	14797-65-0	H3
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**10.2**	mg/L	1.0	0.29	1		05/02/19 17:46	7440-44-0	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**1060**	mg/L	100	29.0	100		05/13/19 12:56		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

Sample: TB-08 **Lab ID: 60301142002** Collected: 04/26/19 08:55 Received: 04/29/19 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**6.9J**	ug/L	10.0	3.3	1		05/04/19 03:23	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		05/04/19 03:23	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		05/04/19 03:23	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		05/04/19 03:23	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		05/04/19 03:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		05/04/19 03:23	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		05/04/19 03:23	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		05/04/19 03:23	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		05/04/19 03:23	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		05/04/19 03:23	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		05/04/19 03:23	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		05/04/19 03:23	74-87-3	L1
Dibromochloromethane	ND	ug/L	1.0	0.15	1		05/04/19 03:23	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		05/04/19 03:23	75-34-3	
1,2-Dichloroethane	**0.14J**	ug/L	1.0	0.14	1		05/04/19 03:23	107-06-2	B
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		05/04/19 03:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		05/04/19 03:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		05/04/19 03:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		05/04/19 03:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		05/04/19 03:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		05/04/19 03:23	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		05/04/19 03:23	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		05/04/19 03:23	591-78-6	
Methylene Chloride	**0.28J**	ug/L	1.0	0.27	1		05/04/19 03:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		05/04/19 03:23	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		05/04/19 03:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		05/04/19 03:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		05/04/19 03:23	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		05/04/19 03:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		05/04/19 03:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		05/04/19 03:23	79-00-5	
Trichloroethene	**0.26J**	ug/L	1.0	0.17	1		05/04/19 03:23	79-01-6	B
Vinyl chloride	ND	ug/L	1.0	0.11	1		05/04/19 03:23	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		05/04/19 03:23	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	80-120		1		05/04/19 03:23	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	77-122		1		05/04/19 03:23	17060-07-0	
Toluene-d8 (S)	96	%	80-120		1		05/04/19 03:23	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		05/04/19 03:23		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

QC Batch: 583151 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60301142001

METHOD BLANK: 2393045 Matrix: Water
Associated Lab Samples: 60301142001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	14.0	05/08/19 16:33	

LABORATORY CONTROL SAMPLE: 2393046

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	9210	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2393047 2393048

Parameter	Units	60301057001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	ND	10000	10000	9240	9310	92	93	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

QC Batch: 582452 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60301142001, 60301142002

METHOD BLANK: 2390351 Matrix: Water
Associated Lab Samples: 60301142001, 60301142002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	05/04/19 02:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	05/04/19 02:55	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	05/04/19 02:55	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	05/04/19 02:55	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	05/04/19 02:55	
1,2-Dichloroethane	ug/L	0.15J	1.0	0.14	05/04/19 02:55	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	05/04/19 02:55	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	05/04/19 02:55	
2-Hexanone	ug/L	ND	10.0	1.0	05/04/19 02:55	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	05/04/19 02:55	
Acetone	ug/L	ND	10.0	3.3	05/04/19 02:55	
Benzene	ug/L	ND	1.0	0.079	05/04/19 02:55	
Bromodichloromethane	ug/L	ND	1.0	0.17	05/04/19 02:55	
Bromoform	ug/L	ND	1.0	0.21	05/04/19 02:55	
Bromomethane	ug/L	ND	5.0	0.32	05/04/19 02:55	
Carbon disulfide	ug/L	ND	5.0	0.16	05/04/19 02:55	
Carbon tetrachloride	ug/L	ND	1.0	0.084	05/04/19 02:55	
Chlorobenzene	ug/L	ND	1.0	0.13	05/04/19 02:55	
Chloroethane	ug/L	ND	1.0	0.42	05/04/19 02:55	
Chloroform	ug/L	ND	1.0	0.10	05/04/19 02:55	
Chloromethane	ug/L	ND	1.0	0.16	05/04/19 02:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	05/04/19 02:55	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	05/04/19 02:55	
Dibromochloromethane	ug/L	ND	1.0	0.15	05/04/19 02:55	
Ethylbenzene	ug/L	ND	1.0	0.12	05/04/19 02:55	
Methylene Chloride	ug/L	ND	1.0	0.27	05/04/19 02:55	
Styrene	ug/L	ND	1.0	0.15	05/04/19 02:55	
Tetrachloroethene	ug/L	ND	1.0	0.22	05/04/19 02:55	
Toluene	ug/L	ND	1.0	0.14	05/04/19 02:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	05/04/19 02:55	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	05/04/19 02:55	
Trichloroethene	ug/L	0.28J	1.0	0.17	05/04/19 02:55	
Vinyl chloride	ug/L	ND	1.0	0.11	05/04/19 02:55	
Xylene (Total)	ug/L	ND	3.0	0.34	05/04/19 02:55	
1,2-Dichloroethane-d4 (S)	%	103	77-122		05/04/19 02:55	
4-Bromofluorobenzene (S)	%	103	80-120		05/04/19 02:55	
Toluene-d8 (S)	%	99	80-120		05/04/19 02:55	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

LABORATORY CONTROL SAMPLE: 2390352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.0	100	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	17.4	87	71-122	
1,1,2-Trichloroethane	ug/L	20	18.9	94	76-123	
1,1-Dichloroethane	ug/L	20	19.7	98	78-117	
1,1-Dichloroethene	ug/L	20	21.3	107	74-122	
1,2-Dichloroethane	ug/L	20	20.6	103	73-120	
1,2-Dichloropropane	ug/L	20	19.6	98	78-115	
2-Butanone (MEK)	ug/L	100	108	108	54-133	
2-Hexanone	ug/L	100	111	111	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	112	112	62-130	
Acetone	ug/L	100	106	106	54-130	
Benzene	ug/L	20	19.0	95	80-120	
Bromodichloromethane	ug/L	20	19.4	97	78-121	
Bromoform	ug/L	20	18.8	94	62-137	
Bromomethane	ug/L	20	20.2	101	41-145	
Carbon disulfide	ug/L	20	22.9	115	64-119	
Carbon tetrachloride	ug/L	20	20.5	102	77-122	
Chlorobenzene	ug/L	20	19.4	97	80-123	
Chloroethane	ug/L	20	19.6	98	60-146	
Chloroform	ug/L	20	19.9	99	81-116	
Chloromethane	ug/L	20	31.6	158	29-154	L1
cis-1,2-Dichloroethene	ug/L	20	19.7	99	80-120	
cis-1,3-Dichloropropene	ug/L	20	19.7	99	78-118	
Dibromochloromethane	ug/L	20	19.5	98	73-128	
Ethylbenzene	ug/L	20	17.9	90	80-120	
Methylene Chloride	ug/L	20	22.1	111	80-126	
Styrene	ug/L	20	18.8	94	85-120	
Tetrachloroethene	ug/L	20	18.3	91	77-121	
Toluene	ug/L	20	17.6	88	80-120	
trans-1,2-Dichloroethene	ug/L	20	22.2	111	80-120	
trans-1,3-Dichloropropene	ug/L	20	18.0	90	76-123	
Trichloroethene	ug/L	20	22.5	113	80-121	
Vinyl chloride	ug/L	20	19.6	98	46-162	
Xylene (Total)	ug/L	60	54.1	90	80-120	
1,2-Dichloroethane-d4 (S)	%			111	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			98	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

QC Batch: 583067
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60301142001

METHOD BLANK: 2392775 Matrix: Water
Associated Lab Samples: 60301142001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2-Butanone (MEK)	ug/L	1.9J	10.0	1.8	05/07/19 12:45	
1,2-Dichloroethane-d4 (S)	%	99	77-122		05/07/19 12:45	
4-Bromofluorobenzene (S)	%	100	80-120		05/07/19 12:45	
Toluene-d8 (S)	%	99	80-120		05/07/19 12:45	

LABORATORY CONTROL SAMPLE: 2392776

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Butanone (MEK)	ug/L	100	105	105	54-133	
1,2-Dichloroethane-d4 (S)	%			100	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			98	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

QC Batch: 583562 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60301142001

METHOD BLANK: 2394548 Matrix: Water
Associated Lab Samples: 60301142001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	05/09/19 18:08	
Sulfate	mg/L	ND	1.0	0.23	05/09/19 18:08	

LABORATORY CONTROL SAMPLE: 2394549

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2394550 2394551

Parameter	Units	20102693023 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	8.7	5	5	13.8	13.9	103	104	80-120	1	15	
Sulfate	mg/L	33.8	25	25	59.4	59.4	103	103	80-120	0	15	

MATRIX SPIKE SAMPLE: 2394552

Parameter	Units	60301085019 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	26.0	25	50.7	99	80-120	
Sulfate	mg/L	45.0	25	70.8	103	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

QC Batch: 581658 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 60301142001

METHOD BLANK: 2387019 Matrix: Water
Associated Lab Samples: 60301142001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	0.067	04/30/19 08:52	
Nitrogen, Nitrite	mg/L	ND	0.10	0.067	04/30/19 08:52	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	04/30/19 08:52	

LABORATORY CONTROL SAMPLE: 2387020

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	0.95	95	70-130	
Nitrogen, Nitrite	mg/L	1	1.0	104	90-110	
Nitrogen, NO2 plus NO3	mg/L	2	2.0	100	90-110	

MATRIX SPIKE SAMPLE: 2387021

Parameter	Units	60301172001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1.0	1	1.9	87	70-130	
Nitrogen, Nitrite	mg/L	ND	1	1.1	111	90-110	M1
Nitrogen, NO2 plus NO3	mg/L	1.0	2	3.0	99	90-110	

MATRIX SPIKE SAMPLE: 2387023

Parameter	Units	60301164002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	0.55	1	1.5	93	70-130	
Nitrogen, Nitrite	mg/L	ND	1	1.1	111	90-110	M1
Nitrogen, NO2 plus NO3	mg/L	0.55	2	2.6	102	90-110	

SAMPLE DUPLICATE: 2387022

Parameter	Units	60301162002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	0.75	0.74	1	20	
Nitrogen, Nitrite	mg/L	ND	ND		20	
Nitrogen, NO2 plus NO3	mg/L	0.75	0.74	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

QC Batch: 582190 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60301142001

METHOD BLANK: 2389256 Matrix: Water
Associated Lab Samples: 60301142001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	05/02/19 14:06	

LABORATORY CONTROL SAMPLE: 2389257

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.3	106	80-120	

MATRIX SPIKE SAMPLE: 2389258

Parameter	Units	60301319001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	16.0	10	26.9	109	80-120	

SAMPLE DUPLICATE: 2389259

Parameter	Units	60300963009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	14.2	14.2	0	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

QC Batch: 583669 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60301142001

METHOD BLANK: 2394946 Matrix: Water
Associated Lab Samples: 60301142001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	0.36J	1.0	0.29	05/13/19 12:31	

LABORATORY CONTROL SAMPLE: 2394947

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.8	117	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 582452

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 583067

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
H3	Sample was received or analysis requested beyond the recognized method holding time.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL SPRING 2019
Pace Project No.: 60301142

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60301142001	**MW-186-201904**	EPA 3010	583151	EPA 6010	583212
60301142001	**MW-186-201904**	EPA 5030B/8260	582452		
60301142001	**MW-186-201904**	EPA 5030B/8260	583067		
60301142002	**TB-08**	EPA 5030B/8260	582452		
60301142001	**MW-186-201904**	EPA 300.0	583562		
60301142001	**MW-186-201904**	EPA 353.2	581658		
60301142001	**MW-186-201904**	SM 5310C	582190		
60301142001	**MW-186-201904**	SM 5310C	583669		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

WO# : 60301142

60301142

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd. Ste 925 Overland PK KS	
Report To: Tamara House-Knight	Email To:
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State: / County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Haley Anlers	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature): Haley Anlers	Turnaround Date Required: Standard Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	8260 Full List	MEEA, AM20GAX	Metals, Total Iron	Sulfate, Nitrate, Chloride	TDC	DOC	VFA				Lab Sample # / Comments:
MW-186-201904	GW		4/24/19	0855	AG2U	AG3S		12	X	X	X	X	X	X	X		BP3U	BP3N	3DGAH 504hr 001
TB-08									X			2DGAH							002

Haley Anlers

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used: Bubble bags ziplock bag

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 7868 8779 8018

Samples received via: FEDEX UPS Client Courier Pace Courier

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Haley Anlers / Ramboll	4/26/19 1100	Haley Fowler DASI	4/29/19 0845
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

Page 25 of 86

MTJL LAB USE ONLY

Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: T298
Cooler 1 Temp Upon Receipt: 4.2 oC
Cooler 1 Therm Corr. Factor: -0.1 oC
Cooler 1 Corrected Temp: 4.1 oC
Comments:

Trip Blank Received: Y N NA
HCl MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

LAB USE ONLY

Project Manager:

3 D 1 U 2 U 0

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other Benzalkonium chloride

Analyses

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips: 6.0	
Sulfide Present	Y N NA
Lead Acetate Strips:	

60301142

Pace Analytical

Sample Receiving Non-Conformance Form (NCF)

Date: 4/29/2019	Evaluated by:
Client: RAMBOLL	

Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. If COC is incomplete, check applicable issues below and add details where appropriate:

	Collection date/time missing or incorrect		Analyses or analytes: missing or clarification needed		Samples listed on COC do not match samples received (missing, additional, etc.)
	Sample IDs on COC do not match sample labels		Required trip blanks were not received		Required signatures are missing

Comments/Details/Other issues not listed above:

Samples 4/22 HF out of hold.
Nitrate
Collected 4/26/19 0855

3. Sample integrity issues: check applicable issues below and add details where appropriate:

	Samples: Past holding time	X	Samples: Condition needs to be brought to lab personnel's attention (details below)		Preservation: Improper
	Samples: Not field filtered		Containers: Broken or compromised		Temperature: not within acceptance criteria (typically 0-6C)
	Samples: Insufficient volume received		Containers: Incorrect		Temperature: Samples arrived frozen
	Samples: Cooler damaged or compromised		Custody Seals: Missing or compromised on samples, trip blanks or coolers		Vials received with improper headspace
	Samples: contain chlorine or sulfides		Packing Material: Insufficient/Improper		Other:

Comments/Details: 5 other Containers: 3 Trisodium Phosphate vials
2 Benzalkonium chloride vials

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID: MW-12L-20904	Date/Time: 4/29 12:20p	Amount/type pres added: 2.5mL
Preserved by: BP3N	Initial and Final pH: 6.0 / Final 1.0	Lot # of pres added: 9589-34
Sample ID:	Date/Time:	Amount/type pres added: EXP 11/2/20
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:	
PM Initials:	Date/Time:	

Client Comments/Instructions:

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

May 10, 2019

Richard Mannz
Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219

RE: **WHIRLPOOL SPRING/ 60301142**

Pace Workorder: 30176

Dear Richard Mannz:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, April 30, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 05/10/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 12

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 30176 WHIRLPOOL SPRING/ 60301142

Lab ID	Sample ID	Matrix	Date Collected	Date Received
301760001	MW-186-201904	Water	4/26/2019 08:55	4/30/2019 11:45

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 30176 WHIRLPOOL SPRING/ 60301142

Workorder Comments

The container pH for samples 30176 (0001) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 30176 WHIRLPOOL SPRING/ 60301142

Lab ID: **301760001** Date Received: 4/30/2019 11:45 Matrix: Water

Sample ID: **MW-186-201904** Date Collected: 4/26/2019 08:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<2.0**	mg/l	2.0	0.43	10	5/4/2019 08:09	KB	d
Acetic Acid	**88**	mg/l	10	2.8	100	5/4/2019 09:06	KB	d
Propionic Acid	**1500**	mg/l	100	4.0	1000	5/4/2019 10:02	KB	d,B
Butyric Acid	**42**	mg/l	10	1.1	100	5/4/2019 09:06	KB	d
Pyruvic Acid	**36**	mg/l	10	0.50	100	5/4/2019 09:06	KB	d
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**16000**	ug/l	0.50	0.046	1	5/6/2019 09:32	BW	n
Ethane	**0.20**	ug/l	0.10	0.0050	1	5/6/2019 09:32	BW	n
Ethene	**0.82**	ug/l	0.10	0.0040	1	5/6/2019 09:32	BW	n
Acetylene	**<0.50**	ug/l	0.50	0.019	1	5/6/2019 09:32	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 30176 WHIRLPOOL SPRING/ 60301142

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.
B	The analyte was detected in the associated blank.
d	The analyte concentration was determined from a dilution.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 30176 WHIRLPOOL SPRING/ 60301142

QC Batch: DISG/7517 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 301760001

METHOD BLANK: 61037

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n
Acetylene	ug/l	<0.50	0.50	n

LABORATORY CONTROL SAMPLE & LCSD: 61038 61039

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	710	710	95	95	80-120	0.13	20	n
Ethane	ug/l	38	39	40	104	105	80-120	1.3	20	n
Ethene	ug/l	35	36	37	103	104	80-120	0.62	20	n
Acetylene	ug/l	33	36	35	109	106	80-120	3.4	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 30176 WHIRLPOOL SPRING/ 60301142

QC Batch: EDON/4060 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 301760001

METHOD BLANK: 61089

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	B
Butyric Acid	mg/l	<0.10	0.10	
Pyruvic Acid	mg/l	<0.10	0.10	

LABORATORY CONTROL SAMPLE: 61090

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	2.1	106	70-130	
Acetic Acid	mg/l	2	2.1	103	70-130	
Propionic Acid	mg/l	2	2.0	100	70-130	B
Butyric Acid	mg/l	2	2.0	101	70-130	
Pyruvic Acid	mg/l	2	2.1	103	70-130	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 30176 WHIRLPOOL SPRING/ 60301142

QUALITY CONTROL PARAMETER QUALIFIERS

B	The analyte was detected in the associated blank.
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 30176 WHIRLPOOL SPRING/ 60301142

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
301760001	MW-186-201904			AM20GAX	DISG/7517
301760001	MW-186-201904			AM23G	EDON/4060

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Chain of Custody

30176

Pace Analytical®
www.pacelabs.com

Workorder: 60301142 **Workorder Name:** WHIRLPOOL SPRING 2019 **Results Requested By:** 5/13/2019

Report / Invoice To	Subcontract To
Richard Mannz Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665 Email: richard.mannz@pacelabs.com	Pace Energy 220 William Pitt Way Pittsburgh, PA 15238 P.O. sub-9884

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Preserved Containers: Unpreserved					Requested Analysis: M20GAX Methane, Ethane, Ethene,	Requested Analysis: Volatile Fatty Acids											LAB USE ONLY
1	MW-186-201904	4/26/2019 08:55	60301142001	Water	2	3					X	X											
2																							
3																							
4																							
5																							

Transfers	Released By	Date/Time	Received By	Date/Time
1	EBrackett / Pace	4/29/19 1800	Lon PACE	4.30.19 1145
2				
3				

Comments

Cooler Temperature on Receipt 1 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact Y or N

Cooler Receipt Form

Client Name: PAES Project: Whirlpool Spring 2019 Lab Work Order: 30176

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 1007 8246 6987

Custody Seal on Cooler/Box Present: (Yes) No Seals Intact: (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 1°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags			✓	
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?		✓		

Comments:_____

Cooler contents examined/received by: CJ Date: 4-30-19

Project Manager Review: JW Date: 4.30.19

F-PAE-Q-009-rev.01, 3Oct2017

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 06, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on October 23, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60318969001	MW-176-201910	Water	10/22/19 15:55	10/23/19 09:45
60318969002	MW-187-201910	Water	10/22/19 14:25	10/23/19 09:45
60318969003	MW-188-201910	Water	10/22/19 14:05	10/23/19 09:45
60318969004	MW-62R-201910	Water	10/22/19 13:09	10/23/19 09:45
60318969005	MW-68-201910	Water	10/22/19 14:34	10/23/19 09:45
60318969006	MW-40R-201910	Water	10/22/19 16:05	10/23/19 09:45
60318969007	MW-191-201910	Water	10/22/19 12:55	10/23/19 09:45
60318969008	MW-190-201910	Water	10/22/19 14:25	10/23/19 09:45
60318969009	MW-192-201910	Water	10/22/19 14:25	10/23/19 09:45
60318969010	TMW-35-201910	Water	10/22/19 15:50	10/23/19 09:45
60318969011	MW-63R-201910	Water	10/22/19 13:10	10/23/19 09:45
60318969012	MW-39R-201910	Water	10/22/19 14:30	10/23/19 09:45
60318969013	EB-01-201910	Water	10/22/19 16:50	10/23/19 09:45
60318969014	TB-01-201910	Water	10/22/19 17:05	10/23/19 09:45
60318969015	MW-195-201910	Water	10/22/19 16:20	10/23/19 09:45
60318969016	TMW-29-201910	Water	10/22/19 14:30	10/23/19 09:45
60318969017	TMW-20-201910	Water	10/22/19 14:05	10/23/19 09:45
60318969018	TB-02-201910	Water	10/22/19 17:15	10/23/19 09:45
60318969019	ITMW-7-201910	Water	10/22/19 17:15	10/23/19 06:20
60318969020	TMW-21-201910	Water	10/22/19 16:00	10/23/19 06:20
60318969021	TMW-11-201910	Water	10/22/19 13:45	10/23/19 06:20
60318969022	TMW-10-201910	Water	10/22/19 14:05	10/23/19 06:20
60318969023	MW-89-201910	Water	10/22/19 16:30	10/23/19 06:20

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60318969001	MW-176-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969002	MW-187-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969003	MW-188-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969004	MW-62R-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969005	MW-68-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969006	MW-40R-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969007	MW-191-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969008	MW-190-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969009	MW-192-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969010	TMW-35-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969011	MW-63R-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969012	MW-39R-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969013	EB-01-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969014	TB-01-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969015	MW-195-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969016	TMW-29-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969017	TMW-20-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969018	TB-02-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969019	ITMW-7-201910	EPA 5030B/8260	PGH	38	PASI-K
60318969020	TMW-21-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60318969021	TMW-11-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60318969022	TMW-10-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	AJS	3	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60318969023	**MW-89-201910**	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
4 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
23 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
3 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
4 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 620217

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60318275001,60318978002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2529352)
  - Chloride
  - Sulfate
- MS (Lab ID: 2529354)
  - Sulfate
- MSD (Lab ID: 2529353)
  - Chloride
  - Sulfate

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 unpres
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
4 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 617944

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60318969021,60319009002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2521248)
  - Nitrogen, Nitrite

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Method: **SM 5310C**
Description: 5310C TOC
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
4 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 619144

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60319126003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2525749)
  - Total Organic Carbon

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Method: **SM 5310C**
Description: 5310C Diss. Organic Carbon LF
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
3 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 619520

B: Analyte was detected in the associated method blank.
- BLANK for HBN 619520 [WETA/631 (Lab ID: 2526889)
  - Dissolved Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-21-201910 **Lab ID: 60318969020** Collected: 10/22/19 16:00 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**76100**	ug/L	50.0	14.0	1	10/24/19 10:55	10/25/19 14:00	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**202**	ug/L	10.0	3.3	1		11/01/19 00:10	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 00:10	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 00:10	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 00:10	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 00:10	74-83-9	
2-Butanone (MEK)	**309**	ug/L	10.0	0.70	1		11/01/19 00:10	78-93-3	
Carbon disulfide	**0.42J**	ug/L	5.0	0.16	1		11/01/19 00:10	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 00:10	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 00:10	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 00:10	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 00:10	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 00:10	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 00:10	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 00:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 00:10	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 00:10	75-35-4	
cis-1,2-Dichloroethene	**13.5**	ug/L	1.0	0.17	1		11/01/19 00:10	156-59-2	
trans-1,2-Dichloroethene	**0.19J**	ug/L	1.0	0.17	1		11/01/19 00:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 00:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 00:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 00:10	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 00:10	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 00:10	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 00:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.1J**	ug/L	10.0	0.56	1		11/01/19 00:10	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 00:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 00:10	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 00:10	127-18-4	
Toluene	**53.2**	ug/L	1.0	0.14	1		11/01/19 00:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 00:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 00:10	79-00-5	
Trichloroethene	**21.8**	ug/L	1.0	0.17	1		11/01/19 00:10	79-01-6	
Vinyl chloride	**1.9**	ug/L	1.0	0.11	1		11/01/19 00:10	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 00:10	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/01/19 00:10	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/01/19 00:10	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/01/19 00:10	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 00:10		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**204**	mg/L	50.0	11.0	50		11/05/19 20:57	16887-00-6	
Sulfate	**15.3**	mg/L	2.0	0.46	2		11/06/19 14:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-21-201910 **Lab ID: 60318969020** Collected: 10/22/19 16:00 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.15**	mg/L	0.10	0.038	1		10/23/19 17:53		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/23/19 17:53	14797-55-8	
Nitrogen, Nitrite	**0.17**	mg/L	0.10	0.067	1		10/23/19 17:53	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**1130**	mg/L	100	29.0	100		10/31/19 17:24	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**883**	mg/L	100	29.0	100		11/01/19 00:45		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-10-201910 **Lab ID: 60318969022** Collected: 10/22/19 14:05 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**22100**	ug/L	50.0	14.0	1	10/24/19 10:55	10/25/19 14:11	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 23:27	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/31/19 23:27	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 23:27	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 23:27	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 23:27	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 23:27	78-93-3	
Carbon disulfide	**0.35J**	ug/L	5.0	0.16	1		10/31/19 23:27	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 23:27	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 23:27	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 23:27	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 23:27	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 23:27	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 23:27	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 23:27	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 23:27	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:27	75-35-4	
cis-1,2-Dichloroethene	**1.4**	ug/L	1.0	0.17	1		10/31/19 23:27	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/31/19 23:27	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 23:27	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 23:27	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 23:27	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 23:27	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 23:27	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 23:27	75-09-2	
4-Methyl-2-pentanone (MIBK)	**0.78J**	ug/L	10.0	0.56	1		10/31/19 23:27	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 23:27	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 23:27	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 23:27	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/31/19 23:27	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 23:27	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 23:27	79-00-5	
Trichloroethene	**8.6**	ug/L	1.0	0.17	1		10/31/19 23:27	79-01-6	
Vinyl chloride	**2.4**	ug/L	1.0	0.11	1		10/31/19 23:27	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 23:27	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	80-120		1		10/31/19 23:27	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/31/19 23:27	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 23:27	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 23:27		
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D								
Sulfide, Total	ND	mg/L	0.050	0.039	1		10/28/19 10:50	18496-25-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Sample: TMW-10-201910 **Lab ID: 60318969022** Collected: 10/22/19 14:05 Received: 10/23/19 06:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**198**	mg/L	10.0	2.2	10		11/05/19 21:47	16887-00-6	
Sulfate	**1.1**	mg/L	1.0	0.23	1		11/06/19 15:28	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.038	1		10/23/19 17:51		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/23/19 17:51	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/23/19 17:51	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**16.1**	mg/L	5.0	1.4	5		10/31/19 17:51	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**16.4**	mg/L	5.0	1.4	5		11/01/19 01:13		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 618015 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

METHOD BLANK: 2521575 Matrix: Water
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	14.0	10/25/19 12:40	

LABORATORY CONTROL SAMPLE: 2521576

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	10000	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2521577 2521578

Parameter	Units	60319061001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	7570	10000	10000	17000	17400	94	99	75-125	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 618900 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60318969001, 60318969002, 60318969003, 60318969004, 60318969005, 60318969006, 60318969007, 60318969008

METHOD BLANK: 2524965 Matrix: Water
Associated Lab Samples: 60318969001, 60318969002, 60318969003, 60318969004, 60318969005, 60318969006, 60318969007, 60318969008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	10/31/19 02:34	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	10/31/19 02:34	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	10/31/19 02:34	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	10/31/19 02:34	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	10/31/19 02:34	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	10/31/19 02:34	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	10/31/19 02:34	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	10/31/19 02:34	
2-Hexanone	ug/L	ND	10.0	1.0	10/31/19 02:34	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	10/31/19 02:34	
Acetone	ug/L	ND	10.0	3.3	10/31/19 02:34	
Benzene	ug/L	ND	1.0	0.079	10/31/19 02:34	
Bromodichloromethane	ug/L	ND	1.0	0.17	10/31/19 02:34	
Bromoform	ug/L	ND	1.0	0.21	10/31/19 02:34	
Bromomethane	ug/L	ND	5.0	0.32	10/31/19 02:34	
Carbon disulfide	ug/L	ND	5.0	0.16	10/31/19 02:34	
Carbon tetrachloride	ug/L	ND	1.0	0.084	10/31/19 02:34	
Chlorobenzene	ug/L	ND	1.0	0.13	10/31/19 02:34	
Chloroethane	ug/L	ND	1.0	0.42	10/31/19 02:34	
Chloroform	ug/L	ND	1.0	0.10	10/31/19 02:34	
Chloromethane	ug/L	ND	1.0	0.16	10/31/19 02:34	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 02:34	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	10/31/19 02:34	
Dibromochloromethane	ug/L	ND	1.0	0.15	10/31/19 02:34	
Ethylbenzene	ug/L	ND	1.0	0.12	10/31/19 02:34	
Methylene Chloride	ug/L	ND	1.0	0.27	10/31/19 02:34	
Styrene	ug/L	ND	1.0	0.15	10/31/19 02:34	
Tetrachloroethene	ug/L	ND	1.0	0.22	10/31/19 02:34	
Toluene	ug/L	ND	1.0	0.14	10/31/19 02:34	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 02:34	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	10/31/19 02:34	
Trichloroethene	ug/L	ND	1.0	0.17	10/31/19 02:34	
Vinyl chloride	ug/L	ND	1.0	0.11	10/31/19 02:34	
Xylene (Total)	ug/L	ND	3.0	0.34	10/31/19 02:34	
1,2-Dichloroethane-d4 (S)	%	102	77-122		10/31/19 02:34	
4-Bromofluorobenzene (S)	%	98	80-120		10/31/19 02:34	
Toluene-d8 (S)	%	99	80-120		10/31/19 02:34	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

LABORATORY CONTROL SAMPLE: 2524966

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.8	94	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	18.5	93	71-122	
1,1,2-Trichloroethane	ug/L	20	19.5	97	76-123	
1,1-Dichloroethane	ug/L	20	19.1	95	78-117	
1,1-Dichloroethene	ug/L	20	21.0	105	74-122	
1,2-Dichloroethane	ug/L	20	18.9	94	73-120	
1,2-Dichloropropane	ug/L	20	19.1	96	78-115	
2-Butanone (MEK)	ug/L	100	92.5	92	54-133	
2-Hexanone	ug/L	100	93.5	94	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	96.5	96	62-130	
Acetone	ug/L	100	82.4	82	54-130	
Benzene	ug/L	20	19.0	95	80-120	
Bromodichloromethane	ug/L	20	18.0	90	78-121	
Bromoform	ug/L	20	16.9	84	62-137	
Bromomethane	ug/L	20	18.6	93	41-145	
Carbon disulfide	ug/L	20	19.6	98	64-119	
Carbon tetrachloride	ug/L	20	19.2	96	77-122	
Chlorobenzene	ug/L	20	18.8	94	80-123	
Chloroethane	ug/L	20	20.5	103	60-146	
Chloroform	ug/L	20	19.2	96	81-116	
Chloromethane	ug/L	20	18.3	91	29-154	
cis-1,2-Dichloroethene	ug/L	20	18.6	93	80-120	
cis-1,3-Dichloropropene	ug/L	20	18.4	92	78-118	
Dibromochloromethane	ug/L	20	17.4	87	73-128	
Ethylbenzene	ug/L	20	18.9	95	80-120	
Methylene Chloride	ug/L	20	20.6	103	80-126	
Styrene	ug/L	20	18.8	94	85-120	
Tetrachloroethene	ug/L	20	19.0	95	77-121	
Toluene	ug/L	20	18.5	93	80-120	
trans-1,2-Dichloroethene	ug/L	20	18.4	92	80-120	
trans-1,3-Dichloropropene	ug/L	20	16.5	83	76-123	
Trichloroethene	ug/L	20	20.6	103	80-121	
Vinyl chloride	ug/L	20	19.5	97	46-162	
Xylene (Total)	ug/L	60	56.2	94	80-120	
1,2-Dichloroethane-d4 (S)	%			101	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2524967 2524968

Parameter	Units	60318969003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	20.0	19.7	100	99	67-137	1	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	18.0	17.7	90	89	54-134	2	33	
1,1,2-Trichloroethane	ug/L	ND	20	20	18.6	17.3	93	86	59-131	8	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2524967			2524968							
Parameter	Units	60318969003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	19.8	19.6	99	98	63-134	1	31	
1,1-Dichloroethene	ug/L	ND	20	20	22.2	22.8	111	114	64-140	3	37	
1,2-Dichloroethane	ug/L	ND	20	20	18.4	17.7	92	88	42-140	4	35	
1,2-Dichloropropane	ug/L	ND	20	20	18.9	18.9	95	94	60-132	0	30	
2-Butanone (MEK)	ug/L	ND	100	100	82.2	77.5	82	78	44-132	6	34	
2-Hexanone	ug/L	ND	100	100	86.6	76.9	87	77	47-134	12	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	90.7	81.6	91	82	50-136	11	34	
Acetone	ug/L	ND	100	100	77.3	69.1	77	69	35-129	11	35	
Benzene	ug/L	ND	20	20	19.2	19.3	96	96	42-137	1	35	
Bromodichloromethane	ug/L	ND	20	20	17.8	17.9	89	90	61-130	1	32	
Bromoform	ug/L	ND	20	20	16.2	15.5	81	78	53-128	5	32	
Bromomethane	ug/L	ND	20	20	19.3	19.0	97	95	33-148	1	42	
Carbon disulfide	ug/L	0.19J	20	20	19.2	19.7	95	98	52-138	3	37	
Carbon tetrachloride	ug/L	ND	20	20	20.1	20.5	101	102	65-143	2	31	
Chlorobenzene	ug/L	ND	20	20	19.2	19.3	96	97	63-131	1	30	
Chloroethane	ug/L	ND	20	20	19.3	24.7	97	123	51-153	24	39	
Chloroform	ug/L	ND	20	20	19.9	19.5	100	98	62-129	2	32	
Chloromethane	ug/L	ND	20	20	20.7	19.9	103	99	16-169	4	59	
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.8	18.7	94	93	43-152	1	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	16.1	15.6	80	78	58-127	3	31	
Dibromochloromethane	ug/L	ND	20	20	17.3	16.3	87	82	54-134	6	33	
Ethylbenzene	ug/L	ND	20	20	19.1	18.7	95	93	44-143	2	36	
Methylene Chloride	ug/L	ND	20	20	20.9	20.7	104	104	65-135	1	33	
Styrene	ug/L	ND	20	20	18.0	18.1	90	90	49-141	0	37	
Tetrachloroethene	ug/L	ND	20	20	18.4	17.8	92	89	62-134	3	33	
Toluene	ug/L	ND	20	20	19.2	19.0	96	95	45-142	1	36	
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.6	18.5	98	92	65-133	6	32	
trans-1,3-Dichloropropene	ug/L	ND	20	20	14.2	13.8	71	69	56-127	3	28	
Trichloroethene	ug/L	ND	20	20	20.8	21.5	104	107	61-148	3	25	
Vinyl chloride	ug/L	ND	20	20	20.9	20.9	104	104	35-185	0	29	
Xylene (Total)	ug/L	ND	60	60	56.8	56.6	95	94	33-149	0	35	
1,2-Dichloroethane-d4 (S)	%						103	97	77-122			
4-Bromofluorobenzene (S)	%						100	101	80-120			
Toluene-d8 (S)	%						102	100	80-120			
Preservation pH		1.0			1.0	1.0				0		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2524969			2524970							
Parameter	Units	60318969006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	20.4	20.2	102	101	67-137	1	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	18.2	19.7	91	98	54-134	8	33	
1,1,2-Trichloroethane	ug/L	ND	20	20	19.1	18.7	96	93	59-131	2	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2524969 2524970

Parameter	Units	60318969006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	19.9	19.6	100	98	63-134	1	31	
1,1-Dichloroethene	ug/L	ND	20	20	22.3	21.6	111	108	64-140	3	37	
1,2-Dichloroethane	ug/L	ND	20	20	18.3	18.2	92	91	42-140	1	35	
1,2-Dichloropropane	ug/L	ND	20	20	19.9	19.3	100	96	60-132	3	30	
2-Butanone (MEK)	ug/L	ND	100	100	86.8	86.5	87	86	44-132	0	34	
2-Hexanone	ug/L	ND	100	100	87.1	88.1	87	88	47-134	1	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	89.1	91.5	89	91	50-136	3	34	
Acetone	ug/L	ND	100	100	80.1	77.4	80	77	35-129	3	35	
Benzene	ug/L	ND	20	20	19.5	19.4	98	97	42-137	1	35	
Bromodichloromethane	ug/L	ND	20	20	18.2	17.7	91	88	61-130	3	32	
Bromoform	ug/L	ND	20	20	16.3	16.2	81	81	53-128	1	32	
Bromomethane	ug/L	ND	20	20	21.8	21.4	109	107	33-148	2	42	
Carbon disulfide	ug/L	ND	20	20	19.2	18.5	96	93	52-138	4	37	
Carbon tetrachloride	ug/L	ND	20	20	20.4	20.4	102	102	65-143	0	31	
Chlorobenzene	ug/L	ND	20	20	19.6	19.2	98	96	63-131	2	30	
Chloroethane	ug/L	ND	20	20	21.1	21.4	106	107	51-153	1	39	
Chloroform	ug/L	ND	20	20	20.1	19.8	101	99	62-129	1	32	
Chloromethane	ug/L	ND	20	20	19.3	17.7	97	89	16-169	9	59	
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.8	18.0	94	90	43-152	5	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	16.1	16.3	81	82	58-127	1	31	
Dibromochloromethane	ug/L	ND	20	20	17.3	16.9	87	85	54-134	2	33	
Ethylbenzene	ug/L	ND	20	20	19.6	19.0	98	95	44-143	3	36	
Methylene Chloride	ug/L	ND	20	20	20.2	20.9	101	104	65-135	3	33	
Styrene	ug/L	ND	20	20	18.6	18.0	93	90	49-141	3	37	
Tetrachloroethene	ug/L	ND	20	20	18.4	17.9	92	89	62-134	3	33	
Toluene	ug/L	ND	20	20	19.5	19.0	97	95	45-142	2	36	
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.5	18.6	97	93	65-133	5	32	
trans-1,3-Dichloropropene	ug/L	ND	20	20	14.7	14.7	74	74	56-127	0	28	
Trichloroethene	ug/L	ND	20	20	21.5	21.1	108	106	61-148	2	25	
Vinyl chloride	ug/L	ND	20	20	21.2	20.6	106	103	35-185	3	29	
Xylene (Total)	ug/L	ND	60	60	58.5	56.5	97	94	33-149	3	35	
1,2-Dichloroethane-d4 (S)	%						100	101	77-122			
4-Bromofluorobenzene (S)	%						99	100	80-120			
Toluene-d8 (S)	%						101	100	80-120			
Preservation pH		1.0			1.0	1.0				0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 619494 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60318969001, 60318969009, 60318969010, 60318969011, 60318969012, 60318969013, 60318969014, 60318969015, 60318969016, 60318969017, 60318969018, 60318969019, 60318969020, 60318969021, 60318969022, 60318969023

METHOD BLANK: 2526821 Matrix: Water
Associated Lab Samples: 60318969001, 60318969009, 60318969010, 60318969011, 60318969012, 60318969013, 60318969014, 60318969015, 60318969016, 60318969017, 60318969018, 60318969019, 60318969020, 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	10/31/19 20:37	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	10/31/19 20:37	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	10/31/19 20:37	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	10/31/19 20:37	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	10/31/19 20:37	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	10/31/19 20:37	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	10/31/19 20:37	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	10/31/19 20:37	
2-Hexanone	ug/L	ND	10.0	1.0	10/31/19 20:37	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	10/31/19 20:37	
Acetone	ug/L	ND	10.0	3.3	10/31/19 20:37	
Benzene	ug/L	ND	1.0	0.079	10/31/19 20:37	
Bromodichloromethane	ug/L	ND	1.0	0.17	10/31/19 20:37	
Bromoform	ug/L	ND	1.0	0.21	10/31/19 20:37	
Bromomethane	ug/L	ND	5.0	0.32	10/31/19 20:37	
Carbon disulfide	ug/L	ND	5.0	0.16	10/31/19 20:37	
Carbon tetrachloride	ug/L	ND	1.0	0.084	10/31/19 20:37	
Chlorobenzene	ug/L	ND	1.0	0.13	10/31/19 20:37	
Chloroethane	ug/L	ND	1.0	0.42	10/31/19 20:37	
Chloroform	ug/L	ND	1.0	0.10	10/31/19 20:37	
Chloromethane	ug/L	ND	1.0	0.16	10/31/19 20:37	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 20:37	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	10/31/19 20:37	
Dibromochloromethane	ug/L	ND	1.0	0.15	10/31/19 20:37	
Ethylbenzene	ug/L	ND	1.0	0.12	10/31/19 20:37	
Methylene Chloride	ug/L	ND	1.0	0.27	10/31/19 20:37	
Styrene	ug/L	ND	1.0	0.15	10/31/19 20:37	
Tetrachloroethene	ug/L	ND	1.0	0.22	10/31/19 20:37	
Toluene	ug/L	ND	1.0	0.14	10/31/19 20:37	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 20:37	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	10/31/19 20:37	
Trichloroethene	ug/L	ND	1.0	0.17	10/31/19 20:37	
Vinyl chloride	ug/L	ND	1.0	0.11	10/31/19 20:37	
Xylene (Total)	ug/L	ND	3.0	0.34	10/31/19 20:37	
1,2-Dichloroethane-d4 (S)	%	101	77-122		10/31/19 20:37	
4-Bromofluorobenzene (S)	%	99	80-120		10/31/19 20:37	
Toluene-d8 (S)	%	102	80-120		10/31/19 20:37	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

LABORATORY CONTROL SAMPLE: 2526822

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.9	99	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	18.4	92	71-122	
1,1,2-Trichloroethane	ug/L	20	19.5	97	76-123	
1,1-Dichloroethane	ug/L	20	20.7	104	78-117	
1,1-Dichloroethene	ug/L	20	22.6	113	74-122	
1,2-Dichloroethane	ug/L	20	19.9	100	73-120	
1,2-Dichloropropane	ug/L	20	20.3	102	78-115	
2-Butanone (MEK)	ug/L	100	98.6	99	54-133	
2-Hexanone	ug/L	100	94.1	94	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	97.3	97	62-130	
Acetone	ug/L	100	99.0	99	54-130	
Benzene	ug/L	20	19.6	98	80-120	
Bromodichloromethane	ug/L	20	18.3	92	78-121	
Bromoform	ug/L	20	16.0	80	62-137	
Bromomethane	ug/L	20	23.0	115	41-145	
Carbon disulfide	ug/L	20	20.5	102	64-119	
Carbon tetrachloride	ug/L	20	20.4	102	77-122	
Chlorobenzene	ug/L	20	19.9	100	80-123	
Chloroethane	ug/L	20	21.5	107	60-146	
Chloroform	ug/L	20	21.0	105	81-116	
Chloromethane	ug/L	20	22.6	113	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.9	99	80-120	
cis-1,3-Dichloropropene	ug/L	20	18.9	95	78-118	
Dibromochloromethane	ug/L	20	17.7	88	73-128	
Ethylbenzene	ug/L	20	19.7	98	80-120	
Methylene Chloride	ug/L	20	21.4	107	80-126	
Styrene	ug/L	20	19.9	100	85-120	
Tetrachloroethene	ug/L	20	19.1	95	77-121	
Toluene	ug/L	20	19.2	96	80-120	
trans-1,2-Dichloroethene	ug/L	20	21.6	108	80-120	
trans-1,3-Dichloropropene	ug/L	20	17.0	85	76-123	
Trichloroethene	ug/L	20	22.4	112	80-121	
Vinyl chloride	ug/L	20	21.4	107	46-162	
Xylene (Total)	ug/L	60	60.5	101	80-120	
1,2-Dichloroethane-d4 (S)	%			103	77-122	
4-Bromofluorobenzene (S)	%			98	80-120	
Toluene-d8 (S)	%			98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2526823 2526824

Parameter	Units	60318969009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	21.8	20.7	109	104	67-137	5	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.1	19.6	101	98	54-134	3	33	
1,1,2-Trichloroethane	ug/L	ND	20	20	20.2	19.5	101	98	59-131	3	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2526823 2526824

Parameter	Units	60318969009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	21.3	21.1	106	105	63-134	1	31	
1,1-Dichloroethene	ug/L	ND	20	20	24.0	24.2	120	121	64-140	1	37	
1,2-Dichloroethane	ug/L	ND	20	20	19.8	19.0	98	94	42-140	4	35	
1,2-Dichloropropane	ug/L	ND	20	20	20.2	20.0	101	100	60-132	1	30	
2-Butanone (MEK)	ug/L	ND	100	100	97.9	95.8	98	96	44-132	2	34	
2-Hexanone	ug/L	ND	100	100	96.5	93.5	96	94	47-134	3	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	101	97.5	101	98	50-136	3	34	
Acetone	ug/L	ND	100	100	90.6	82.3	91	82	35-129	10	35	
Benzene	ug/L	ND	20	20	20.6	20.4	103	102	42-137	1	35	
Bromodichloromethane	ug/L	ND	20	20	19.0	18.6	95	93	61-130	2	32	
Bromoform	ug/L	ND	20	20	16.6	16.9	83	84	53-128	2	32	
Bromomethane	ug/L	ND	20	20	19.4	21.8	97	109	33-148	12	42	
Carbon disulfide	ug/L	ND	20	20	21.8	22.0	109	110	52-138	1	37	
Carbon tetrachloride	ug/L	ND	20	20	22.0	21.3	110	106	65-143	3	31	
Chlorobenzene	ug/L	ND	20	20	20.4	19.7	102	98	63-131	4	30	
Chloroethane	ug/L	ND	20	20	22.7	23.5	113	117	51-153	3	39	
Chloroform	ug/L	ND	20	20	21.6	21.1	108	106	62-129	2	32	
Chloromethane	ug/L	ND	20	20	22.0	23.7	110	119	16-169	7	59	
cis-1,2-Dichloroethene	ug/L	ND	20	20	20.5	19.9	103	100	43-152	3	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	18.8	18.6	94	93	58-127	1	31	
Dibromochloromethane	ug/L	ND	20	20	18.0	17.4	90	87	54-134	4	33	
Ethylbenzene	ug/L	ND	20	20	19.9	19.7	100	99	44-143	1	36	
Methylene Chloride	ug/L	ND	20	20	21.6	21.6	108	108	65-135	0	33	
Styrene	ug/L	ND	20	20	18.8	18.5	94	93	49-141	2	37	
Tetrachloroethene	ug/L	ND	20	20	20.0	19.2	100	96	62-134	4	33	
Toluene	ug/L	ND	20	20	20.4	19.4	102	97	45-142	5	36	
trans-1,2-Dichloroethene	ug/L	ND	20	20	21.5	20.4	108	102	65-133	5	32	
trans-1,3-Dichloropropene	ug/L	ND	20	20	16.5	16.5	83	83	56-127	0	28	
Trichloroethene	ug/L	ND	20	20	23.7	22.1	119	111	61-148	7	25	
Vinyl chloride	ug/L	ND	20	20	23.3	23.0	116	115	35-185	1	29	
Xylene (Total)	ug/L	ND	60	60	60.7	59.5	101	99	33-149	2	35	
1,2-Dichloroethane-d4 (S)	%						106	105	77-122			
4-Bromofluorobenzene (S)	%						98	98	80-120			
Toluene-d8 (S)	%						100	100	80-120			
Preservation pH		1.0			1.0	1.0				0		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2526825 2526826

Parameter	Units	60318969015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	ND	20	20	21.6	20.4	108	102	67-137	5	31	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	19.7	20.4	98	102	54-134	4	33	
1,1,2-Trichloroethane	ug/L	ND	20	20	19.2	19.3	96	97	59-131	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2526825 2526826

Parameter	Units	60318969015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/L	ND	20	20	21.0	20.2	105	101	63-134	4	31	
1,1-Dichloroethene	ug/L	ND	20	20	23.8	23.2	119	116	64-140	3	37	
1,2-Dichloroethane	ug/L	ND	20	20	19.4	19.0	97	95	42-140	2	35	
1,2-Dichloropropane	ug/L	ND	20	20	19.8	19.9	99	100	60-132	0	30	
2-Butanone (MEK)	ug/L	ND	100	100	96.0	89.8	96	90	44-132	7	34	
2-Hexanone	ug/L	ND	100	100	93.5	92.5	94	93	47-134	1	33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	99.3	96.3	99	96	50-136	3	34	
Acetone	ug/L	ND	100	100	91.4	77.2	91	77	35-129	17	35	
Benzene	ug/L	ND	20	20	20.1	19.9	101	100	42-137	1	35	
Bromodichloromethane	ug/L	ND	20	20	18.5	18.0	92	90	61-130	2	32	
Bromoform	ug/L	ND	20	20	16.6	15.9	83	79	53-128	4	32	
Bromomethane	ug/L	ND	20	20	22.1	22.4	110	112	33-148	1	42	
Carbon disulfide	ug/L	ND	20	20	21.2	21.1	106	105	52-138	0	37	
Carbon tetrachloride	ug/L	ND	20	20	21.2	21.2	106	106	65-143	0	31	
Chlorobenzene	ug/L	ND	20	20	19.9	19.5	99	97	63-131	2	30	
Chloroethane	ug/L	ND	20	20	23.2	21.1	116	106	51-153	9	39	
Chloroform	ug/L	ND	20	20	21.3	20.4	106	102	62-129	4	32	
Chloromethane	ug/L	ND	20	20	23.0	19.9	115	99	16-169	15	59	
cis-1,2-Dichloroethene	ug/L	ND	20	20	20.3	19.3	102	97	43-152	5	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	18.6	18.6	93	93	58-127	0	31	
Dibromochloromethane	ug/L	ND	20	20	16.7	17.4	83	87	54-134	4	33	
Ethylbenzene	ug/L	ND	20	20	19.4	19.7	97	99	44-143	2	36	
Methylene Chloride	ug/L	ND	20	20	21.7	20.7	108	104	65-135	4	33	
Styrene	ug/L	ND	20	20	14.6	14.8	73	74	49-141	1	37	
Tetrachloroethene	ug/L	ND	20	20	18.8	19.2	94	96	62-134	2	33	
Toluene	ug/L	ND	20	20	19.5	19.9	97	99	45-142	2	36	
trans-1,2-Dichloroethene	ug/L	ND	20	20	21.2	18.8	106	94	65-133	12	32	
trans-1,3-Dichloropropene	ug/L	ND	20	20	16.2	16.5	81	82	56-127	2	28	
Trichloroethene	ug/L	ND	20	20	22.2	22.1	111	111	61-148	0	25	
Vinyl chloride	ug/L	ND	20	20	23.4	22.2	117	111	35-185	5	29	
Xylene (Total)	ug/L	ND	60	60	59.9	58.3	100	97	33-149	3	35	
1,2-Dichloroethane-d4 (S)	%						106	100	77-122			
4-Bromofluorobenzene (S)	%						96	102	80-120			
Toluene-d8 (S)	%						100	100	80-120			
Preservation pH		1.0			1.0	1.0				0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 618512 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60318969021, 60318969022, 60318969023

METHOD BLANK: 2524101 Matrix: Water
Associated Lab Samples: 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	0.039	10/28/19 10:44	

LABORATORY CONTROL SAMPLE: 2524102

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.49	99	80-120	

MATRIX SPIKE SAMPLE: 2524103

Parameter	Units	60318813003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.5	0.50	100	75-125	

SAMPLE DUPLICATE: 2524104

Parameter	Units	60318813005 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

SAMPLE DUPLICATE: 2524105

Parameter	Units	60318969023 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 620217 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

METHOD BLANK: 2529350 Matrix: Water
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	11/05/19 16:48	
Sulfate	mg/L	ND	1.0	0.23	11/05/19 16:48	

METHOD BLANK: 2531552 Matrix: Water
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	11/06/19 10:25	
Sulfate	mg/L	ND	1.0	0.23	11/06/19 10:25	

LABORATORY CONTROL SAMPLE: 2529351

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	98	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

LABORATORY CONTROL SAMPLE: 2531553

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2529352 2529353

Parameter	Units	60318275001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	146	2000	2000	6510	6000	318	293	80-120	8	15	M1
Sulfate	mg/L	1750	2000	2000	7630	7570	294	291	80-120	1	15	M1

MATRIX SPIKE SAMPLE: 2529354

Parameter	Units	60318978002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.3	5	6.1	96	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

MATRIX SPIKE SAMPLE: 2529354

Parameter	Units	60318978002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	54.7	5	58.0	68	80-120	M1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 617944 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

METHOD BLANK: 2521244 Matrix: Water
Associated Lab Samples: 60318969020, 60318969021, 60318969022, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	0.067	10/23/19 17:32	
Nitrogen, Nitrite	mg/L	ND	0.10	0.067	10/23/19 17:32	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	10/23/19 17:32	

LABORATORY CONTROL SAMPLE: 2521245

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	0.91	91	70-130	
Nitrogen, Nitrite	mg/L	1	1.0	102	90-110	
Nitrogen, NO2 plus NO3	mg/L	2	1.9	97	90-110	

MATRIX SPIKE SAMPLE: 2521246

Parameter	Units	60319009002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	1	0.92	92	70-130	
Nitrogen, Nitrite	mg/L	1.4	1	2.4	109	90-110	
Nitrogen, NO2 plus NO3	mg/L	1.3	2	3.4	101	90-110	

MATRIX SPIKE SAMPLE: 2521248

Parameter	Units	60318969021 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	1	0.93	93	70-130	
Nitrogen, Nitrite	mg/L	ND	1	1.1	112	90-110	M1
Nitrogen, NO2 plus NO3	mg/L	ND	2	2.0	102	90-110	

SAMPLE DUPLICATE: 2521247

Parameter	Units	60319006001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	31.3	30.6	2	20	
Nitrogen, Nitrite	mg/L	1.4	1.4	2	20	
Nitrogen, NO2 plus NO3	mg/L	32.7	32.0	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 619144
QC Batch Method: SM 5310C
Analysis Method: SM 5310C
Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60318969021, 60318969023

METHOD BLANK: 2525747 Matrix: Water
Associated Lab Samples: 60318969021, 60318969023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	10/30/19 10:29	

LABORATORY CONTROL SAMPLE: 2525748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.4	108	80-120	

MATRIX SPIKE SAMPLE: 2525749

Parameter	Units	60319126003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	1.9	5	3.8	39	80-120	M1

SAMPLE DUPLICATE: 2525750

Parameter	Units	60319556002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	51.4	48.0	7	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 619519 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60318969020, 60318969022

METHOD BLANK: 2526884 Matrix: Water
Associated Lab Samples: 60318969020, 60318969022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	10/31/19 16:17	

LABORATORY CONTROL SAMPLE: 2526885

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.5	110	80-120	

MATRIX SPIKE SAMPLE: 2526886

Parameter	Units	60319115044 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	212	125	345	106	80-120	

SAMPLE DUPLICATE: 2526887

Parameter	Units	60318969020 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	1130	1130	0	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

QC Batch: 619520 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60318969020, 60318969021, 60318969022

METHOD BLANK: 2526889 Matrix: Water
Associated Lab Samples: 60318969020, 60318969021, 60318969022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	0.30J	1.0	0.29	10/31/19 22:45	

LABORATORY CONTROL SAMPLE: 2526890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.5	111	80-120	

MATRIX SPIKE SAMPLE: 2526891

Parameter	Units	60319115044 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	203	125	329	101	80-120	

SAMPLE DUPLICATE: 2526892

Parameter	Units	60319115061 Result	Dup Result	RPD	Max RPD	Qualifiers
Dissolved Organic Carbon	mg/L	0.81J	0.78J		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60318969020	**TMW-21-201910**	EPA 3010	618015	EPA 6010	618156
60318969021	**TMW-11-201910**	EPA 3010	618015	EPA 6010	618156
60318969022	**TMW-10-201910**	EPA 3010	618015	EPA 6010	618156
60318969023	**MW-89-201910**	EPA 3010	618015	EPA 6010	618156
60318969001	**MW-176-201910**	EPA 5030B/8260	618900		
60318969001	**MW-176-201910**	EPA 5030B/8260	619494		
60318969002	**MW-187-201910**	EPA 5030B/8260	618900		
60318969003	**MW-188-201910**	EPA 5030B/8260	618900		
60318969004	**MW-62R-201910**	EPA 5030B/8260	618900		
60318969005	**MW-68-201910**	EPA 5030B/8260	618900		
60318969006	**MW-40R-201910**	EPA 5030B/8260	618900		
60318969007	**MW-191-201910**	EPA 5030B/8260	618900		
60318969008	**MW-190-201910**	EPA 5030B/8260	618900		
60318969009	**MW-192-201910**	EPA 5030B/8260	619494		
60318969010	**TMW-35-201910**	EPA 5030B/8260	619494		
60318969011	**MW-63R-201910**	EPA 5030B/8260	619494		
60318969012	**MW-39R-201910**	EPA 5030B/8260	619494		
60318969013	**EB-01-201910**	EPA 5030B/8260	619494		
60318969014	**TB-01-201910**	EPA 5030B/8260	619494		
60318969015	**MW-195-201910**	EPA 5030B/8260	619494		
60318969016	**TMW-29-201910**	EPA 5030B/8260	619494		
60318969017	**TMW-20-201910**	EPA 5030B/8260	619494		
60318969018	**TB-02-201910**	EPA 5030B/8260	619494		
60318969019	**ITMW-7-201910**	EPA 5030B/8260	619494		
60318969020	**TMW-21-201910**	EPA 5030B/8260	619494		
60318969021	**TMW-11-201910**	EPA 5030B/8260	619494		
60318969022	**TMW-10-201910**	EPA 5030B/8260	619494		
60318969023	**MW-89-201910**	EPA 5030B/8260	619494		
60318969021	**TMW-11-201910**	SM 4500-S-2 D	618512		
60318969022	**TMW-10-201910**	SM 4500-S-2 D	618512		
60318969023	**MW-89-201910**	SM 4500-S-2 D	618512		
60318969020	**TMW-21-201910**	EPA 300.0	620217		
60318969021	**TMW-11-201910**	EPA 300.0	620217		
60318969022	**TMW-10-201910**	EPA 300.0	620217		
60318969023	**MW-89-201910**	EPA 300.0	620217		
60318969020	**TMW-21-201910**	EPA 353.2	617944		
60318969021	**TMW-11-201910**	EPA 353.2	617944		
60318969022	**TMW-10-201910**	EPA 353.2	617944		
60318969023	**MW-89-201910**	EPA 353.2	617944		
60318969020	**TMW-21-201910**	SM 5310C	619519		
60318969021	**TMW-11-201910**	SM 5310C	619144		
60318969022	**TMW-10-201910**	SM 5310C	619519		
60318969023	**MW-89-201910**	SM 5310C	619144		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60318969

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60318969020	**TMW-21-201910**	SM 5310C	619520		
60318969021	**TMW-11-201910**	SM 5310C	619520		
60318969022	**TMW-10-201910**	SM 5310C	619520		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Aff

WO# : 60318969

60318969

MTJL Log-in

ALL S

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller nzurweller@ramboll.com	Site Collection Info/Address: Fort Smith, AR
Customer Project Name/Number:	State: AR County/City: Sebastian Time Zone Collected: PT MT (CT) ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [X] No
Collected by (print): Alyssa Larson	Purchase Order #: DW PWS ID #:
Collected by (signature): Alyssa	Quote #: DW Location Code #:
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold	Turnaround Date Required: RUSH: Std TAT Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)
	Immediately Packed on Ice? [X] Yes [ ] No
	Field Filtered (if applicable): [ ] Yes [X] No Analysis:

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Analyses: VOCs (Full List 8260)

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	(Y)	N	NA
Custody Signatures Present	(Y)	N	NA
Collector Signature Present	(Y)	N	NA
Bottles Intact	(Y)	N	NA
Correct Bottles	(Y)	N	NA
Sufficient Volume	(Y)	N	NA
Samples received on ice	(Y)	N	NA
VOA - Headspace Acceptable	(Y)	N	NA
USDA Regulated Soils	Y	N	(NA)
Samples in holding time	(Y)	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips:			
Sample pH Acceptable	Y	(N)	NA
pH Strips:			
Sulfide Present	(Y)	N	NA
Lead Acetate Strips:			

60318969

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	VOCs	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
MW-176-201910	GW	Grab	10/22/19	1555	N/A	N/A		3	X	001
MW-187-201910				1425						002
MW-188-201910				1535						003
MW-188-201910-MS				1535						004
MW-188-201910-MSD				1535						005
MW-62R-201910				1309						004 006
MW-68-201910				1434						005 007
MW-40R-201910				1605						006 008
MW-40R-201910-MS				1605						
MW-40R-201910-MSD				1605						

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y (N) N/A

Packing Material Used: Zip Bubble Bag

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: (Y) N NA

Therm ID #: T298

Cooler Temp Upon Receipt: 1.6 °C 2.1

Cooler Therm Corr. Factor: +0.0 °C

Cooler Temp Corrected: 1.6 °C 2.1

Comments:

Trip Blank Received: (Y) N N/A

HCL MeOH TSP Other

NonConformance(s): (YES) / NO

Page 1 of 4

Relinquished by/Company : (Signature)	Date/Time: (see page 4)	Received by/Company : (Signature)	Date/Time: 10.23.19 0620
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller nzurweller@ramboll.com

Site Collection Info/Address: Fort Smith, AR

Customer Project Name/Number:

State: AR / County/City: Sebastian / Time Zone Collected: PT MT (CT) ET

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [X] No

Collected by (print): Alyssa Lanser

Purchase Order #

DW PWS ID #:

Collected by (signature):

Quote #

DW Location Code #:

Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____

Turnaround Date Required:

RUSH: Std TAT Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Immediately Packed on Ice? [X] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [X] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

Analyses: VOCs (Full List 8260)

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60318969

↓ LAB USE ONLY: ↓ Lab Sample # / Comments

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	VOCs	Lab Sample # / Comments
MW-191-201910	GW	Grab	10/22/19	12:55	N/A	N/A		3	X	007
MW-190-201910				14:25						008
MW-192-201910				1555						009
MW-192-201910-MS				1555						
MW-192-201910-MSD				1555						
TMW-35-201910				1550						010
TMW-35-201910-MS				1550						
TMW-35-201910-MSD				1550						
MW-03R-201910				1310						011
MW-39R-201910	↓	↓	↓	1430	↓	↓		↓	↓	012

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature) (see page 4)		Received by/Company : (Signature)	10/23/19 0600
Relinquished by/Company : (Signature)		Received by/Company : (Signature)	
Relinquished by/Company : (Signature)		Received by/Company : (Signature)	

Pace Analytical®

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller nzurweller@ramboll.com

Site Collection Info/Address: Fort Smith, AR

Customer Project Name/Number:

State: AR / County/City: Sebastian / Time Zone Collected: PT MT CT ET

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [X] No

Collected by (print): Alyssa Larson

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature): Alyssa L

Turnaround Date Required:

Immediately Packed on Ice? [X] Yes [ ] No

Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive ____ [ ] Hold ____

RUSH: Std. TAT Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [X] No

Analysis: ____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other ____

Analyses: VOCs (Full List 8260)

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: ____			
Sample pH Acceptable	Y	N	NA
pH Strips: ____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: ____			

60318969

↓ LAB USE ONLY: ↓

	Customer Sample ID	Matrix*	Comp/Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	VOCs (Full List 8260)	Lab Sample # / Comments
1	EB-01-201910	W	Grab	10/24/19	1650	N/A	N/A		3	X	013
1	TB-01-201910	W	—		17:05				2		014
1	MW-195-201910	GW	Grab		16:20				3		015
1	MW-195-201910-MS				16:20						
1	MW-195-201910-MSD				16:20						
1	TMW-29-201910				~~16:25~~ 1430						016
1	TMW-20-201910				1405						017
2	TB-02-201910	W	—		1715				2		018
1	ITMW-07-201910	GW	Grab		1715				3		019

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: ____

ACCT #: ____

Template: ____

Prelogin: ____

PM: ____

PB: ____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: ____

Cooler Temp Upon Receipt ____ oC

Cooler Therm Corr. Factor ____ oC

Cooler Temp Corrected ____ oC

Comments: ____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 3 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
	(see page 4)	[illegible]	10-27-19 [illegible]
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

F-ALL-C-010-rev 00, 05Jul2018

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller nzurweller@ramboll.com

Site Collection Info/Address: Fort Smith AR

Customer Project Name/Number:

State: AR / County/City: Sebastian / Time Zone Collected: PT MT CT ET

Phone:
Email: jpavlowsky@ramboll.com

Site/Facility ID #:

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print): Johanna Pavlowsky

Purchase Order #:

DW PWS ID #:

Quote #:

DW Location Code #:

Collected by (signature): JO Pavlowsky

Turnaround Date Required:

Immediately Packed on Ice? [X] Yes [ ] No

Sample Disposal:
[X] Dispose as appropriate [ ] Return
[ ] Archive
[ ] Hold

RUSH: (Std) Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: (3) (D) (D) (2) (1) (O) (4.35)

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other benzylalkonium chloride (BAK)

Lab Project Manager:

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

60318969

Analyses

	Customer Sample ID	Matrix*	Comp/Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	VOCs EPA 8260 ~~8620~~	Methylene, Ethane, Ethene (MEE)	MEE, Acetylene (MEEA)	Sulfate, Nitrate, Chloride	Sulfate, Nitrate (only)	Total organic carbon	TOTAL IRON	volatile fatty acids	TOTAL DISSOLVED CARBON	Sulfide	hydrogen	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
2	TMW-21-201910	GW	G	10-22-19	1600				12	X	X		X		X	X	X	X			020
2	TMW-11-201910	GW	G	↓	1345				14	X		X	X		X	X	X	X	X	X	021
2	TMW-10-201910	GW	G	↓	1405				14	X		X	X		X	X	X	X	X	X	022
2	MW-89-201910	GW	G	↓	1630				11	X		X		X	X	X			X	X	023

JP

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used: Zolc Bubble Bag

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #:
ACCT #:
Template:
Prelogin:
PM:
PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: T298

Cooler Temp Upon Receipt 1.6 oC 2.1

Cooler Therm Corr. Factor +0.0 oC

Cooler Temp Corrected 1.6 oC

Comments:

Trip Blank Received: Y N N/A HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 4 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
JPavlowsky /REH	10/22/19 @1800	Aroft /Pace	10/23/19 0620

F-ALL-C-010-rev 00, 05Jul2018

Pace Analytical
www.pacelabs.com

Sample Receiving Non-Conformance Form (NCF)

Date: 10-23-19	Evaluated by: Wr.pt / Pag
Client: Kan boll	

Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. If COC is incomplete, check applicable issues below and add details where appropriate:

	Collection date/time missing or incorrect		Analyses or analytes: missing or clarification needed		Samples listed on COC do not match samples received (missing, additional, etc.)
	Sample IDs on COC do not match sample labels		Required trip blanks were not received		Required signatures are missing

Comments/Details/Other Issues not listed above:

3. Sample integrity issues: check applicable issues below and add details where appropriate:

	Samples: Past holding time		Samples: Condition needs to be brought to lab personnel's attention (details below)	X	Preservation: Improper
	Samples: Not field filtered		Containers: Broken or compromised		Temperature: not within acceptance criteria (typically 0-6C)
	Samples: Insufficient volume received		Containers: Incorrect		Temperature: Samples arrived frozen
	Samples: Cooler damaged or compromised		Custody Seals: Missing or compromised on samples, trip blanks or coolers		Vials received with improper headspace
	Samples: contain chlorine or sulfides		Packing Material: Insufficient/Improper		Other:

Comments/Details:

TMW-21-201910 has PH of 3
added 2.5 mL of HNO3 Final PH 1.5 Lot 9589-34

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:	
PM Initials:	Date/Time:	

Client Comments/Instructions:

	AG1U	AG2U	AG3U	BP1U	BP2U	BP3U	BP3S	AG3S	BP3N	BP3C	BP3Z	DG9H	DG9Q	DG9U	JGFU	WGKU	VG9U	AG1H	AG2H	AG4U	AG5U	OTHR
20 1						1		1	1			3	3									1 - Boston Rd.
21 2						1		1	1		1	3	3						40 mL - 2 - other			1 " " VB9U
22 3						1		1	1		1	3	3							" "		1 " " VB9U
23 4						1		1	1		1	3	3							" "		VB9U
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						
16																						
17																						
18																						
19																						
20																						

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 6, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60318969**

Pace Workorder: 31878

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Thursday, October 24, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/06/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 15

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31878 60318969

Lab ID	Sample ID	Matrix	Date Collected	Date Received
318780001	TMW-21-201910	Water	10/22/2019 16:00	10/24/2019 11:00
318780002	TMW-11-201910	Water	10/22/2019 13:45	10/24/2019 11:00
318780003	TMW-10-201910	Water	10/22/2019 14:05	10/24/2019 11:00

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31878 60318969

Lab ID: **318780001** Date Received: 10/24/2019 11:00 Matrix: Water

Sample ID: **TMW-21-201910** Date Collected: 10/22/2019 16:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<2.0**	mg/l	2.0	0.43	10	11/2/2019 01:54	KB	d
Acetic Acid	**130**	mg/l	10	2.8	100	11/2/2019 02:47	KB	d
Propionic Acid	**1300**	mg/l	100	4.0	1000	11/2/2019 03:40	KB	d
Formic Acid	**<50**	mg/l	50	8.6	100	11/2/2019 02:47	KB	d,B
Butyric Acid	**56**	mg/l	10	1.1	100	11/2/2019 02:47	KB	d
Pyruvic Acid	**5.4**	mg/l	1.0	0.050	10	11/2/2019 01:54	KB	d
i-Pentanoic Acid	**5.5**	mg/l	1.0	0.060	10	11/2/2019 01:54	KB	d
Pentanoic Acid	**130**	mg/l	10	0.70	100	11/2/2019 02:47	KB	d
i-Hexanoic Acid	**0.39**	mg/l	0.20	0.029	1	10/31/2019 05:16	KB	
Hexanoic Acid	**6.3**	mg/l	2.0	0.10	10	11/2/2019 01:54	KB	d

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31878 60318969

Lab ID: **318780003** Date Received: 10/24/2019 11:00 Matrix: Water

Sample ID: **TMW-10-201910** Date Collected: 10/22/2019 14:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	10/31/2019 07:03	KB	
Acetic Acid	**0.63**	mg/l	0.10	0.028	1	10/31/2019 07:03	KB	
Propionic Acid	**0.30**	mg/l	0.10	0.0040	1	10/31/2019 07:03	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	10/31/2019 07:03	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	10/31/2019 07:03	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	10/31/2019 07:03	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 07:03	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	10/31/2019 07:03	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 07:03	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	10/31/2019 07:03	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31878 60318969

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
B	The analyte was detected in the associated blank.
d	The analyte concentration was determined from a dilution.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31878 60318969

QC Batch: EDON/4247 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 318780001, 318780002, 318780003

METHOD BLANK: 64054

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	
Formic Acid	mg/l	<0.50	0.50	
Butyric Acid	mg/l	<0.10	0.10	
Pyruvic Acid	mg/l	<0.10	0.10	
i-Pentanoic Acid	mg/l	<0.10	0.10	
Pentanoic Acid	mg/l	<0.10	0.10	
i-Hexanoic Acid	mg/l	<0.20	0.20	
Hexanoic Acid	mg/l	<0.20	0.20	

LABORATORY CONTROL SAMPLE: 64055

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	1.9	97	70-130	
Acetic Acid	mg/l	2	1.9	93	70-130	
Propionic Acid	mg/l	2	1.9	97	70-130	
Formic Acid	mg/l	2	2.2	112	70-130	
Butyric Acid	mg/l	2	2.0	100	70-130	
Pyruvic Acid	mg/l	2	1.8	90	70-130	
i-Pentanoic Acid	mg/l	2	2.0	98	70-130	
Pentanoic Acid	mg/l	2	1.9	97	70-130	
i-Hexanoic Acid	mg/l	2	2.0	99	70-130	
Hexanoic Acid	mg/l	2	1.8	92	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64056 64057 Original: 319080001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
EDonors											
Lactic Acid	mg/l	0.032	2	1.8	1.9	90	92	70-130	1.9	30	
Acetic Acid	mg/l	0.032	2	2.0	1.9	96	95	70-130	1.1	30	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31878 60318969

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64056 64057 Original: 319080001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Propionic Acid	mg/l	0.0053	2	2.0	1.9	98	97	70-130	1.3	30	
Formic Acid	mg/l	0.085	2	2.3	2.0	110	97	70-130	12	30	
Butyric Acid	mg/l	0.0049	2	2.0	2.0	100	98	70-130	1.7	30	
Pyruvic Acid	mg/l	0	2	1.7	1.7	87	87	70-130	0.46	30	
i-Pentanoic Acid	mg/l	0	2	2.0	2.0	100	98	70-130	2.5	30	
Pentanoic Acid	mg/l	0.036	2	2.0	1.9	98	95	70-130	3.6	30	
i-Hexanoic Acid	mg/l	0	2	2.1	2.0	105	98	70-130	6.9	30	
Hexanoic Acid	mg/l	0.0024	2	1.9	1.8	96	90	70-130	6.5	30	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31878 60318969

QC Batch: EDON/4257 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 318780001

METHOD BLANK: 64154

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	
Formic Acid	mg/l	<0.50	0.50	B
Butyric Acid	mg/l	<0.10	0.10	
Pyruvic Acid	mg/l	<0.10	0.10	
i-Pentanoic Acid	mg/l	<0.10	0.10	
Pentanoic Acid	mg/l	<0.10	0.10	
Hexanoic Acid	mg/l	<0.20	0.20	

LABORATORY CONTROL SAMPLE: 64155

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	2.0	98	70-130	
Acetic Acid	mg/l	2	1.9	97	70-130	
Propionic Acid	mg/l	2	2.0	99	70-130	
Formic Acid	mg/l	2	2.3	117	70-130	B
Butyric Acid	mg/l	2	2.0	100	70-130	
Pyruvic Acid	mg/l	2	1.8	90	70-130	
i-Pentanoic Acid	mg/l	2	2.0	99	70-130	
Pentanoic Acid	mg/l	2	2.0	102	70-130	
Hexanoic Acid	mg/l	2	1.9	94	70-130	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31878 60318969

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
318780001	TMW-21-201910			AM23G	EDON/4247
318780002	TMW-11-201910			AM23G	EDON/4247
318780003	TMW-10-201910			AM23G	EDON/4247
318780001	TMW-21-201910			AM23G	EDON/4257

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Chain of Custody

PASI Kansas Laboratory

31878

Pace Analytical®
www.pacelabs.com

Workorder: 60318969 **Workorder Name:** WHIRLPOOL FORT SMITH, AR **Results Requested By:** 11/6/2019

Report / Invoice To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy P.O._____

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Volatile Fatty Acids													LAB USE ONLY
1	TMW-21-201910	10/22/2019 16:00	60318969020	Water		X													
2	TMW-11-201910	10/22/2019 13:45	60318969021	Water		X													
3	TMW-10-201910	10/22/2019 14:05	60318969022	Water		X													
4																			
5																			

Transfers	Released By	Date/Time	Received By	Date/Time
1	Holly Fowler PASI	10/23/19 1800	[illegible] PASI	10.24
2				11:00
3				

2 x 40 ml vials BAK

Cooler Temperature on Receipt 1.4 °C **Custody Seal** Y or (N) **Received on Ice** (Y)

Cooler Receipt Form

Client Name: Pace Project: 60318969 Lab Work Order: 31878

A. **Shipping/Container Information** (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ **Air bill Present:** (Yes) No

Tracking Number: 1219 2981 2342

Custody Seal on Cooler/Box Present: Yes (No) **Seals Intact:** Yes No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None **Ice Intact:** (Yes) Melted

Cooler Temperature: 1.4°C **Radiation Screened:** Yes (No) **Chain of Custody Present:** (Yes) No

Comments:_____

B. **Laboratory Assignment/Log-in** (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓	✓		
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?			✓	

Comments:_____

_____

Cooler contents examined/received by : LY **Date:** 10-24-19

Project Manager Review : JW **Date:** 10/24/19

F-PAE-Q-009-rev.01, 3Oct2017

NON-CONFORMANCE FORM

PAES Work Order #: 31878

Date: 10.24 Time of Receipt: 11.00 Receiver: LG

Client: Pace

REASON FOR NON-CONFORMANCE:

Vials IDs all started with ITMW.

ACTION TAKEN:

Client name: Jamie Church Date: 10/24/19 Time: 14:40

client emailed

Customer Service Initials: JW Date: 10/24/19

F-PAE-Q-014-rev.00, 20 Nov2014

Joseph Ward - Re: 60318969

From: Jamie Church
To: Ward, Joseph
Date: 10/24/2019 2:45 PM
Subject: Re: 60318969
Cc: Louis, Emma
Attachments: 60318969_coc.pdf

Here is the original COC. Says TMW

>>> Joseph Ward 10/24/2019 1:40 PM >>>
Upon receiving your samples for the project referenced above, We noticed the following.

The first three samples beginning ID's started with ITMW on the vials but on the COC it states the samples ID's should be TMW. Can you confirm the correct sample id?

Thank you

Joseph Ward
Customer Service
Pace Analytical Energy Services
220 William Pitt Way
Pittsburgh PA 15238
412-826-5245/412-826-2384(Direct)

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 06, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on October 24, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60319115001	MW-56R-201910	Water	10/23/19 11:29	10/24/19 06:15
60319115002	MW-57R-201910	Water	10/23/19 13:32	10/24/19 06:15
60319115003	TMW-19-201910	Water	10/23/19 16:06	10/24/19 06:15
60319115004	DUP-06-201910	Water	10/23/19 16:06	10/24/19 06:15
60319115005	MW-97-201910	Water	10/23/19 09:15	10/24/19 06:15
60319115006	MW-96-201910	Water	10/23/19 10:35	10/24/19 06:15
60319115007	MW-82-201910	Water	10/23/19 12:40	10/24/19 06:15
60319115008	DUP-02-201910	Water	10/23/19 12:40	10/24/19 06:15
60319115009	IW-78-201910	Water	10/23/19 14:05	10/24/19 06:15
60319115010	ITMW-1R-201910	Water	10/23/19 16:00	10/24/19 06:15
60319115011	MW-175-201910	Water	10/23/19 11:45	10/24/19 06:15
60319115012	TMW-30-201910	Water	10/23/19 14:45	10/24/19 06:15
60319115013	MW-182-201910	Water	10/23/19 16:00	10/24/19 06:15
60319115014	MW-29-201910	Water	10/23/19 09:10	10/24/19 06:15
60319115015	TMW-27-201910	Water	10/23/19 10:40	10/24/19 06:15
60319115016	ITMW-20-201910	Water	10/23/19 11:35	10/24/19 06:15
60319115017	DUP-05-201910	Water	10/23/19 11:35	10/24/19 06:15
60319115018	MW-26-201910	Water	10/23/19 12:35	10/24/19 06:15
60319115019	MW-84-201910	Water	10/23/19 14:55	10/24/19 06:15
60319115020	MW-22-201910	Water	10/23/19 16:00	10/24/19 06:15
60319115021	MW-28-201910	Water	10/23/19 17:15	10/24/19 06:15
60319115022	DUP-03-201910	Water	10/23/19 15:00	10/24/19 06:15
60319115023	MW-60R-201910	Water	10/23/19 09:40	10/24/19 06:15
60319115024	MW-196-201910	Water	10/23/19 10:55	10/24/19 06:15
60319115025	MW-55R-201910	Water	10/23/19 12:15	10/24/19 06:15
60319115026	DUP-04-2019110	Water	10/23/19 12:15	10/24/19 06:15
60319115027	TMW-24-2019110	Water	10/23/19 14:25	10/24/19 06:15
60319115028	TMW-23-2019110	Water	10/23/19 16:05	10/24/19 06:15
60319115029	MW-24-2019110	Water	10/23/19 17:20	10/24/19 06:15
60319115030	MW-178-201910	Water	10/23/19 16:45	10/24/19 06:15
60319115031	EB-02-201910	Water	10/23/19 17:05	10/24/19 06:15
60319115032	EB-03-201910	Water	10/23/19 17:05	10/24/19 06:15
60319115033	TB-03-201910	Water	10/23/19 07:30	10/24/19 06:15
60319115034	MW-98-201910	Water	10/23/19 09:50	10/24/19 06:15
60319115035	TB-04-201910	Water	10/23/19 17:50	10/24/19 06:15
60319115036	TB-05-201910	Water	10/23/19 17:55	10/24/19 06:15
60319115037	VP-10-201910	Water	10/23/19 10:00	10/24/19 06:15

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60319115038	VP-12-201910	Water	10/23/19 10:15	10/24/19 06:15
60319115039	VP-7-201910	Water	10/23/19 10:50	10/24/19 06:15
60319115040	VP-8-201910	Water	10/23/19 11:10	10/24/19 06:15
60319115041	VP-14-201910	Water	10/23/19 12:35	10/24/19 06:15
60319115042	MW-194-201910	Water	10/23/19 10:40	10/24/19 06:15
60319115043	MW-61R-201910	Water	10/23/19 09:10	10/24/19 06:15
60319115044	TMW-26-201910	Water	10/23/19 17:00	10/24/19 06:15
60319115045	MW-46R-201910	Water	10/23/19 15:00	10/24/19 06:15
60319115046	MW-184-201910	Water	10/23/19 13:40	10/24/19 06:15
60319115047	MW-183R-201910	Water	10/23/19 11:02	10/24/19 06:15
60319115048	MW-99-201910	Water	10/23/19 12:35	10/24/19 06:15
60319115049	I W-77-201910	Water	10/23/19 16:10	10/24/19 06:15
60319115050	TMW-12-201910	Water	10/23/19 09:30	10/24/19 06:15
60319115051	TMW-14-201910	Water	10/23/19 11:00	10/24/19 06:15
60319115052	MW -50R-201910	Water	10/23/19 09:35	10/24/19 06:15
60319115053	RW -69-201910	Water	10/23/19 11:25	10/24/19 06:15
60319115054	ITMW -9-201910	Water	10/23/19 13:05	10/24/19 06:15
60319115055	MW -87-201910	Water	10/23/19 13:10	10/24/19 06:15
60319115056	MW -58R-201910	Water	10/23/19 15:15	10/24/19 06:15
60319115057	MW -38-201910	Water	10/23/19 17:00	10/24/19 06:15
60319115058	DUP -01-201910	Water	10/23/19 15:15	10/24/19 06:15
60319115059	DUP -07-201910	Water	10/23/19 13:05	10/24/19 06:15
60319115060	TMW -16-201910	Water	10/23/19 15:15	10/24/19 06:15
60319115061	TMW -22R-201910	Water	10/23/19 12:30	10/24/19 06:15

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60319115001	MW-56R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115002	MW-57R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115003	TMW-19-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115004	DUP-06-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115005	MW-97-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115006	MW-96-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115007	MW-82-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115008	DUP-02-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115009	IW-78-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115010	ITMW-1R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115011	MW-175-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115012	TMW-30-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115013	MW-182-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115014	MW-29-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115015	TMW-27-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115016	ITMW-20-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115017	DUP-05-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115018	MW-26-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115019	MW-84-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115020	MW-22-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115021	MW-28-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115022	DUP-03-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115023	MW-60R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115024	MW-196-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115025	MW-55R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115026	DUP-04-2019110	EPA 5030B/8260	PGH	38	PASI-K
60319115027	TMW-24-2019110	EPA 5030B/8260	PGH	38	PASI-K
60319115028	TMW-23-2019110	EPA 5030B/8260	PGH	38	PASI-K
60319115029	MW-24-2019110	EPA 5030B/8260	PGH	38	PASI-K
60319115030	MW-178-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115031	EB-02-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115032	EB-03-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115033	TB-03-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115034	MW-98-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115035	TB-04-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115036	TB-05-201910	EPA 5030B/8260	PGH	38	PASI-K
60319115037	VP-10-201910	EPA 5030B/8260	PGH	38	PASI-K

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60319115038	**VP-12-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115039	**VP-7-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115040	**VP-8-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115041	**VP-14-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115042	**MW-194-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS, MJK	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115043	**MW-61R-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS, MJK	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115044	**TMW-26-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS, MJK	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115045	**MW-46R-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115046	**MW-184-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115047	**MW-183R-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115048	**MW-99-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115049	**I W-77-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115050	**TMW-12-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115051	**TMW-14-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115052	**MW -50R-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115053	**RW -69-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115054	**ITMW -9-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115055	**MW -87-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115056	**MW -58R-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115057	**MW -38-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MJK	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115058	**DUP -01-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115059	**DUP -07-201910**	EPA 5030B/8260	PGH	38	PASI-K
60319115060	**TMW -16-201910**	EPA 6010	LRS	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319115061	**TMW -22R-201910**	EPA 6010	LRS	1	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS, MJK	2	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
11 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
61 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

pH: Post-analysis pH measurement indicates insufficient VOA sample preservation.
- TMW-30-201910 (Lab ID: 60319115012)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 618529

B: Analyte was detected in the associated method blank.
- BLANK for HBN 618529 [MSV/1015 (Lab ID: 2524157)
  - 1,2-Dichloroethane
  - Tetrachloroethene

QC Batch: 618530

B: Analyte was detected in the associated method blank.
- BLANK for HBN 618530 [MSV/1015 (Lab ID: 2524159)
  - Carbon disulfide

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 618526

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 06, 2019

QC Batch: 618529
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 618530
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 618858
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 619234
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 619489
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 620343
A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
6 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
11 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 unpres
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
11 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 618075

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60319115043,60319115057

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2521955)
  - Nitrogen, Nitrite

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **SM 5310C**
Description: 5310C TOC
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
11 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Method: **SM 5310C**
Description: 5310C Diss. Organic Carbon LF
Client: Ramboll Environ_AR
Date: November 06, 2019

General Information:
5 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 619520

B: Analyte was detected in the associated method blank.
- BLANK for HBN 619520 [WETA/631 (Lab ID: 2526889)
  - Dissolved Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-194-201910 **Lab ID: 60319115042** Collected: 10/23/19 10:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**6940**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:14	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**4.2J**	ug/L	10.0	3.3	1		10/29/19 16:18	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 16:18	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 16:18	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 16:18	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 16:18	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 16:18	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 16:18	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 16:18	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 16:18	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 16:18	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 16:18	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 16:18	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 16:18	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 16:18	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 16:18	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:18	75-35-4	
cis-1,2-Dichloroethene	**0.97J**	ug/L	1.0	0.17	1		10/29/19 16:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 16:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 16:18	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 16:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 16:18	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 16:18	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 16:18	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 16:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 16:18	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 16:18	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 16:18	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:18	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 16:18	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 16:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 16:18	79-00-5	
Trichloroethene	**10.8**	ug/L	1.0	0.17	1		10/29/19 16:18	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 16:18	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 16:18	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/29/19 16:18	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/29/19 16:18	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		10/29/19 16:18	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 16:18		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**155**	mg/L	20.0	4.4	20		11/02/19 14:36	16887-00-6	
Sulfate	**10.2**	mg/L	1.0	0.23	1		11/05/19 00:53	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-194-201910 **Lab ID: 60319115042** Collected: 10/23/19 10:40 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.053J**	mg/L	0.10	0.038	1		10/24/19 16:04		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:04	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:04	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.63J**	mg/L	1.0	0.29	1		10/29/19 15:36	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**0.58J**	mg/L	1.0	0.29	1		10/30/19 17:24		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-61R-201910 **Lab ID: 60319115043** Collected: 10/23/19 09:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**9690**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:22	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 16:32	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 16:32	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 16:32	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 16:32	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 16:32	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 16:32	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 16:32	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 16:32	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 16:32	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 16:32	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 16:32	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 16:32	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 16:32	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 16:32	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 16:32	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:32	75-35-4	
cis-1,2-Dichloroethene	**1.7**	ug/L	1.0	0.17	1		10/29/19 16:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 16:32	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 16:32	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 16:32	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 16:32	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 16:32	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 16:32	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 16:32	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 16:32	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 16:32	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 16:32	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:32	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 16:32	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 16:32	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 16:32	79-00-5	
Trichloroethene	**20.8**	ug/L	1.0	0.17	1		10/29/19 16:32	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 16:32	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 16:32	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		10/29/19 16:32	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		10/29/19 16:32	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/29/19 16:32	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 16:32		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**109**	mg/L	20.0	4.4	20		11/02/19 15:26	16887-00-6	
Sulfate	**12.1**	mg/L	1.0	0.23	1		11/05/19 01:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-61R-201910 **Lab ID: 60319115043** Collected: 10/23/19 09:10 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.069J**	mg/L	0.10	0.038	1		10/24/19 16:01		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:01	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		10/24/19 16:01	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.38J**	mg/L	1.0	0.29	1		10/29/19 16:30	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**0.57J**	mg/L	1.0	0.29	1		10/30/19 17:50		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: MW-99-201910 **Lab ID: 60319115048** Collected: 10/23/19 12:35 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/29/19 16:46	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		10/29/19 16:46	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/29/19 16:46	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/29/19 16:46	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/29/19 16:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/29/19 16:46	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/29/19 16:46	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/29/19 16:46	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/29/19 16:46	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/29/19 16:46	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/29/19 16:46	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/29/19 16:46	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/29/19 16:46	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/29/19 16:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/29/19 16:46	107-06-2	
1,1-Dichloroethene	**0.56J**	ug/L	1.0	0.22	1		10/29/19 16:46	75-35-4	
cis-1,2-Dichloroethene	**4.8**	ug/L	1.0	0.17	1		10/29/19 16:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		10/29/19 16:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/29/19 16:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/29/19 16:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/29/19 16:46	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/29/19 16:46	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/29/19 16:46	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/29/19 16:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/29/19 16:46	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/29/19 16:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/29/19 16:46	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/29/19 16:46	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		10/29/19 16:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/29/19 16:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/29/19 16:46	79-00-5	
Trichloroethene	**72.6**	ug/L	1.0	0.17	1		10/29/19 16:46	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		10/29/19 16:46	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/29/19 16:46	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	80-120		1		10/29/19 16:46	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-122		1		10/29/19 16:46	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/29/19 16:46	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/29/19 16:46		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW -16-201910 **Lab ID: 60319115060** Collected: 10/23/19 15:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**53400**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:52	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	**73.7**	ug/L	10.0	3.3	1		10/31/19 10:12	67-64-1	
Benzene	**0.18J**	ug/L	1.0	0.079	1		10/31/19 10:12	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 10:12	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 10:12	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 10:12	74-83-9	
2-Butanone (MEK)	**325**	ug/L	10.0	0.70	1		10/31/19 10:12	78-93-3	
Carbon disulfide	**1.6J**	ug/L	5.0	0.16	1		10/31/19 10:12	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 10:12	56-23-5	
Chlorobenzene	**0.14J**	ug/L	1.0	0.13	1		10/31/19 10:12	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		10/31/19 10:12	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 10:12	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 10:12	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 10:12	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 10:12	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 10:12	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		10/31/19 10:12	75-35-4	
cis-1,2-Dichloroethene	**8.8**	ug/L	1.0	0.17	1		10/31/19 10:12	156-59-2	
trans-1,2-Dichloroethene	**0.39J**	ug/L	1.0	0.17	1		10/31/19 10:12	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 10:12	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 10:12	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 10:12	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 10:12	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 10:12	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 10:12	75-09-2	
4-Methyl-2-pentanone (MIBK)	**1.9J**	ug/L	10.0	0.56	1		10/31/19 10:12	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 10:12	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 10:12	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 10:12	127-18-4	
Toluene	**0.21J**	ug/L	1.0	0.14	1		10/31/19 10:12	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 10:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 10:12	79-00-5	
Trichloroethene	**6.0**	ug/L	1.0	0.17	1		10/31/19 10:12	79-01-6	
Vinyl chloride	**2.4**	ug/L	1.0	0.11	1		10/31/19 10:12	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 10:12	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		10/31/19 10:12	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		10/31/19 10:12	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		10/31/19 10:12	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 10:12		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**498**	mg/L	50.0	11.0	50		11/05/19 04:49	16887-00-6	
Sulfate	**3.9**	mg/L	1.0	0.23	1		11/05/19 04:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW -16-201910 **Lab ID: 60319115060** Collected: 10/23/19 15:15 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.081J**	mg/L	0.10	0.038	1		10/24/19 16:11		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:11	14797-55-8	
Nitrogen, Nitrite	**0.085J**	mg/L	0.10	0.067	1		10/24/19 16:11	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**449**	mg/L	50.0	14.5	50		10/31/19 17:10	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**469**	mg/L	50.0	14.5	50		10/31/19 23:38		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW -22R-201910 **Lab ID: 60319115061** Collected: 10/23/19 12:30 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**21200**	ug/L	50.0	14.0	1	10/25/19 13:36	10/28/19 12:44	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		10/31/19 11:09	67-64-1	
Benzene	**0.15J**	ug/L	1.0	0.079	1		10/31/19 11:09	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		10/31/19 11:09	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		10/31/19 11:09	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		10/31/19 11:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		10/31/19 11:09	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		10/31/19 11:09	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		10/31/19 11:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		10/31/19 11:09	108-90-7	
Chloroethane	**1.5**	ug/L	1.0	0.42	1		10/31/19 11:09	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		10/31/19 11:09	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		10/31/19 11:09	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		10/31/19 11:09	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		10/31/19 11:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		10/31/19 11:09	107-06-2	
1,1-Dichloroethene	**0.72J**	ug/L	1.0	0.22	1		10/31/19 11:09	75-35-4	
cis-1,2-Dichloroethene	**126**	ug/L	1.0	0.17	1		10/31/19 11:09	156-59-2	
trans-1,2-Dichloroethene	**1.1**	ug/L	1.0	0.17	1		10/31/19 11:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		10/31/19 11:09	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		10/31/19 11:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		10/31/19 11:09	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		10/31/19 11:09	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		10/31/19 11:09	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		10/31/19 11:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		10/31/19 11:09	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		10/31/19 11:09	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		10/31/19 11:09	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		10/31/19 11:09	127-18-4	
Toluene	**0.23J**	ug/L	1.0	0.14	1		10/31/19 11:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		10/31/19 11:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		10/31/19 11:09	79-00-5	
Trichloroethene	**146**	ug/L	1.0	0.17	1		10/31/19 11:09	79-01-6	
Vinyl chloride	**7.9**	ug/L	1.0	0.11	1		10/31/19 11:09	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		10/31/19 11:09	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	80-120		1		10/31/19 11:09	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		10/31/19 11:09	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		10/31/19 11:09	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		10/31/19 11:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**189**	mg/L	20.0	4.4	20		11/02/19 18:48	16887-00-6	
Sulfate	**2.8**	mg/L	1.0	0.23	1		11/05/19 05:22	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Sample: TMW -22R-201910 **Lab ID: 60319115061** Collected: 10/23/19 12:30 Received: 10/24/19 06:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.075J**	mg/L	0.10	0.038	1		10/24/19 16:08		
Nitrogen, Nitrate	ND	mg/L	0.10	0.067	1		10/24/19 16:08	14797-55-8	
Nitrogen, Nitrite	**0.069J**	mg/L	0.10	0.067	1		10/24/19 16:08	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.9**	mg/L	1.0	0.29	1		10/29/19 18:30	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**0.81J**	mg/L	1.0	0.29	1		11/01/19 00:19		B

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618327 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

METHOD BLANK: 2523009 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	14.0	10/28/19 12:12	

LABORATORY CONTROL SAMPLE: 2523010

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	9930	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2523011 2523012

Parameter	Units	60319115042 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	6940	10000	10000	16700	16800	98	98	75-125	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618526 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115001, 60319115002, 60319115003, 60319115004, 60319115005, 60319115006, 60319115007, 60319115008, 60319115009

METHOD BLANK: 2524149 Matrix: Water
Associated Lab Samples: 60319115001, 60319115002, 60319115003, 60319115004, 60319115005, 60319115006, 60319115007, 60319115008, 60319115009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/01/19 08:35	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/01/19 08:35	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/01/19 08:35	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/01/19 08:35	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/01/19 08:35	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/01/19 08:35	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/01/19 08:35	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/01/19 08:35	
2-Hexanone	ug/L	ND	10.0	1.0	11/01/19 08:35	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/01/19 08:35	
Acetone	ug/L	ND	10.0	3.3	11/01/19 08:35	
Benzene	ug/L	ND	1.0	0.079	11/01/19 08:35	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/01/19 08:35	
Bromoform	ug/L	ND	1.0	0.21	11/01/19 08:35	
Bromomethane	ug/L	ND	5.0	0.32	11/01/19 08:35	
Carbon disulfide	ug/L	ND	5.0	0.16	11/01/19 08:35	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/01/19 08:35	
Chlorobenzene	ug/L	ND	1.0	0.13	11/01/19 08:35	
Chloroethane	ug/L	ND	1.0	0.42	11/01/19 08:35	
Chloroform	ug/L	ND	1.0	0.10	11/01/19 08:35	
Chloromethane	ug/L	ND	1.0	0.16	11/01/19 08:35	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/01/19 08:35	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/01/19 08:35	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/01/19 08:35	
Ethylbenzene	ug/L	ND	1.0	0.12	11/01/19 08:35	
Methylene Chloride	ug/L	ND	1.0	0.27	11/01/19 08:35	
Styrene	ug/L	ND	1.0	0.15	11/01/19 08:35	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/01/19 08:35	
Toluene	ug/L	ND	1.0	0.14	11/01/19 08:35	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/01/19 08:35	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/01/19 08:35	
Trichloroethene	ug/L	ND	1.0	0.17	11/01/19 08:35	
Vinyl chloride	ug/L	ND	1.0	0.11	11/01/19 08:35	
Xylene (Total)	ug/L	ND	3.0	0.34	11/01/19 08:35	
1,2-Dichloroethane-d4 (S)	%	105	77-122		11/01/19 08:35	
4-Bromofluorobenzene (S)	%	100	80-120		11/01/19 08:35	
Toluene-d8 (S)	%	100	80-120		11/01/19 08:35	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

LABORATORY CONTROL SAMPLE: 2524150

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.7	103	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	20.0	100	71-122	
1,1,2-Trichloroethane	ug/L	20	20.4	102	76-123	
1,1-Dichloroethane	ug/L	20	20.5	103	78-117	
1,1-Dichloroethene	ug/L	20	23.0	115	74-122	
1,2-Dichloroethane	ug/L	20	19.9	100	73-120	
1,2-Dichloropropane	ug/L	20	20.7	103	78-115	
2-Butanone (MEK)	ug/L	100	96.8	97	54-133	
2-Hexanone	ug/L	100	94.9	95	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	97.2	97	62-130	
Acetone	ug/L	100	97.5	98	54-130	
Benzene	ug/L	20	20.3	102	80-120	
Bromodichloromethane	ug/L	20	18.8	94	78-121	
Bromoform	ug/L	20	16.6	83	62-137	
Bromomethane	ug/L	20	23.4	117	41-145	
Carbon disulfide	ug/L	20	20.3	102	64-119	
Carbon tetrachloride	ug/L	20	20.5	103	77-122	
Chlorobenzene	ug/L	20	20.3	101	80-123	
Chloroethane	ug/L	20	21.7	108	60-146	
Chloroform	ug/L	20	21.1	106	81-116	
Chloromethane	ug/L	20	21.4	107	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.2	101	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.3	101	78-118	
Dibromochloromethane	ug/L	20	17.6	88	73-128	
Ethylbenzene	ug/L	20	20.3	102	80-120	
Methylene Chloride	ug/L	20	22.1	110	80-126	
Styrene	ug/L	20	20.2	101	85-120	
Tetrachloroethene	ug/L	20	19.9	100	77-121	
Toluene	ug/L	20	20.1	101	80-120	
trans-1,2-Dichloroethene	ug/L	20	20.3	101	80-120	
trans-1,3-Dichloropropene	ug/L	20	17.9	90	76-123	
Trichloroethene	ug/L	20	22.5	112	80-121	
Vinyl chloride	ug/L	20	21.2	106	46-162	
Xylene (Total)	ug/L	60	61.0	102	80-120	
1,2-Dichloroethane-d4 (S)	%			103	77-122	
4-Bromofluorobenzene (S)	%			97	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618529 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115010, 60319115011, 60319115012, 60319115013, 60319115014, 60319115015, 60319115016, 60319115017, 60319115018, 60319115019, 60319115020, 60319115021, 60319115022, 60319115023, 60319115024, 60319115025, 60319115026, 60319115027, 60319115028, 60319115029

METHOD BLANK: 2524157 Matrix: Water
Associated Lab Samples: 60319115010, 60319115011, 60319115012, 60319115013, 60319115014, 60319115015, 60319115016, 60319115017, 60319115018, 60319115019, 60319115020, 60319115021, 60319115022, 60319115023, 60319115024, 60319115025, 60319115026, 60319115027, 60319115028, 60319115029

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	10/28/19 19:34	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	10/28/19 19:34	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	10/28/19 19:34	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	10/28/19 19:34	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	10/28/19 19:34	
1,2-Dichloroethane	ug/L	0.15J	1.0	0.14	10/28/19 19:34	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	10/28/19 19:34	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	10/28/19 19:34	
2-Hexanone	ug/L	ND	10.0	1.0	10/28/19 19:34	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	10/28/19 19:34	
Acetone	ug/L	ND	10.0	3.3	10/28/19 19:34	
Benzene	ug/L	ND	1.0	0.079	10/28/19 19:34	
Bromodichloromethane	ug/L	ND	1.0	0.17	10/28/19 19:34	
Bromoform	ug/L	ND	1.0	0.21	10/28/19 19:34	
Bromomethane	ug/L	ND	5.0	0.32	10/28/19 19:34	
Carbon disulfide	ug/L	ND	5.0	0.16	10/28/19 19:34	
Carbon tetrachloride	ug/L	ND	1.0	0.084	10/28/19 19:34	
Chlorobenzene	ug/L	ND	1.0	0.13	10/28/19 19:34	
Chloroethane	ug/L	ND	1.0	0.42	10/28/19 19:34	
Chloroform	ug/L	ND	1.0	0.10	10/28/19 19:34	
Chloromethane	ug/L	ND	1.0	0.16	10/28/19 19:34	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/28/19 19:34	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	10/28/19 19:34	
Dibromochloromethane	ug/L	ND	1.0	0.15	10/28/19 19:34	
Ethylbenzene	ug/L	ND	1.0	0.12	10/28/19 19:34	
Methylene Chloride	ug/L	ND	1.0	0.27	10/28/19 19:34	
Styrene	ug/L	ND	1.0	0.15	10/28/19 19:34	
Tetrachloroethene	ug/L	0.30J	1.0	0.22	10/28/19 19:34	
Toluene	ug/L	ND	1.0	0.14	10/28/19 19:34	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/28/19 19:34	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	10/28/19 19:34	
Trichloroethene	ug/L	ND	1.0	0.17	10/28/19 19:34	
Vinyl chloride	ug/L	ND	1.0	0.11	10/28/19 19:34	
Xylene (Total)	ug/L	ND	3.0	0.34	10/28/19 19:34	
1,2-Dichloroethane-d4 (S)	%	102	77-122		10/28/19 19:34	
4-Bromofluorobenzene (S)	%	102	80-120		10/28/19 19:34	
Toluene-d8 (S)	%	98	80-120		10/28/19 19:34	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

LABORATORY CONTROL SAMPLE: 2524158

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	22.0	110	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.7	99	71-122	
1,1,2-Trichloroethane	ug/L	20	21.8	109	76-123	
1,1-Dichloroethane	ug/L	20	21.9	109	78-117	
1,1-Dichloroethene	ug/L	20	23.4	117	74-122	
1,2-Dichloroethane	ug/L	20	20.5	103	73-120	
1,2-Dichloropropane	ug/L	20	21.7	108	78-115	
2-Butanone (MEK)	ug/L	100	99.2	99	54-133	
2-Hexanone	ug/L	100	101	101	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	118	118	62-130	
Acetone	ug/L	100	102	102	54-130	
Benzene	ug/L	20	22.0	110	80-120	
Bromodichloromethane	ug/L	20	21.1	105	78-121	
Bromoform	ug/L	20	16.5	83	62-137	
Bromomethane	ug/L	20	15.0	75	41-145	
Carbon disulfide	ug/L	20	21.3	107	64-119	
Carbon tetrachloride	ug/L	20	20.3	102	77-122	
Chlorobenzene	ug/L	20	21.0	105	80-123	
Chloroethane	ug/L	20	20.4	102	60-146	
Chloroform	ug/L	20	21.1	105	81-116	
Chloromethane	ug/L	20	13.1	65	29-154	
cis-1,2-Dichloroethene	ug/L	20	22.0	110	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.7	103	78-118	
Dibromochloromethane	ug/L	20	19.3	96	73-128	
Ethylbenzene	ug/L	20	21.2	106	80-120	
Methylene Chloride	ug/L	20	21.8	109	80-126	
Styrene	ug/L	20	21.2	106	85-120	
Tetrachloroethene	ug/L	20	21.4	107	77-121	
Toluene	ug/L	20	21.4	107	80-120	
trans-1,2-Dichloroethene	ug/L	20	21.8	109	80-120	
trans-1,3-Dichloropropene	ug/L	20	18.8	94	76-123	
Trichloroethene	ug/L	20	22.6	113	80-121	
Vinyl chloride	ug/L	20	20.6	103	46-162	
Xylene (Total)	ug/L	60	65.6	109	80-120	
1,2-Dichloroethane-d4 (S)	%			102	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618530 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115030, 60319115031, 60319115032, 60319115033, 60319115034, 60319115035, 60319115036, 60319115037, 60319115038, 60319115039, 60319115040, 60319115041, 60319115042, 60319115043, 60319115044, 60319115045, 60319115046, 60319115047, 60319115048, 60319115049

METHOD BLANK: 2524159 Matrix: Water
Associated Lab Samples: 60319115030, 60319115031, 60319115032, 60319115033, 60319115034, 60319115035, 60319115036, 60319115037, 60319115038, 60319115039, 60319115040, 60319115041, 60319115042, 60319115043, 60319115044, 60319115045, 60319115046, 60319115047, 60319115048, 60319115049

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	10/29/19 12:40	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	10/29/19 12:40	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	10/29/19 12:40	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	10/29/19 12:40	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	10/29/19 12:40	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	10/29/19 12:40	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	10/29/19 12:40	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	10/29/19 12:40	
2-Hexanone	ug/L	ND	10.0	1.0	10/29/19 12:40	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	10/29/19 12:40	
Acetone	ug/L	ND	10.0	3.3	10/29/19 12:40	
Benzene	ug/L	ND	1.0	0.079	10/29/19 12:40	
Bromodichloromethane	ug/L	ND	1.0	0.17	10/29/19 12:40	
Bromoform	ug/L	ND	1.0	0.21	10/29/19 12:40	
Bromomethane	ug/L	ND	5.0	0.32	10/29/19 12:40	
Carbon disulfide	ug/L	0.19J	5.0	0.16	10/29/19 12:40	
Carbon tetrachloride	ug/L	ND	1.0	0.084	10/29/19 12:40	
Chlorobenzene	ug/L	ND	1.0	0.13	10/29/19 12:40	
Chloroethane	ug/L	ND	1.0	0.42	10/29/19 12:40	
Chloroform	ug/L	ND	1.0	0.10	10/29/19 12:40	
Chloromethane	ug/L	ND	1.0	0.16	10/29/19 12:40	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/29/19 12:40	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	10/29/19 12:40	
Dibromochloromethane	ug/L	ND	1.0	0.15	10/29/19 12:40	
Ethylbenzene	ug/L	ND	1.0	0.12	10/29/19 12:40	
Methylene Chloride	ug/L	ND	1.0	0.27	10/29/19 12:40	
Styrene	ug/L	ND	1.0	0.15	10/29/19 12:40	
Tetrachloroethene	ug/L	ND	1.0	0.22	10/29/19 12:40	
Toluene	ug/L	ND	1.0	0.14	10/29/19 12:40	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/29/19 12:40	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	10/29/19 12:40	
Trichloroethene	ug/L	ND	1.0	0.17	10/29/19 12:40	
Vinyl chloride	ug/L	ND	1.0	0.11	10/29/19 12:40	
Xylene (Total)	ug/L	ND	3.0	0.34	10/29/19 12:40	
1,2-Dichloroethane-d4 (S)	%	99	77-122		10/29/19 12:40	
4-Bromofluorobenzene (S)	%	103	80-120		10/29/19 12:40	
Toluene-d8 (S)	%	98	80-120		10/29/19 12:40	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

LABORATORY CONTROL SAMPLE: 2524160

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.1	100	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.7	99	71-122	
1,1,2-Trichloroethane	ug/L	20	18.1	91	76-123	
1,1-Dichloroethane	ug/L	20	20.5	102	78-117	
1,1-Dichloroethene	ug/L	20	20.3	102	74-122	
1,2-Dichloroethane	ug/L	20	20.1	101	73-120	
1,2-Dichloropropane	ug/L	20	20.7	104	78-115	
2-Butanone (MEK)	ug/L	100	94.7	95	54-133	
2-Hexanone	ug/L	100	98.8	99	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	108	108	62-130	
Acetone	ug/L	100	102	102	54-130	
Benzene	ug/L	20	20.0	100	80-120	
Bromodichloromethane	ug/L	20	20.0	100	78-121	
Bromoform	ug/L	20	17.3	86	62-137	
Bromomethane	ug/L	20	21.1	106	41-145	
Carbon disulfide	ug/L	20	20.5	102	64-119	
Carbon tetrachloride	ug/L	20	20.0	100	77-122	
Chlorobenzene	ug/L	20	19.4	97	80-123	
Chloroethane	ug/L	20	19.8	99	60-146	
Chloroform	ug/L	20	20.7	103	81-116	
Chloromethane	ug/L	20	17.9	89	29-154	
cis-1,2-Dichloroethene	ug/L	20	21.0	105	80-120	
cis-1,3-Dichloropropene	ug/L	20	21.2	106	78-118	
Dibromochloromethane	ug/L	20	19.6	98	73-128	
Ethylbenzene	ug/L	20	19.2	96	80-120	
Methylene Chloride	ug/L	20	22.2	111	80-126	
Styrene	ug/L	20	19.7	99	85-120	
Tetrachloroethene	ug/L	20	18.6	93	77-121	
Toluene	ug/L	20	19.0	95	80-120	
trans-1,2-Dichloroethene	ug/L	20	20.8	104	80-120	
trans-1,3-Dichloropropene	ug/L	20	19.0	95	76-123	
Trichloroethene	ug/L	20	20.6	103	80-121	
Vinyl chloride	ug/L	20	20.5	102	46-162	
Xylene (Total)	ug/L	60	59.1	98	80-120	
1,2-Dichloroethane-d4 (S)	%			105	77-122	
4-Bromofluorobenzene (S)	%			98	80-120	
Toluene-d8 (S)	%			97	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618858 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115012, 60319115014, 60319115022, 60319115027, 60319115050, 60319115051, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115058, 60319115059, 60319115060, 60319115061

METHOD BLANK: 2524826 Matrix: Water
Associated Lab Samples: 60319115012, 60319115014, 60319115022, 60319115027, 60319115050, 60319115051, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115058, 60319115059, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	10/31/19 08:47	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	10/31/19 08:47	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	10/31/19 08:47	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	10/31/19 08:47	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	10/31/19 08:47	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	10/31/19 08:47	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	10/31/19 08:47	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	10/31/19 08:47	
2-Hexanone	ug/L	ND	10.0	1.0	10/31/19 08:47	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	10/31/19 08:47	
Acetone	ug/L	ND	10.0	3.3	10/31/19 08:47	
Benzene	ug/L	ND	1.0	0.079	10/31/19 08:47	
Bromodichloromethane	ug/L	ND	1.0	0.17	10/31/19 08:47	
Bromoform	ug/L	ND	1.0	0.21	10/31/19 08:47	
Bromomethane	ug/L	ND	5.0	0.32	10/31/19 08:47	
Carbon disulfide	ug/L	ND	5.0	0.16	10/31/19 08:47	
Carbon tetrachloride	ug/L	ND	1.0	0.084	10/31/19 08:47	
Chlorobenzene	ug/L	ND	1.0	0.13	10/31/19 08:47	
Chloroethane	ug/L	ND	1.0	0.42	10/31/19 08:47	
Chloroform	ug/L	ND	1.0	0.10	10/31/19 08:47	
Chloromethane	ug/L	ND	1.0	0.16	10/31/19 08:47	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 08:47	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	10/31/19 08:47	
Dibromochloromethane	ug/L	ND	1.0	0.15	10/31/19 08:47	
Ethylbenzene	ug/L	ND	1.0	0.12	10/31/19 08:47	
Methylene Chloride	ug/L	ND	1.0	0.27	10/31/19 08:47	
Styrene	ug/L	ND	1.0	0.15	10/31/19 08:47	
Tetrachloroethene	ug/L	ND	1.0	0.22	10/31/19 08:47	
Toluene	ug/L	ND	1.0	0.14	10/31/19 08:47	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	10/31/19 08:47	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	10/31/19 08:47	
Trichloroethene	ug/L	ND	1.0	0.17	10/31/19 08:47	
Vinyl chloride	ug/L	ND	1.0	0.11	10/31/19 08:47	
Xylene (Total)	ug/L	ND	3.0	0.34	10/31/19 08:47	
1,2-Dichloroethane-d4 (S)	%	99	77-122		10/31/19 08:47	
4-Bromofluorobenzene (S)	%	98	80-120		10/31/19 08:47	
Toluene-d8 (S)	%	100	80-120		10/31/19 08:47	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

LABORATORY CONTROL SAMPLE: 2524827

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.0	95	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.3	96	71-122	
1,1,2-Trichloroethane	ug/L	20	19.5	97	76-123	
1,1-Dichloroethane	ug/L	20	19.6	98	78-117	
1,1-Dichloroethene	ug/L	20	21.4	107	74-122	
1,2-Dichloroethane	ug/L	20	18.8	94	73-120	
1,2-Dichloropropane	ug/L	20	19.2	96	78-115	
2-Butanone (MEK)	ug/L	100	89.8	90	54-133	
2-Hexanone	ug/L	100	93.2	93	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	96.5	96	62-130	
Acetone	ug/L	100	86.8	87	54-130	
Benzene	ug/L	20	19.3	96	80-120	
Bromodichloromethane	ug/L	20	18.3	91	78-121	
Bromoform	ug/L	20	17.1	86	62-137	
Bromomethane	ug/L	20	21.8	109	41-145	
Carbon disulfide	ug/L	20	19.6	98	64-119	
Carbon tetrachloride	ug/L	20	19.6	98	77-122	
Chlorobenzene	ug/L	20	19.3	97	80-123	
Chloroethane	ug/L	20	19.8	99	60-146	
Chloroform	ug/L	20	19.8	99	81-116	
Chloromethane	ug/L	20	17.8	89	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.0	95	80-120	
cis-1,3-Dichloropropene	ug/L	20	18.7	94	78-118	
Dibromochloromethane	ug/L	20	17.9	90	73-128	
Ethylbenzene	ug/L	20	19.3	96	80-120	
Methylene Chloride	ug/L	20	21.2	106	80-126	
Styrene	ug/L	20	19.3	96	85-120	
Tetrachloroethene	ug/L	20	18.9	94	77-121	
Toluene	ug/L	20	18.9	94	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.0	95	80-120	
trans-1,3-Dichloropropene	ug/L	20	17.4	87	76-123	
Trichloroethene	ug/L	20	21.3	106	80-121	
Vinyl chloride	ug/L	20	19.8	99	46-162	
Xylene (Total)	ug/L	60	58.4	97	80-120	
1,2-Dichloroethane-d4 (S)	%			99	77-122	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 619234
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115037, 60319115045

METHOD BLANK: 2526076
Matrix: Water
Associated Lab Samples: 60319115037, 60319115045

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Trichloroethene	ug/L	ND	1.0	0.17	10/30/19 14:59	
1,2-Dichloroethane-d4 (S)	%	99	77-122		10/30/19 14:59	
4-Bromofluorobenzene (S)	%	102	80-120		10/30/19 14:59	
Toluene-d8 (S)	%	100	80-120		10/30/19 14:59	

LABORATORY CONTROL SAMPLE: 2526077

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichloroethene	ug/L	20	22.2	111	80-121	
1,2-Dichloroethane-d4 (S)	%			99	77-122	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			101	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 619489
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115049

METHOD BLANK: 2526812 Matrix: Water
Associated Lab Samples: 60319115049

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Trichloroethene	ug/L	ND	1.0	0.17	10/31/19 16:21	
1,2-Dichloroethane-d4 (S)	%	100	77-122		10/31/19 16:21	
4-Bromofluorobenzene (S)	%	99	80-120		10/31/19 16:21	
Toluene-d8 (S)	%	101	80-120		10/31/19 16:21	

LABORATORY CONTROL SAMPLE: 2526813

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichloroethene	ug/L	20	23.5	118	80-121	
1,2-Dichloroethane-d4 (S)	%			105	77-122	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 620343
QC Batch Method: EPA 5030B/8260
Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319115001, 60319115002

METHOD BLANK: 2529674 Matrix: Water
Associated Lab Samples: 60319115001, 60319115002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Trichloroethene	ug/L	ND	1.0	0.17	11/05/19 14:42	
1,2-Dichloroethane-d4 (S)	%	99	77-122		11/05/19 14:42	
4-Bromofluorobenzene (S)	%	99	80-120		11/05/19 14:42	
Toluene-d8 (S)	%	101	80-120		11/05/19 14:42	

LABORATORY CONTROL SAMPLE: 2529675

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichloroethene	ug/L	20	21.8	109	80-121	
1,2-Dichloroethane-d4 (S)	%			100	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618515 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057

METHOD BLANK: 2524109 Matrix: Water
Associated Lab Samples: 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	0.039	10/28/19 10:58	

LABORATORY CONTROL SAMPLE: 2524110

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.49	99	80-120	

MATRIX SPIKE SAMPLE: 2524111

Parameter	Units	60319063002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.5	0.51	101	75-125	

SAMPLE DUPLICATE: 2524112

Parameter	Units	60319116002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

SAMPLE DUPLICATE: 2524113

Parameter	Units	60319146002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 620025 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

METHOD BLANK: 2528885 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	11/02/19 14:02	
Sulfate	mg/L	ND	1.0	0.23	11/02/19 14:02	

METHOD BLANK: 2529453 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	11/05/19 08:38	
Sulfate	mg/L	ND	1.0	0.23	11/05/19 08:38	

LABORATORY CONTROL SAMPLE: 2528886

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	101	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

LABORATORY CONTROL SAMPLE: 2529454

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	90-110	
Sulfate	mg/L	5	5.3	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2528887 2528888

Parameter	Units	60319115042 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	155	100	100	260	258	105	103	80-120	1	15	
Sulfate	mg/L	10.2	5	5	15.6	15.5	109	108	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

MATRIX SPIKE SAMPLE: 2528889

Parameter	Units	60319115060 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	498	250	748	100	80-120	
Sulfate	mg/L	3.9	5	8.9	100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618075 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

METHOD BLANK: 2521951 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043, 60319115044, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	0.067	10/24/19 15:59	
Nitrogen, Nitrite	mg/L	ND	0.10	0.067	10/24/19 15:59	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	10/24/19 15:59	

LABORATORY CONTROL SAMPLE: 2521952

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	0.90	90	70-130	
Nitrogen, Nitrite	mg/L	1	1.0	102	90-110	
Nitrogen, NO2 plus NO3	mg/L	2	1.9	96	90-110	

MATRIX SPIKE SAMPLE: 2521953

Parameter	Units	60319115043 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	1	0.95	95	70-130	
Nitrogen, Nitrite	mg/L	ND	1	1.1	110	90-110	
Nitrogen, NO2 plus NO3	mg/L	0.069J	2	2.0	99	90-110	

MATRIX SPIKE SAMPLE: 2521955

Parameter	Units	60319115057 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	1	1.0	101	70-130	
Nitrogen, Nitrite	mg/L	ND	1	1.1	111	90-110	M1
Nitrogen, NO2 plus NO3	mg/L	0.086J	2	2.1	102	90-110	

SAMPLE DUPLICATE: 2521954

Parameter	Units	60319115042 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	ND	ND		20	
Nitrogen, Nitrite	mg/L	ND	ND		20	
Nitrogen, NO2 plus NO3	mg/L	0.053J	0.051J		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 618924 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60319115042, 60319115043, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115061

METHOD BLANK: 2525011 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043, 60319115052, 60319115053, 60319115054, 60319115055, 60319115056, 60319115057, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	10/29/19 13:49	

LABORATORY CONTROL SAMPLE: 2525012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.5	110	80-120	

MATRIX SPIKE SAMPLE: 2525013

Parameter	Units	60318535007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	17.1	25	44.6	110	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 619519 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60319115044, 60319115060

METHOD BLANK: 2526884 Matrix: Water
Associated Lab Samples: 60319115044, 60319115060

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	10/31/19 16:17	

LABORATORY CONTROL SAMPLE: 2526885

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.5	110	80-120	

MATRIX SPIKE SAMPLE: 2526886

Parameter	Units	60319115044 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	212	125	345	106	80-120	

SAMPLE DUPLICATE: 2526887

Parameter	Units	60318969020 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	1130	1130	0	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 619152 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60319115042, 60319115043

METHOD BLANK: 2525777 Matrix: Water
Associated Lab Samples: 60319115042, 60319115043

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.29	10/30/19 16:57	

LABORATORY CONTROL SAMPLE: 2525778

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.6	112	80-120	

MATRIX SPIKE SAMPLE: 2525779

Parameter	Units	60319115042 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	0.58J	5	4.8	84	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

QC Batch: 619520 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60319115044, 60319115060, 60319115061

METHOD BLANK: 2526889 Matrix: Water
Associated Lab Samples: 60319115044, 60319115060, 60319115061

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	0.30J	1.0	0.29	10/31/19 22:45	

LABORATORY CONTROL SAMPLE: 2526890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.5	111	80-120	

MATRIX SPIKE SAMPLE: 2526891

Parameter	Units	60319115044 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	203	125	329	101	80-120	

SAMPLE DUPLICATE: 2526892

Parameter	Units	60319115061 Result	Dup Result	RPD	Max RPD	Qualifiers
Dissolved Organic Carbon	mg/L	0.81J	0.78J		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 618526
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 618529
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 618530
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 618858
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 619234
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 619489
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 620343
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
pH	Post-analysis pH measurement indicates insufficient VOA sample preservation.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319115042	MW-194-201910	EPA 3010	618327	EPA 6010	618369
60319115043	MW-61R-201910	EPA 3010	618327	EPA 6010	618369
60319115044	TMW-26-201910	EPA 3010	618327	EPA 6010	618369
60319115052	MW -50R-201910	EPA 3010	618327	EPA 6010	618369
60319115053	RW -69-201910	EPA 3010	618327	EPA 6010	618369
60319115054	ITMW -9-201910	EPA 3010	618327	EPA 6010	618369
60319115055	MW -87-201910	EPA 3010	618327	EPA 6010	618369
60319115056	MW -58R-201910	EPA 3010	618327	EPA 6010	618369
60319115057	MW -38-201910	EPA 3010	618327	EPA 6010	618369
60319115060	TMW -16-201910	EPA 3010	618327	EPA 6010	618369
60319115061	TMW -22R-201910	EPA 3010	618327	EPA 6010	618369
60319115001	MW-56R-201910	EPA 5030B/8260	618526		
60319115001	MW-56R-201910	EPA 5030B/8260	620343		
60319115002	MW-57R-201910	EPA 5030B/8260	618526		
60319115002	MW-57R-201910	EPA 5030B/8260	620343		
60319115003	TMW-19-201910	EPA 5030B/8260	618526		
60319115004	DUP-06-201910	EPA 5030B/8260	618526		
60319115005	MW-97-201910	EPA 5030B/8260	618526		
60319115006	MW-96-201910	EPA 5030B/8260	618526		
60319115007	MW-82-201910	EPA 5030B/8260	618526		
60319115008	DUP-02-201910	EPA 5030B/8260	618526		
60319115009	IW-78-201910	EPA 5030B/8260	618526		
60319115010	ITMW-1R-201910	EPA 5030B/8260	618529		
60319115011	MW-175-201910	EPA 5030B/8260	618529		
60319115012	TMW-30-201910	EPA 5030B/8260	618529		
60319115012	TMW-30-201910	EPA 5030B/8260	618858		
60319115013	MW-182-201910	EPA 5030B/8260	618529		
60319115014	MW-29-201910	EPA 5030B/8260	618529		
60319115014	MW-29-201910	EPA 5030B/8260	618858		
60319115015	TMW-27-201910	EPA 5030B/8260	618529		
60319115016	ITMW-20-201910	EPA 5030B/8260	618529		
60319115017	DUP-05-201910	EPA 5030B/8260	618529		
60319115018	MW-26-201910	EPA 5030B/8260	618529		
60319115019	MW-84-201910	EPA 5030B/8260	618529		
60319115020	MW-22-201910	EPA 5030B/8260	618529		
60319115021	MW-28-201910	EPA 5030B/8260	618529		
60319115022	DUP-03-201910	EPA 5030B/8260	618529		
60319115022	DUP-03-201910	EPA 5030B/8260	618858		
60319115023	MW-60R-201910	EPA 5030B/8260	618529		
60319115024	MW-196-201910	EPA 5030B/8260	618529		
60319115025	MW-55R-201910	EPA 5030B/8260	618529		
60319115026	DUP-04-2019110	EPA 5030B/8260	618529		
60319115027	TMW-24-2019110	EPA 5030B/8260	618529		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319115027	TMW-24-2019110	EPA 5030B/8260	618858		
60319115028	TMW-23-2019110	EPA 5030B/8260	618529		
60319115029	MW-24-2019110	EPA 5030B/8260	618529		
60319115030	MW-178-201910	EPA 5030B/8260	618530		
60319115031	EB-02-201910	EPA 5030B/8260	618530		
60319115032	EB-03-201910	EPA 5030B/8260	618530		
60319115033	TB-03-201910	EPA 5030B/8260	618530		
60319115034	MW-98-201910	EPA 5030B/8260	618530		
60319115035	TB-04-201910	EPA 5030B/8260	618530		
60319115036	TB-05-201910	EPA 5030B/8260	618530		
60319115037	VP-10-201910	EPA 5030B/8260	618530		
60319115037	VP-10-201910	EPA 5030B/8260	619234		
60319115038	VP-12-201910	EPA 5030B/8260	618530		
60319115039	VP-7-201910	EPA 5030B/8260	618530		
60319115040	VP-8-201910	EPA 5030B/8260	618530		
60319115041	VP-14-201910	EPA 5030B/8260	618530		
60319115042	MW-194-201910	EPA 5030B/8260	618530		
60319115043	MW-61R-201910	EPA 5030B/8260	618530		
60319115044	TMW-26-201910	EPA 5030B/8260	618530		
60319115045	MW-46R-201910	EPA 5030B/8260	618530		
60319115045	MW-46R-201910	EPA 5030B/8260	619234		
60319115046	MW-184-201910	EPA 5030B/8260	618530		
60319115047	MW-183R-201910	EPA 5030B/8260	618530		
60319115048	MW-99-201910	EPA 5030B/8260	618530		
60319115049	I W-77-201910	EPA 5030B/8260	618530		
60319115049	I W-77-201910	EPA 5030B/8260	619489		
60319115050	TMW-12-201910	EPA 5030B/8260	618858		
60319115051	TMW-14-201910	EPA 5030B/8260	618858		
60319115052	MW -50R-201910	EPA 5030B/8260	618858		
60319115053	RW -69-201910	EPA 5030B/8260	618858		
60319115054	ITMW -9-201910	EPA 5030B/8260	618858		
60319115055	MW -87-201910	EPA 5030B/8260	618858		
60319115056	MW -58R-201910	EPA 5030B/8260	618858		
60319115057	MW -38-201910	EPA 5030B/8260	618858		
60319115058	DUP -01-201910	EPA 5030B/8260	618858		
60319115059	DUP -07-201910	EPA 5030B/8260	618858		
60319115060	TMW -16-201910	EPA 5030B/8260	618858		
60319115061	TMW -22R-201910	EPA 5030B/8260	618858		
60319115052	MW -50R-201910	SM 4500-S-2 D	618515		
60319115053	RW -69-201910	SM 4500-S-2 D	618515		
60319115054	ITMW -9-201910	SM 4500-S-2 D	618515		
60319115055	MW -87-201910	SM 4500-S-2 D	618515		
60319115056	MW -58R-201910	SM 4500-S-2 D	618515		
60319115057	MW -38-201910	SM 4500-S-2 D	618515		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL FORT SMITH, AR
Pace Project No.: 60319115

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319115042	**MW-194-201910**	EPA 300.0	620025		
60319115043	**MW-61R-201910**	EPA 300.0	620025		
60319115044	**TMW-26-201910**	EPA 300.0	620025		
60319115052	**MW -50R-201910**	EPA 300.0	620025		
60319115053	**RW -69-201910**	EPA 300.0	620025		
60319115054	**ITMW -9-201910**	EPA 300.0	620025		
60319115055	**MW -87-201910**	EPA 300.0	620025		
60319115056	**MW -58R-201910**	EPA 300.0	620025		
60319115057	**MW -38-201910**	EPA 300.0	620025		
60319115060	**TMW -16-201910**	EPA 300.0	620025		
60319115061	**TMW -22R-201910**	EPA 300.0	620025		
60319115042	**MW-194-201910**	EPA 353.2	618075		
60319115043	**MW-61R-201910**	EPA 353.2	618075		
60319115044	**TMW-26-201910**	EPA 353.2	618075		
60319115052	**MW -50R-201910**	EPA 353.2	618075		
60319115053	**RW -69-201910**	EPA 353.2	618075		
60319115054	**ITMW -9-201910**	EPA 353.2	618075		
60319115055	**MW -87-201910**	EPA 353.2	618075		
60319115056	**MW -58R-201910**	EPA 353.2	618075		
60319115057	**MW -38-201910**	EPA 353.2	618075		
60319115060	**TMW -16-201910**	EPA 353.2	618075		
60319115061	**TMW -22R-201910**	EPA 353.2	618075		
60319115042	**MW-194-201910**	SM 5310C	618924		
60319115043	**MW-61R-201910**	SM 5310C	618924		
60319115044	**TMW-26-201910**	SM 5310C	619519		
60319115052	**MW -50R-201910**	SM 5310C	618924		
60319115053	**RW -69-201910**	SM 5310C	618924		
60319115054	**ITMW -9-201910**	SM 5310C	618924		
60319115055	**MW -87-201910**	SM 5310C	618924		
60319115056	**MW -58R-201910**	SM 5310C	618924		
60319115057	**MW -38-201910**	SM 5310C	618924		
60319115060	**TMW -16-201910**	SM 5310C	619519		
60319115061	**TMW -22R-201910**	SM 5310C	618924		
60319115042	**MW-194-201910**	SM 5310C	619152		
60319115043	**MW-61R-201910**	SM 5310C	619152		
60319115044	**TMW-26-201910**	SM 5310C	619520		
60319115060	**TMW -16-201910**	SM 5310C	619520		
60319115061	**TMW -22R-201910**	SM 5310C	619520		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- WO# : 60319115 (60319115) or MTJL Log-in 1

ALL LY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: Email:	Site/Facility ID #
Collected by (print):	Purchase Order # / Quote #
Collected by (signature):	Turnaround Date Required:
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Compliance Monitoring? [ ] Yes [ ] No

DW PWS ID #:

DW Location Code #:

Immediately Packed on Ice? [ ] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

	Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: 8260 VOC Full List	LAB USE ONLY- Lab Sample # / Comments
1	MW-50R - 201910	GW	G	10/23/19	1129				3	X	001
2	MW-57R - 201910				1332						002
3	TMW-19 - 201910				1606						003
4	DUP-06 - 201910				1606						004
5	MW-97 - 201910				0915						005
6	MW-96 - 201910				1035						006
7	MW-82 - 201910				1240						007
8	DUP-02 - 201910				1240						008
9	IW-78 - 201910				1405						009
10	ITMW-1R - 201910				1600						010

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	(Y)	N	NA
Custody Signatures Present	(Y)	N	NA
Collector Signature Present	(Y)	N	NA
Bottles Intact	(Y)	N	NA
Correct Bottles	(Y)	N	NA
Sufficient Volume	(Y)	N	NA
Samples received on ice	(Y)	N	NA
VOA - Headspace Acceptable	Y	(N)	NA
USDA Regulated Soils	Y	N	(NA)
Samples in holding time	(Y)	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips: _____			
Sample pH Acceptable	(Y)	N	NA
pH Strips: _____			
Sulfide Present	Y	N	(NA)
Lead Acetate Strips: _____			

(6031 9115)

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [✓] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y (N) N/A

Packing Material Used: Bubble bag Blk

LAB Tracking #: N/A

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [✓] N/A

Samples received via: FEDEX [ ] UPS [ ] Client [✓] Courier VIA [ ] Pace Courier [ ]

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
(see page 1)		E Brackett/Pace	10/24/19 0700
Relinquished by/Company : (Signature)	Date/Time	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: I-301

Cooler Temp Upon Receipt 1.7, 2.3, 1.3 oC

Cooler Therm Corr. Factor 0.0 oC

Cooler Temp Corrected 1.7, 2.3, 1.3 oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 3 of 10

F-ALL-C-010-rev 00, 05Jul2018

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 2

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected: PT MT CT ET
Phone: / Email:	Site/Facility ID #: / Compliance Monitoring? [ ] Yes [ ] No
Collected by (print):	Purchase Order #: / DW PWS ID #:
Collected by (signature):	Quote #: / DW Location Code #: / Turnaround Date Required: / Immediately Packed on Ice? [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply) / Field Filtered (if applicable): [ ] Yes [ ] No / Analysis: _____

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: 8240 VOC Full List	LAB USE ONLY: Lab Sample # / Comments
MW-175-201910	GW	G	10/23/19	1145				3	X	011
TMW-30-201910				1445						012
MW-182-201910				1600						013
MW-29-201910				0910						014
TMW-27-201910				1040						015
ITMW-20-201910				1135						016
DUP-05-201910				1135						017
MW-26-201910				1235						018
MW-84-201910				1455						019
MW-22-201910				1600						020

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60319115

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
(See page 1)		EBrackett/Pace	10/24/19 0200
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s)

Page 1

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 3

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected by (print):	Purchase Order #: DW PWS ID #:
	Quote #: DW Location Code #:
Collected by (signature):	Turnaround Date Required: Immediately Packed on Ice? [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses: 8260 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
MW-28-201910	GW	G	10/23/19	1715				3	021
DUP-03-201910				1500					022
MW-60R-201910				0940					023
MW-19G-201910				1055					024
MW-55R-201910				1215					025
DUP-04-201910				1215					026
TMW-24-201910				1425					027
TMW-25 MA 23-201910				1605					028
MW-24-201910				1720					029
MW-17B-201910				1645					030

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:	
		E Brackett / Pace	10/24/19	0200
Relinquished by/Company : (Signature) (see page 1)	Date/Time:	Received by/Company : (Signature)	Date/Time:	
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:	

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller

Site Collection Info/Address:

Customer Project Name/Number:

State / County/City / Time Zone Collected: PT MT CT ET

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print):

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature):

Turnaround Date Required:

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive _____
[ ] Hold _____

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

Analyses: 8240 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60319115

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	LAB USE ONLY: Lab Sample # / Comments
EB-02-201910	GW	G	10/23/19	1705				3	031
EB-03-201910	GW	G	10/23/19	1705					032
TB-03-201910				0730					033
MW-98-201910				0950					034
TB-04-201910				1750					035
TB-05-201910				1755					036

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 10 of 10

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature) (see page 1)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

Page 17 of 136

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller

Site Collection Info/Address:

Customer Project Name/Number:

State / County/City / Time Zone Collected PT MT CT ET

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print): Haley Ahlers

Purchase Order #

DW PWS ID #:

Collected by (signature): Haley Ahlers

Quote #

DW Location Code #:

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive _____
[ ] Hold _____

Turnaround Date Required: Std

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Immediately Packed on Ice? [ ] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [X] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses: 8240 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

6031915

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
VP-10-201910	GW	G	10/23/19	1000				3	037
VP-12-201910				1015					038
VP-7-201910				1050					039
VP-8-201910				1110					040
VP-14-201910				1235					041

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____
ACCT #: _____
Template: _____
Prelogin: _____
PM: _____
PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A
HCL MeOH TSP Other

NonConformance(s): YES NO

Page 1 of 1

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Haley Ahlers / Ramboll	10/23/19 1800		
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll	Billing Information: Tamara House-Knight
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210	
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com
Copy To: Nick Zurweller	Site Collection Info/Address:
Customer Project Name/Number:	State / County/City / Time Zone Collected PT MT CT ET
Phone: / Email:	Site/Facility ID #
Collected by (print):	Purchase Order # / Quote #
Collected by (signature):	Turnaround Date Required:
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive ____ [ ] Hold ____	RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Compliance Monitoring? [ ] Yes [ ] No

DW PWS ID #:

DW Location Code #:

Immediately Packed on Ice? [ ] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: ____

Container Preservative Type **: 3 D 7 U 2 U O

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other BAK

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	8260 VOC Full List	Methane, Ethane, Ethene (MEE)	Metals, Total Iron	Sulfate, Nitrate, Chloride	Total Organic Carbon	Dissolved Organic Carbon	Volatile Fatty Acids (VFA)	LAB USE ONLY Lab Sample # / Comments
MW-194-201910	GW	G	10/23/19	1040				12	X	X	X	X	X	X	X	042
MW-61R-201910				0910				↓	↓	↓	↓	↓	↓	↓	↓	043
TMW-26-201910				1700				↓								044
MW-46R-201910				1500				3								045
MW-184-201910				1340												046
MW-183R-201910				1102												047
MW-99-201910				1235												048
IW-77-201910				1610												049
TMW-12-201910				0930												050
TMW-14-201910	↓	↓	↓	1100				↓	↓							051

Analyses

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: ____			
Sample pH Acceptable	Y	N	NA
pH Strips: ____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: ____			

60319115

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: ____

ACCT #: ____

Template: ____

Prelogin: ____

PM: ____

PB: ____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: ____

Cooler Temp Upon Receipt ____ oC

Cooler Therm Corr. Factor ____ oC

Cooler Temp Corrected ____ oC

Comments: ____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Relinquished by/Company : (Signature) (see page 1)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-In Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller

Site Collection Info/Address: 6400 Jenny Lind Rd, Fort Smith

Customer Project Name/Number:

State: AR County/City: Sebastian Time Zone Collected: PT MT (CT) ET

Phone: Email: nzurweller@ramboll.com

Site/Facility ID #:

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print): JO Pavlowsky

Purchase Order #:

DW PWS ID #:

Collected by (signature): JO Pavlowsky

Quote #:

DW Location Code #:

Turnaround Date Required: Std

Immediately Packed on Ice? [X] Yes [ ] No

Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **

3	D	D	1	U	U	2	U	O	H2SO4	U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other Benzyl Alkonium chloride

Lab Project Manager:

Analyses

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8260 VOC Full List	Methane, Ethane, Ethene (MEE)	Methane, Ethane, Ethene, Acetylene (MEEA)	Metals, Total Iron	Sulfate, Nitrate	Sulfate, Nitrate, Chloride	Total Organic Carbon	Dissolved Organic Carbon	Volatile Fatty Acids (VFA)	Sulfide	Hydrogen	Lab Sample # / Comments
MW-50R-201910	GW	G	10/23/19	0935				11	X		X	X	X		X			X	X	052
RW-69-201910				1125																053
ITMW-9-201910				1305																054
MW-87-201910				1310																055
MW-58R-201910				1515																056
MW-38-201910				1700				↓			↓	↓	↓		↓			↓	↓	057
DUP-01-201910				1515				3												058
DUP-07-201910				1305				3												059
TMW-16-201910				1515				12		X		X		X	X	X	X			060
TMW-22R-201910	↓	↓	↓	1230	↓	↓		↓	↓	↓		↓	↓	↓	↓	↓	↓		↓	061

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

6031915

↓ LAB USE ONLY: ↓ Lab Sample # / Comments

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier []

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #:

Cooler Temp Upon Receipt: oC

Cooler Therm Corr. Factor: oC

Cooler Temp Corrected: oC

Comments:

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
JO Pavlowsky / REH	10/23/19 @ 1800		
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

Page 1 of 10

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 6, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60319115 WHIRLPOOL**
Pace Workorder: 31905

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, October 25, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/06/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 16

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31905 60319115 WHIRLPOOL

Lab ID	Sample ID	Matrix	Date Collected	Date Received
319050001	MW-194-201910	Water	10/23/2019 10:40	10/25/2019 09:50
319050002	MW-61R-201910	Water	10/23/2019 09:10	10/25/2019 09:50
319050003	TMW-26-201910	Water	10/23/2019 17:00	10/25/2019 09:50
319050004	TMW-16-201910	Water	10/23/2019 15:15	10/25/2019 09:50
319050005	TMW-22R-201910	Water	10/23/2019 12:30	10/25/2019 09:50

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31905 60319115 WHIRLPOOL

Sample Comments

Lab ID: 319050004 **Sample ID:** TMW-16-201910 **Sample Type:** N

The analysis for volatile fatty acids, method AM23G, was reported at dilution for sample due to the measured chloride concentration within the sample; matrix interfering compound.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31905 60319115 WHIRLPOOL

Lab ID: **319050001** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-194-201910** Date Collected: 10/23/2019 10:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	10/31/2019 11:29	KB	
Acetic Acid	**1.8**	mg/l	0.10	0.028	1	10/31/2019 11:29	KB	
Propionic Acid	**0.26**	mg/l	0.10	0.0040	1	10/31/2019 11:29	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	10/31/2019 11:29	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	10/31/2019 11:29	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	10/31/2019 11:29	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 11:29	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	10/31/2019 11:29	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 11:29	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	10/31/2019 11:29	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31905 60319115 WHIRLPOOL

Lab ID: **319050002** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-61R-201910** Date Collected: 10/23/2019 09:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	10/31/2019 12:23	KB	
Acetic Acid	**0.34**	mg/l	0.10	0.028	1	10/31/2019 12:23	KB	
Propionic Acid	**0.22**	mg/l	0.10	0.0040	1	10/31/2019 12:23	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	10/31/2019 12:23	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	10/31/2019 12:23	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	10/31/2019 12:23	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 12:23	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	10/31/2019 12:23	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 12:23	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	10/31/2019 12:23	KB	

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31905 60319115 WHIRLPOOL

Lab ID: **319050004** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-16-201910** Date Collected: 10/23/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<2.0**	mg/l	2.0	0.43	10	10/31/2019 14:09	KB	d
Acetic Acid	**60**	mg/l	10	2.8	100	11/2/2019 07:14	KB	d
Propionic Acid	**560**	mg/l	10	0.40	100	11/2/2019 07:14	KB	d
Formic Acid	**6.7**	mg/l	5.0	0.86	10	10/31/2019 14:09	KB	d
Butyric Acid	**28**	mg/l	1.0	0.11	10	10/31/2019 14:09	KB	d
Pyruvic Acid	**3.1**	mg/l	1.0	0.050	10	10/31/2019 14:09	KB	d
i-Pentanoic Acid	**1.7**	mg/l	1.0	0.060	10	10/31/2019 14:09	KB	d
Pentanoic Acid	**29**	mg/l	1.0	0.070	10	10/31/2019 14:09	KB	d
i-Hexanoic Acid	**<2.0**	mg/l	2.0	0.29	10	10/31/2019 14:09	KB	d
Hexanoic Acid	**<2.0**	mg/l	2.0	0.10	10	10/31/2019 14:09	KB	d

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31905 60319115 WHIRLPOOL

Lab ID: **319050005** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-22R-201910** Date Collected: 10/23/2019 12:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	10/31/2019 15:03	KB	
Acetic Acid	**0.18**	mg/l	0.10	0.028	1	10/31/2019 15:03	KB	
Propionic Acid	**0.10**	mg/l	0.10	0.0040	1	10/31/2019 15:03	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	10/31/2019 15:03	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	10/31/2019 15:03	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	10/31/2019 15:03	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	10/31/2019 15:03	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	10/31/2019 15:03	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	10/31/2019 15:03	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	10/31/2019 15:03	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31905 60319115 WHIRLPOOL

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
B	The analyte was detected in the associated blank.
d	The analyte concentration was determined from a dilution.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31905 60319115 WHIRLPOOL

QC Batch: EDON/4247 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 319050001, 319050002, 319050003, 319050004, 319050005

METHOD BLANK: 64054

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	
Formic Acid	mg/l	<0.50	0.50	
Butyric Acid	mg/l	<0.10	0.10	
Pyruvic Acid	mg/l	<0.10	0.10	
i-Pentanoic Acid	mg/l	<0.10	0.10	
Pentanoic Acid	mg/l	<0.10	0.10	
i-Hexanoic Acid	mg/l	<0.20	0.20	
Hexanoic Acid	mg/l	<0.20	0.20	

LABORATORY CONTROL SAMPLE: 64055

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	1.9	97	70-130	
Acetic Acid	mg/l	2	1.9	93	70-130	
Propionic Acid	mg/l	2	1.9	97	70-130	
Formic Acid	mg/l	2	2.2	112	70-130	
Butyric Acid	mg/l	2	2.0	100	70-130	
Pyruvic Acid	mg/l	2	1.8	90	70-130	
i-Pentanoic Acid	mg/l	2	2.0	98	70-130	
Pentanoic Acid	mg/l	2	1.9	97	70-130	
i-Hexanoic Acid	mg/l	2	2.0	99	70-130	
Hexanoic Acid	mg/l	2	1.8	92	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64056 64057 Original: 319080001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
EDonors											
Lactic Acid	mg/l	0.032	2	1.8	1.9	90	92	70-130	1.9	30	
Acetic Acid	mg/l	0.032	2	2.0	1.9	96	95	70-130	1.1	30	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31905 60319115 WHIRLPOOL

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64056 64057 Original: 319080001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Propionic Acid	mg/l	0.0053	2	2.0	1.9	98	97	70-130	1.3	30	
Formic Acid	mg/l	0.085	2	2.3	2.0	110	97	70-130	12	30	
Butyric Acid	mg/l	0.0049	2	2.0	2.0	100	98	70-130	1.7	30	
Pyruvic Acid	mg/l	0	2	1.7	1.7	87	87	70-130	0.46	30	
i-Pentanoic Acid	mg/l	0	2	2.0	2.0	100	98	70-130	2.5	30	
Pentanoic Acid	mg/l	0.036	2	2.0	1.9	98	95	70-130	3.6	30	
i-Hexanoic Acid	mg/l	0	2	2.1	2.0	105	98	70-130	6.9	30	
Hexanoic Acid	mg/l	0.0024	2	1.9	1.8	96	90	70-130	6.5	30	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31905 60319115 WHIRLPOOL

QC Batch: EDON/4257 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 319050003, 319050004

METHOD BLANK: 64154

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	
Formic Acid	mg/l	<0.50	0.50	B
Butyric Acid	mg/l	<0.10	0.10	

LABORATORY CONTROL SAMPLE: 64155

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	2.0	98	70-130	
Acetic Acid	mg/l	2	1.9	97	70-130	
Propionic Acid	mg/l	2	2.0	99	70-130	
Formic Acid	mg/l	2	2.3	117	70-130	B
Butyric Acid	mg/l	2	2.0	100	70-130	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31905 60319115 WHIRLPOOL

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
319050001	MW-194-201910			AM23G	EDON/4247
319050002	MW-61R-201910			AM23G	EDON/4247
319050003	TMW-26-201910			AM23G	EDON/4247
319050004	TMW-16-201910			AM23G	EDON/4247
319050005	TMW-22R-201910			AM23G	EDON/4247
319050003	TMW-26-201910			AM23G	EDON/4257
319050004	TMW-16-201910			AM23G	EDON/4257

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Chain of Custody

PASI Kansas Laboratory

31905

Pace Analytical®
www.pacelabs.com

Workorder: 60319115 **Workorder Name:** WHIRLPOOL FORT SMITH, AR **Results Requested By:** 11/5/2019

Report / Invoice To	Subcontract To	
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy	P.O. SUB-10250

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Requested Analysis: Volatile Fatty Acids	LAB USE ONLY
1	MW-194-201910	10/23/2019 10:40	60319115042	Water	2	X	
2	MW-61R-201910	10/23/2019 09:10	60319115043	Water	2	X	
3	TMW-26-201910	10/23/2019 17:00	60319115044	Water	2	X	
4	TMW -16-201910	10/23/2019 15:15	60319115060	Water	2	X	
5	TMW -22R-201910	10/23/2019 12:30	60319115061	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	Holly Fowler pasi	~~10/24~~ 10/24/19 1800	[illegible] PASI	10.25
2				0950
3				

Comments

Send 2 x 40mL BAK vials

Cooler Temperature on Receipt 1 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

Cooler Receipt Form

Client Name: Pace **Project:** 60319115 **Lab Work Order:** 31905

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ **Air bill Present:** (Yes) No

Tracking Number: 1219 2981 3213

Custody Seal on Cooler/Box Present: Yes (No) **Seals Intact:** Yes No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None **Ice Intact:** (Yes) Melted

Cooler Temperature: 1°C **Radiation Screened:** Yes (No) **Chain of Custody Present:** (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?			✓	

Comments:_____

Cooler contents examined/received by : LG **Date:** 10.25.19

Project Manager Review : ERJ **Date:** 10/25/19

F-PAE-Q-009-rev.01, 3Oct2017

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 11, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on October 25, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60319241001	TMW-34-201910	Water	10/24/19 17:30	10/25/19 02:10
60319241002	TMW-32-201910	Water	10/24/19 15:15	10/25/19 02:10
60319241003	MW-186-201910	Water	10/24/19 13:15	10/25/19 02:10
60319241004	TMW-25-201910	Water	10/24/19 10:55	10/25/19 02:10
60319241005	IW-147-201910	Water	10/24/19 10:15	10/25/19 02:10
60319241006	MW-95-201910	Water	10/24/19 13:05	10/25/19 02:10
60319241007	MW-83-201910	Water	10/24/19 10:00	10/25/19 02:10
60319241008	ITMW-18-201910	Water	10/24/19 13:00	10/25/19 02:10
60319241009	ITMW-19-201910	Water	10/24/19 11:25	10/25/19 02:10
60319241010	MW-93-201910	Water	10/24/19 14:35	10/25/19 02:10
60319241011	MW-189-201910	Water	10/24/19 09:32	10/25/19 02:10
60319241012	TMW-36-201910	Water	10/24/19 10:46	10/25/19 02:10
60319241013	MW-185-201910	Water	10/24/19 14:29	10/25/19 02:10
60319241014	MW-27-201910	Water	10/24/19 13:15	10/25/19 02:10
60319241015	ITMW-2R-201910	Water	10/24/19 10:05	10/25/19 02:10
60319241016	ITMW-11-201910	Water	10/24/19 11:55	10/25/19 02:10
60319241017	ITMW-12R-201910	Water	10/24/19 16:05	10/25/19 02:10
60319241018	MW-91-201910	Water	10/24/19 14:20	10/25/19 02:10
60319241019	ITMW-21-201910	Water	10/24/19 09:25	10/25/19 02:10
60319241020	MW-85R-201910	Water	10/24/19 10:45	10/25/19 02:10
60319241021	IW-134-201910	Water	10/24/19 12:05	10/25/19 02:10
60319241022	MW-37-201910	Water	10/24/19 15:30	10/25/19 02:10
60319241023	ITMW-16-201910	Water	10/24/19 09:50	10/25/19 02:10
60319241024	ITMW-10-201910	Water	10/24/19 11:35	10/25/19 02:10
60319241025	ITMW-5-201910	Water	10/24/19 13:05	10/25/19 02:10
60319241026	IW-132-201910	Water	10/24/19 15:30	10/25/19 02:10
60319241027	DUP-08-201910	Water	10/24/19 09:32	10/25/19 02:10
60319241028	DUP-09-201910	Water	10/24/19 10:45	10/25/19 02:10
60319241029	DUP-10-201910	Water	10/24/19 09:50	10/25/19 02:10
60319241030	EB-04-201910	Water	10/24/19 16:45	10/25/19 02:10
60319241031	EB-05-201910	Water	10/24/19 16:50	10/25/19 02:10
60319241032	MW-179-201910	Water	10/24/19 15:50	10/25/19 02:10
60319241033	TB-06-201910	Water	10/24/19 17:40	10/25/19 02:10
60319241034	TB-07-201910	Water	10/24/19 17:45	10/25/19 02:10
60319241035	TB-08-201910	Water	10/24/19 17:50	10/25/19 02:10

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60319241001	TMW-34-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	JDS	1	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241002	TMW-32-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	JDS	1	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241003	MW-186-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	JDS	1	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241004	TMW-25-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH	38	PASI-K
		EPA 300.0	MGS	2	PASI-K
		EPA 353.2	JDS	1	PASI-K
		SM 5310C	MJK	1	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241005	IW-147-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH, WNM	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241006	MW-95-201910	EPA 6010	JLH	1	PASI-K
		EPA 5030B/8260	PGH, WNM	38	PASI-K
		SM 4500-S-2 D	MAP	1	PASI-K
		EPA 300.0	MGS	1	PASI-K
		EPA 353.2	AJS	3	PASI-K
		SM 5310C	MJK	1	PASI-K
60319241007	MW-83-201910	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60319241008	ITMW-18-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241009	ITMW-19-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241010	MW-93-201910	EPA 5030B/8260	PGH, WNM	38	PASI-K
60319241011	MW-189-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241012	TMW-36-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241013	MW-185-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241014	MW-27-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241015	ITMW-2R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241016	ITMW-11-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241017	ITMW-12R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241018	MW-91-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241019	ITMW-21-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241020	MW-85R-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241021	IW-134-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241022	MW-37-201910	EPA 5030B/8260	PGH, WNM	38	PASI-K
60319241023	ITMW-16-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241024	ITMW-10-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241025	ITMW-5-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241026	IW-132-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241027	DUP-08-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241028	DUP-09-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241029	DUP-10-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241030	EB-04-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241031	EB-05-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241032	MW-179-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241033	TB-06-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241034	TB-07-201910	EPA 5030B/8260	PGH	38	PASI-K
60319241035	TB-08-201910	EPA 5030B/8260	PGH	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
6 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
35 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 619619

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 619753

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 619801

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 620343

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 620685

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll Environ_AR
Date: November 11, 2019

Analyte Comments:

QC Batch: 619619

1e: Sample was analyzed at a 5x dilution which resulted in a non-dection. Sample was re-analyzed at a 1x dilution and the result matched the initial run.

- ITMW-19-201910 (Lab ID: 60319241009)
  - Trichloroethene

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- ITMW-19-201910 (Lab ID: 60319241009)
  - Trichloroethene

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **SM 4500-S-2 D**
Description: 4500S2D Sulfide, Total
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
2 samples were analyzed for SM 4500-S-2 D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
6 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 unpres
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
2 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 618401

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60319241005

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2523315)
  - Nitrogen, Nitrite

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 pres.
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
4 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 619108

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60319076002,60319190001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2525615)
  - Nitrogen, NO2 plus NO3

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **SM 5310C**
Description: 5310C TOC
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
6 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Method: **SM 5310C**
Description: 5310C Diss. Organic Carbon LF
Client: Ramboll Environ_AR
Date: November 11, 2019

General Information:
4 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 619520

B: Analyte was detected in the associated method blank.
- BLANK for HBN 619520 [WETA/631 (Lab ID: 2526889)
  - Dissolved Organic Carbon

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-34-201910 **Lab ID: 60319241001** Collected: 10/24/19 17:30 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**2110**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:17	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 17:09	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 17:09	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 17:09	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 17:09	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 17:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 17:09	78-93-3	
Carbon disulfide	**0.27J**	ug/L	5.0	0.16	1		11/01/19 17:09	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 17:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 17:09	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 17:09	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 17:09	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 17:09	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 17:09	124-48-1	
1,1-Dichloroethane	**0.14J**	ug/L	1.0	0.097	1		11/01/19 17:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 17:09	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:09	75-35-4	
cis-1,2-Dichloroethene	**6.9**	ug/L	1.0	0.17	1		11/01/19 17:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 17:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 17:09	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 17:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 17:09	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 17:09	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 17:09	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 17:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 17:09	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 17:09	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 17:09	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:09	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 17:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 17:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 17:09	79-00-5	
Trichloroethene	**17.6**	ug/L	1.0	0.17	1		11/01/19 17:09	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		11/01/19 17:09	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 17:09	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/01/19 17:09	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		11/01/19 17:09	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/01/19 17:09	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 17:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**26.0**	mg/L	2.0	0.44	2		11/07/19 03:38	16887-00-6	
Sulfate	**10.4**	mg/L	1.0	0.23	1		11/07/19 02:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-34-201910 **Lab ID: 60319241001** Collected: 10/24/19 17:30 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.0**	mg/L	0.10	0.038	1		10/30/19 10:00		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.56J**	mg/L	1.0	0.29	1		11/01/19 17:09	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**6.5**	mg/L	1.0	0.29	1		11/01/19 01:26		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-32-201910 **Lab ID: 60319241002** Collected: 10/24/19 15:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**12500**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:24	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 17:52	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 17:52	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 17:52	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 17:52	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 17:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 17:52	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/01/19 17:52	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 17:52	56-23-5	
Chlorobenzene	**2.7**	ug/L	1.0	0.13	1		11/01/19 17:52	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 17:52	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 17:52	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 17:52	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 17:52	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 17:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 17:52	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:52	75-35-4	
cis-1,2-Dichloroethene	**21.0**	ug/L	1.0	0.17	1		11/01/19 17:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 17:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 17:52	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 17:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 17:52	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 17:52	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 17:52	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 17:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 17:52	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 17:52	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 17:52	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:52	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 17:52	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 17:52	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 17:52	79-00-5	
Trichloroethene	**29.2**	ug/L	1.0	0.17	1		11/01/19 17:52	79-01-6	
Vinyl chloride	**0.13J**	ug/L	1.0	0.11	1		11/01/19 17:52	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 17:52	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	80-120		1		11/01/19 17:52	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/01/19 17:52	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 17:52	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 17:52		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**110**	mg/L	10.0	2.2	10		11/05/19 19:08	16887-00-6	
Sulfate	**27.2**	mg/L	2.0	0.46	2		11/07/19 04:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-32-201910 **Lab ID: 60319241002** Collected: 10/24/19 15:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.056J**	mg/L	0.10	0.038	1		10/30/19 10:01		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**2.2**	mg/L	1.0	0.29	1		11/01/19 17:35	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**1.3**	mg/L	1.0	0.29	1		11/01/19 01:40		B

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-186-201910 **Lab ID: 60319241003** Collected: 10/24/19 13:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**39400**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:26	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 18:34	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 18:34	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 18:34	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 18:34	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 18:34	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/01/19 18:34	78-93-3	
Carbon disulfide	**0.81J**	ug/L	5.0	0.16	1		11/01/19 18:34	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 18:34	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/01/19 18:34	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 18:34	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 18:34	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 18:34	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 18:34	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 18:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 18:34	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 18:34	75-35-4	
cis-1,2-Dichloroethene	**3.0**	ug/L	1.0	0.17	1		11/01/19 18:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 18:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 18:34	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 18:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 18:34	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 18:34	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 18:34	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 18:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	**0.68J**	ug/L	10.0	0.56	1		11/01/19 18:34	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 18:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 18:34	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 18:34	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/01/19 18:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 18:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 18:34	79-00-5	
Trichloroethene	**2.9**	ug/L	1.0	0.17	1		11/01/19 18:34	79-01-6	
Vinyl chloride	**2.2**	ug/L	1.0	0.11	1		11/01/19 18:34	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 18:34	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/01/19 18:34	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/01/19 18:34	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/01/19 18:34	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 18:34		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**155**	mg/L	10.0	2.2	10		11/05/19 19:41	16887-00-6	
Sulfate	**6.5**	mg/L	1.0	0.23	1		11/07/19 04:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-186-201910 **Lab ID: 60319241003** Collected: 10/24/19 13:15 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**0.16**	mg/L	0.10	0.038	1		10/30/19 10:03		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**40.1**	mg/L	10.0	2.9	10		11/01/19 17:49	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**34.1**	mg/L	10.0	2.9	10		11/01/19 23:22		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-25-201910 **Lab ID: 60319241004** Collected: 10/24/19 10:55 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**23600**	ug/L	50.0	14.0	1	10/28/19 15:26	10/29/19 14:29	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/01/19 17:23	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/01/19 17:23	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/01/19 17:23	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/01/19 17:23	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/01/19 17:23	74-83-9	
2-Butanone (MEK)	**15.8**	ug/L	10.0	0.70	1		11/01/19 17:23	78-93-3	
Carbon disulfide	**0.31J**	ug/L	5.0	0.16	1		11/01/19 17:23	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/01/19 17:23	56-23-5	
Chlorobenzene	**5.3**	ug/L	1.0	0.13	1		11/01/19 17:23	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/01/19 17:23	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/01/19 17:23	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/01/19 17:23	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/01/19 17:23	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		11/01/19 17:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/01/19 17:23	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:23	75-35-4	
cis-1,2-Dichloroethene	**39.9**	ug/L	1.0	0.17	1		11/01/19 17:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/01/19 17:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/01/19 17:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/01/19 17:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/01/19 17:23	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/01/19 17:23	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/01/19 17:23	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/01/19 17:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/01/19 17:23	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/01/19 17:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/01/19 17:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/01/19 17:23	127-18-4	
Toluene	**0.15J**	ug/L	1.0	0.14	1		11/01/19 17:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/01/19 17:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/01/19 17:23	79-00-5	
Trichloroethene	**23.6**	ug/L	1.0	0.17	1		11/01/19 17:23	79-01-6	
Vinyl chloride	**0.41J**	ug/L	1.0	0.11	1		11/01/19 17:23	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/01/19 17:23	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/01/19 17:23	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	77-122		1		11/01/19 17:23	17060-07-0	
Toluene-d8 (S)	102	%	80-120		1		11/01/19 17:23	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/01/19 17:23		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**149**	mg/L	10.0	2.2	10		11/05/19 20:14	16887-00-6	
Sulfate	**19.2**	mg/L	2.0	0.46	2		11/07/19 05:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-25-201910 **Lab ID: 60319241004** Collected: 10/24/19 10:55 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.3**	mg/L	0.10	0.038	1		10/30/19 10:04		
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**43.4**	mg/L	10.0	2.9	10		11/01/19 18:02	7440-44-0	
5310C Diss. Organic Carbon LF	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**39.3**	mg/L	10.0	2.9	10		11/02/19 00:02		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: TMW-36-201910 **Lab ID: 60319241012** Collected: 10/24/19 10:46 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 12:39	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 12:39	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 12:39	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 12:39	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 12:39	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 12:39	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 12:39	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 12:39	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 12:39	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 12:39	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 12:39	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 12:39	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 12:39	124-48-1	
1,1-Dichloroethane	**0.99J**	ug/L	1.0	0.097	1		11/04/19 12:39	75-34-3	
1,2-Dichloroethane	**0.14J**	ug/L	1.0	0.14	1		11/04/19 12:39	107-06-2	
1,1-Dichloroethene	**1.1**	ug/L	1.0	0.22	1		11/04/19 12:39	75-35-4	
cis-1,2-Dichloroethene	**8.4**	ug/L	1.0	0.17	1		11/04/19 12:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 12:39	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 12:39	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 12:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 12:39	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 12:39	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 12:39	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 12:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 12:39	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 12:39	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 12:39	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 12:39	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 12:39	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 12:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 12:39	79-00-5	
Trichloroethene	**389**	ug/L	5.0	0.85	5		11/04/19 12:53	79-01-6	
Vinyl chloride	**0.31J**	ug/L	1.0	0.11	1		11/04/19 12:39	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 12:39	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		11/04/19 12:39	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	77-122		1		11/04/19 12:39	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		11/04/19 12:39	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 12:39		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-185-201910 **Lab ID: 60319241013** Collected: 10/24/19 14:29 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 08:08	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 08:08	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 08:08	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 08:08	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 08:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 08:08	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 08:08	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 08:08	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 08:08	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 08:08	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 08:08	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 08:08	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 08:08	124-48-1	
1,1-Dichloroethane	**0.27J**	ug/L	1.0	0.097	1		11/04/19 08:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 08:08	107-06-2	
1,1-Dichloroethene	**0.67J**	ug/L	1.0	0.22	1		11/04/19 08:08	75-35-4	
cis-1,2-Dichloroethene	**6.3**	ug/L	1.0	0.17	1		11/04/19 08:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		11/04/19 08:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 08:08	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 08:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 08:08	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 08:08	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 08:08	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 08:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 08:08	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 08:08	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 08:08	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		11/04/19 08:08	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 08:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 08:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 08:08	79-00-5	
Trichloroethene	**52.7**	ug/L	1.0	0.17	1		11/04/19 08:08	79-01-6	
Vinyl chloride	**0.12J**	ug/L	1.0	0.11	1		11/04/19 08:08	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 08:08	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/04/19 08:08	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	77-122		1		11/04/19 08:08	17060-07-0	
Toluene-d8 (S)	99	%	80-120		1		11/04/19 08:08	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 08:08		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Sample: MW-91-201910 **Lab ID: 60319241018** Collected: 10/24/19 14:20 Received: 10/25/19 02:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		11/04/19 13:07	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		11/04/19 13:07	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		11/04/19 13:07	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		11/04/19 13:07	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		11/04/19 13:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		11/04/19 13:07	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		11/04/19 13:07	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		11/04/19 13:07	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		11/04/19 13:07	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		11/04/19 13:07	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		11/04/19 13:07	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		11/04/19 13:07	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		11/04/19 13:07	124-48-1	
1,1-Dichloroethane	**1.2**	ug/L	1.0	0.097	1		11/04/19 13:07	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		11/04/19 13:07	107-06-2	
1,1-Dichloroethene	**3.4**	ug/L	1.0	0.22	1		11/04/19 13:07	75-35-4	
cis-1,2-Dichloroethene	**26.8**	ug/L	1.0	0.17	1		11/04/19 13:07	156-59-2	
trans-1,2-Dichloroethene	**0.47J**	ug/L	1.0	0.17	1		11/04/19 13:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		11/04/19 13:07	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		11/04/19 13:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		11/04/19 13:07	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		11/04/19 13:07	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		11/04/19 13:07	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		11/04/19 13:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		11/04/19 13:07	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		11/04/19 13:07	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		11/04/19 13:07	79-34-5	
Tetrachloroethene	**3.4**	ug/L	1.0	0.22	1		11/04/19 13:07	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		11/04/19 13:07	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		11/04/19 13:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		11/04/19 13:07	79-00-5	
Trichloroethene	**437**	ug/L	10.0	1.7	10		11/04/19 13:21	79-01-6	
Vinyl chloride	**0.18J**	ug/L	1.0	0.11	1		11/04/19 13:07	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		11/04/19 13:07	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		11/04/19 13:07	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		11/04/19 13:07	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		11/04/19 13:07	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		11/04/19 13:07		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 618695 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006

METHOD BLANK: 2524474 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	14.0	10/29/19 14:15	

LABORATORY CONTROL SAMPLE: 2524475

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	10100	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2524476 2524477

Parameter	Units	60319292002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	0.11 mg/L	10000	10000	9790	9650	97	95	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619619 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006, 60319241007, 60319241008, 60319241009

METHOD BLANK: 2527137 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006, 60319241007, 60319241008, 60319241009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/01/19 14:17	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/01/19 14:17	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/01/19 14:17	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/01/19 14:17	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/01/19 14:17	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/01/19 14:17	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/01/19 14:17	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/01/19 14:17	
2-Hexanone	ug/L	ND	10.0	1.0	11/01/19 14:17	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/01/19 14:17	
Acetone	ug/L	ND	10.0	3.3	11/01/19 14:17	
Benzene	ug/L	ND	1.0	0.079	11/01/19 14:17	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/01/19 14:17	
Bromoform	ug/L	ND	1.0	0.21	11/01/19 14:17	
Bromomethane	ug/L	ND	5.0	0.32	11/01/19 14:17	
Carbon disulfide	ug/L	ND	5.0	0.16	11/01/19 14:17	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/01/19 14:17	
Chlorobenzene	ug/L	ND	1.0	0.13	11/01/19 14:17	
Chloroethane	ug/L	ND	1.0	0.42	11/01/19 14:17	
Chloroform	ug/L	ND	1.0	0.10	11/01/19 14:17	
Chloromethane	ug/L	ND	1.0	0.16	11/01/19 14:17	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/01/19 14:17	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/01/19 14:17	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/01/19 14:17	
Ethylbenzene	ug/L	ND	1.0	0.12	11/01/19 14:17	
Methylene Chloride	ug/L	ND	1.0	0.27	11/01/19 14:17	
Styrene	ug/L	ND	1.0	0.15	11/01/19 14:17	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/01/19 14:17	
Toluene	ug/L	ND	1.0	0.14	11/01/19 14:17	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/01/19 14:17	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/01/19 14:17	
Trichloroethene	ug/L	ND	1.0	0.17	11/01/19 14:17	
Vinyl chloride	ug/L	ND	1.0	0.11	11/01/19 14:17	
Xylene (Total)	ug/L	ND	3.0	0.34	11/01/19 14:17	
1,2-Dichloroethane-d4 (S)	%	98	77-122		11/01/19 14:17	
4-Bromofluorobenzene (S)	%	101	80-120		11/01/19 14:17	
Toluene-d8 (S)	%	102	80-120		11/01/19 14:17	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

LABORATORY CONTROL SAMPLE: 2527138

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.2	101	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	20.1	100	71-122	
1,1,2-Trichloroethane	ug/L	20	20.1	101	76-123	
1,1-Dichloroethane	ug/L	20	20.9	105	78-117	
1,1-Dichloroethene	ug/L	20	22.7	114	74-122	
1,2-Dichloroethane	ug/L	20	20.3	102	73-120	
1,2-Dichloropropane	ug/L	20	20.3	101	78-115	
2-Butanone (MEK)	ug/L	100	103	103	54-133	
2-Hexanone	ug/L	100	100	100	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	108	108	62-130	
Acetone	ug/L	100	95.6	96	54-130	
Benzene	ug/L	20	19.8	99	80-120	
Bromodichloromethane	ug/L	20	19.1	95	78-121	
Bromoform	ug/L	20	16.1	81	62-137	
Bromomethane	ug/L	20	22.3	112	41-145	
Carbon disulfide	ug/L	20	20.1	101	64-119	
Carbon tetrachloride	ug/L	20	19.9	99	77-122	
Chlorobenzene	ug/L	20	20.2	101	80-123	
Chloroethane	ug/L	20	21.0	105	60-146	
Chloroform	ug/L	20	21.5	107	81-116	
Chloromethane	ug/L	20	22.3	112	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.1	100	80-120	
cis-1,3-Dichloropropene	ug/L	20	19.2	96	78-118	
Dibromochloromethane	ug/L	20	17.5	87	73-128	
Ethylbenzene	ug/L	20	19.9	100	80-120	
Methylene Chloride	ug/L	20	21.6	108	80-126	
Styrene	ug/L	20	19.5	98	85-120	
Tetrachloroethene	ug/L	20	18.7	93	77-121	
Toluene	ug/L	20	19.3	96	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.5	98	80-120	
trans-1,3-Dichloropropene	ug/L	20	16.9	85	76-123	
Trichloroethene	ug/L	20	22.2	111	80-121	
Vinyl chloride	ug/L	20	20.9	105	46-162	
Xylene (Total)	ug/L	60	59.7	100	80-120	
1,2-Dichloroethane-d4 (S)	%			106	77-122	
4-Bromofluorobenzene (S)	%			96	80-120	
Toluene-d8 (S)	%			98	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619753 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319241010, 60319241011, 60319241012, 60319241013, 60319241014, 60319241015, 60319241016, 60319241017, 60319241018, 60319241019, 60319241020, 60319241021, 60319241022, 60319241023, 60319241024, 60319241025, 60319241026, 60319241027, 60319241028, 60319241029

METHOD BLANK: 2527618 Matrix: Water
Associated Lab Samples: 60319241010, 60319241011, 60319241012, 60319241013, 60319241014, 60319241015, 60319241016, 60319241017, 60319241018, 60319241019, 60319241020, 60319241021, 60319241022, 60319241023, 60319241024, 60319241025, 60319241026, 60319241027, 60319241028, 60319241029

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/04/19 07:53	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/04/19 07:53	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/04/19 07:53	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/04/19 07:53	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/04/19 07:53	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/04/19 07:53	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/04/19 07:53	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/04/19 07:53	
2-Hexanone	ug/L	ND	10.0	1.0	11/04/19 07:53	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/04/19 07:53	
Acetone	ug/L	ND	10.0	3.3	11/04/19 07:53	
Benzene	ug/L	ND	1.0	0.079	11/04/19 07:53	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/04/19 07:53	
Bromoform	ug/L	ND	1.0	0.21	11/04/19 07:53	
Bromomethane	ug/L	ND	5.0	0.32	11/04/19 07:53	
Carbon disulfide	ug/L	ND	5.0	0.16	11/04/19 07:53	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/04/19 07:53	
Chlorobenzene	ug/L	ND	1.0	0.13	11/04/19 07:53	
Chloroethane	ug/L	ND	1.0	0.42	11/04/19 07:53	
Chloroform	ug/L	ND	1.0	0.10	11/04/19 07:53	
Chloromethane	ug/L	ND	1.0	0.16	11/04/19 07:53	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/04/19 07:53	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/04/19 07:53	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/04/19 07:53	
Ethylbenzene	ug/L	ND	1.0	0.12	11/04/19 07:53	
Methylene Chloride	ug/L	ND	1.0	0.27	11/04/19 07:53	
Styrene	ug/L	ND	1.0	0.15	11/04/19 07:53	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/04/19 07:53	
Toluene	ug/L	ND	1.0	0.14	11/04/19 07:53	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/04/19 07:53	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/04/19 07:53	
Trichloroethene	ug/L	ND	1.0	0.17	11/04/19 07:53	
Vinyl chloride	ug/L	ND	1.0	0.11	11/04/19 07:53	
Xylene (Total)	ug/L	ND	3.0	0.34	11/04/19 07:53	
1,2-Dichloroethane-d4 (S)	%	101	77-122		11/04/19 07:53	
4-Bromofluorobenzene (S)	%	100	80-120		11/04/19 07:53	
Toluene-d8 (S)	%	100	80-120		11/04/19 07:53	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

LABORATORY CONTROL SAMPLE: 2527619

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.6	103	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	20.4	102	71-122	
1,1,2-Trichloroethane	ug/L	20	20.6	103	76-123	
1,1-Dichloroethane	ug/L	20	21.0	105	78-117	
1,1-Dichloroethene	ug/L	20	22.2	111	74-122	
1,2-Dichloroethane	ug/L	20	19.8	99	73-120	
1,2-Dichloropropane	ug/L	20	21.3	106	78-115	
2-Butanone (MEK)	ug/L	100	99.4	99	54-133	
2-Hexanone	ug/L	100	97.0	97	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	102	102	62-130	
Acetone	ug/L	100	89.3	89	54-130	
Benzene	ug/L	20	20.6	103	80-120	
Bromodichloromethane	ug/L	20	19.2	96	78-121	
Bromoform	ug/L	20	18.0	90	62-137	
Bromomethane	ug/L	20	22.5	112	41-145	
Carbon disulfide	ug/L	20	20.5	103	64-119	
Carbon tetrachloride	ug/L	20	20.9	104	77-122	
Chlorobenzene	ug/L	20	20.2	101	80-123	
Chloroethane	ug/L	20	20.8	104	60-146	
Chloroform	ug/L	20	21.1	106	81-116	
Chloromethane	ug/L	20	21.6	108	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.1	100	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.1	100	78-118	
Dibromochloromethane	ug/L	20	18.0	90	73-128	
Ethylbenzene	ug/L	20	19.8	99	80-120	
Methylene Chloride	ug/L	20	21.2	106	80-126	
Styrene	ug/L	20	19.9	99	85-120	
Tetrachloroethene	ug/L	20	20.0	100	77-121	
Toluene	ug/L	20	19.9	99	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.9	99	80-120	
trans-1,3-Dichloropropene	ug/L	20	17.8	89	76-123	
Trichloroethene	ug/L	20	22.3	112	80-121	
Vinyl chloride	ug/L	20	21.1	106	46-162	
Xylene (Total)	ug/L	60	60.8	101	80-120	
1,2-Dichloroethane-d4 (S)	%			98	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619801 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319241030, 60319241031, 60319241032, 60319241033, 60319241034, 60319241035

METHOD BLANK: 2527747 Matrix: Water
Associated Lab Samples: 60319241030, 60319241031, 60319241032, 60319241033, 60319241034, 60319241035

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/02/19 02:12	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	11/02/19 02:12	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/02/19 02:12	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	11/02/19 02:12	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	11/02/19 02:12	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	11/02/19 02:12	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	11/02/19 02:12	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	11/02/19 02:12	
2-Hexanone	ug/L	ND	10.0	1.0	11/02/19 02:12	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	11/02/19 02:12	
Acetone	ug/L	ND	10.0	3.3	11/02/19 02:12	
Benzene	ug/L	ND	1.0	0.079	11/02/19 02:12	
Bromodichloromethane	ug/L	ND	1.0	0.17	11/02/19 02:12	
Bromoform	ug/L	ND	1.0	0.21	11/02/19 02:12	
Bromomethane	ug/L	ND	5.0	0.32	11/02/19 02:12	
Carbon disulfide	ug/L	ND	5.0	0.16	11/02/19 02:12	
Carbon tetrachloride	ug/L	ND	1.0	0.084	11/02/19 02:12	
Chlorobenzene	ug/L	ND	1.0	0.13	11/02/19 02:12	
Chloroethane	ug/L	ND	1.0	0.42	11/02/19 02:12	
Chloroform	ug/L	ND	1.0	0.10	11/02/19 02:12	
Chloromethane	ug/L	ND	1.0	0.16	11/02/19 02:12	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/02/19 02:12	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	11/02/19 02:12	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/02/19 02:12	
Ethylbenzene	ug/L	ND	1.0	0.12	11/02/19 02:12	
Methylene Chloride	ug/L	ND	1.0	0.27	11/02/19 02:12	
Styrene	ug/L	ND	1.0	0.15	11/02/19 02:12	
Tetrachloroethene	ug/L	ND	1.0	0.22	11/02/19 02:12	
Toluene	ug/L	ND	1.0	0.14	11/02/19 02:12	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/02/19 02:12	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	11/02/19 02:12	
Trichloroethene	ug/L	ND	1.0	0.17	11/02/19 02:12	
Vinyl chloride	ug/L	ND	1.0	0.11	11/02/19 02:12	
Xylene (Total)	ug/L	ND	3.0	0.34	11/02/19 02:12	
1,2-Dichloroethane-d4 (S)	%	101	77-122		11/02/19 02:12	
4-Bromofluorobenzene (S)	%	100	80-120		11/02/19 02:12	
Toluene-d8 (S)	%	100	80-120		11/02/19 02:12	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

LABORATORY CONTROL SAMPLE: 2527748

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.6	98	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	18.7	94	71-122	
1,1,2-Trichloroethane	ug/L	20	20.3	102	76-123	
1,1-Dichloroethane	ug/L	20	20.3	102	78-117	
1,1-Dichloroethene	ug/L	20	22.8	114	74-122	
1,2-Dichloroethane	ug/L	20	19.6	98	73-120	
1,2-Dichloropropane	ug/L	20	20.7	104	78-115	
2-Butanone (MEK)	ug/L	100	100	100	54-133	
2-Hexanone	ug/L	100	94.8	95	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	103	103	62-130	
Acetone	ug/L	100	84.1	84	54-130	
Benzene	ug/L	20	20.2	101	80-120	
Bromodichloromethane	ug/L	20	18.3	92	78-121	
Bromoform	ug/L	20	15.6	78	62-137	
Bromomethane	ug/L	20	21.2	106	41-145	
Carbon disulfide	ug/L	20	19.7	99	64-119	
Carbon tetrachloride	ug/L	20	19.5	98	77-122	
Chlorobenzene	ug/L	20	20.1	101	80-123	
Chloroethane	ug/L	20	20.5	103	60-146	
Chloroform	ug/L	20	21.0	105	81-116	
Chloromethane	ug/L	20	21.2	106	29-154	
cis-1,2-Dichloroethene	ug/L	20	19.3	96	80-120	
cis-1,3-Dichloropropene	ug/L	20	18.4	92	78-118	
Dibromochloromethane	ug/L	20	17.4	87	73-128	
Ethylbenzene	ug/L	20	19.4	97	80-120	
Methylene Chloride	ug/L	20	21.7	108	80-126	
Styrene	ug/L	20	19.4	97	85-120	
Tetrachloroethene	ug/L	20	19.1	95	77-121	
Toluene	ug/L	20	19.5	98	80-120	
trans-1,2-Dichloroethene	ug/L	20	19.1	96	80-120	
trans-1,3-Dichloropropene	ug/L	20	16.6	83	76-123	
Trichloroethene	ug/L	20	24.0	120	80-121	
Vinyl chloride	ug/L	20	20.8	104	46-162	
Xylene (Total)	ug/L	60	58.1	97	80-120	
1,2-Dichloroethane-d4 (S)	%			101	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			98	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 620343 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319241008, 60319241011, 60319241016, 60319241017, 60319241020, 60319241021, 60319241027, 60319241028, 60319241029

METHOD BLANK: 2529674 Matrix: Water
Associated Lab Samples: 60319241008, 60319241011, 60319241016, 60319241017, 60319241020, 60319241021, 60319241027, 60319241028, 60319241029

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/05/19 14:42	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	11/05/19 14:42	
Trichloroethene	ug/L	ND	1.0	0.17	11/05/19 14:42	
1,2-Dichloroethane-d4 (S)	%	99	77-122		11/05/19 14:42	
4-Bromofluorobenzene (S)	%	99	80-120		11/05/19 14:42	
Toluene-d8 (S)	%	101	80-120		11/05/19 14:42	

LABORATORY CONTROL SAMPLE: 2529675

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.5	97	79-120	
cis-1,2-Dichloroethene	ug/L	20	18.8	94	80-120	
Trichloroethene	ug/L	20	21.8	109	80-121	
1,2-Dichloroethane-d4 (S)	%			100	77-122	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			99	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 620685 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60319241005, 60319241006, 60319241010, 60319241022

METHOD BLANK: 2530997 Matrix: Water
Associated Lab Samples: 60319241005, 60319241006, 60319241010, 60319241022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	11/06/19 12:12	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.23	11/06/19 12:12	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	11/06/19 12:12	
1,1-Dichloroethane	ug/L	ND	1.0	0.12	11/06/19 12:12	
1,1-Dichloroethene	ug/L	ND	1.0	0.14	11/06/19 12:12	
1,2-Dichloroethane	ug/L	ND	1.0	0.33	11/06/19 12:12	
1,2-Dichloropropane	ug/L	ND	1.0	0.14	11/06/19 12:12	
2-Butanone (MEK)	ug/L	ND	10.0	1.8	11/06/19 12:12	
2-Hexanone	ug/L	ND	10.0	1.6	11/06/19 12:12	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	1.3	11/06/19 12:12	
Acetone	ug/L	ND	10.0	7.4	11/06/19 12:12	
Benzene	ug/L	ND	1.0	0.13	11/06/19 12:12	
Bromodichloromethane	ug/L	ND	1.0	0.14	11/06/19 12:12	
Bromoform	ug/L	ND	1.0	0.28	11/06/19 12:12	
Bromomethane	ug/L	ND	5.0	2.8	11/06/19 12:12	
Carbon disulfide	ug/L	ND	5.0	0.086	11/06/19 12:12	
Carbon tetrachloride	ug/L	ND	1.0	0.070	11/06/19 12:12	
Chlorobenzene	ug/L	ND	1.0	0.17	11/06/19 12:12	
Chloroethane	ug/L	ND	1.0	0.83	11/06/19 12:12	
Chloroform	ug/L	ND	1.0	0.25	11/06/19 12:12	
Chloromethane	ug/L	ND	1.0	0.51	11/06/19 12:12	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.18	11/06/19 12:12	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.18	11/06/19 12:12	
Dibromochloromethane	ug/L	ND	1.0	0.15	11/06/19 12:12	
Ethylbenzene	ug/L	ND	1.0	0.20	11/06/19 12:12	
Methylene Chloride	ug/L	ND	1.0	0.35	11/06/19 12:12	
Styrene	ug/L	ND	1.0	0.19	11/06/19 12:12	
Tetrachloroethene	ug/L	ND	1.0	0.14	11/06/19 12:12	
Toluene	ug/L	ND	1.0	0.17	11/06/19 12:12	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.082	11/06/19 12:12	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.18	11/06/19 12:12	
Vinyl chloride	ug/L	ND	1.0	0.17	11/06/19 12:12	
Xylene (Total)	ug/L	ND	3.0	0.42	11/06/19 12:12	
1,2-Dichloroethane-d4 (S)	%	100	77-122		11/06/19 12:12	
4-Bromofluorobenzene (S)	%	89	80-120		11/06/19 12:12	
Toluene-d8 (S)	%	100	80-120		11/06/19 12:12	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

LABORATORY CONTROL SAMPLE: 2530998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.4	102	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.2	96	71-122	
1,1,2-Trichloroethane	ug/L	20	22.3	112	76-123	
1,1-Dichloroethane	ug/L	20	20.7	104	78-117	
1,1-Dichloroethene	ug/L	20	21.2	106	74-122	
1,2-Dichloroethane	ug/L	20	20.5	102	73-120	
1,2-Dichloropropane	ug/L	20	20.8	104	78-115	
2-Butanone (MEK)	ug/L	100	104	104	54-133	
2-Hexanone	ug/L	100	108	108	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	110	110	62-130	
Acetone	ug/L	100	105	105	54-130	
Benzene	ug/L	20	20.4	102	80-120	
Bromodichloromethane	ug/L	20	20.7	104	78-121	
Bromoform	ug/L	20	22.9	114	62-137	
Bromomethane	ug/L	20	15.4	77	41-145	
Carbon disulfide	ug/L	20	21.5	108	64-119	
Carbon tetrachloride	ug/L	20	21.2	106	77-122	
Chlorobenzene	ug/L	20	21.3	106	80-123	
Chloroethane	ug/L	20	21.6	108	60-146	
Chloroform	ug/L	20	20.0	100	81-116	
Chloromethane	ug/L	20	24.7	123	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.7	103	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.7	104	78-118	
Dibromochloromethane	ug/L	20	21.9	110	73-128	
Ethylbenzene	ug/L	20	22.3	112	80-120	
Methylene Chloride	ug/L	20	23.1	115	80-126	
Styrene	ug/L	20	21.0	105	85-120	
Tetrachloroethene	ug/L	20	22.0	110	77-121	
Toluene	ug/L	20	20.4	102	80-120	
trans-1,2-Dichloroethene	ug/L	20	20.2	101	80-120	
trans-1,3-Dichloropropene	ug/L	20	19.6	98	76-123	
Vinyl chloride	ug/L	20	21.6	108	46-162	
Xylene (Total)	ug/L	60	66.4	111	80-120	
1,2-Dichloroethane-d4 (S)	%			103	77-122	
4-Bromofluorobenzene (S)	%			91	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619293 Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D Analysis Description: 4500S2D Sulfide, Total
Associated Lab Samples: 60319241005, 60319241006

METHOD BLANK: 2526229 Matrix: Water
Associated Lab Samples: 60319241005, 60319241006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	ND	0.050	0.039	10/30/19 14:44	

LABORATORY CONTROL SAMPLE: 2526230

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.50	100	80-120	

MATRIX SPIKE SAMPLE: 2526231

Parameter	Units	60319241005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.5	0.50	99	75-125	

SAMPLE DUPLICATE: 2526232

Parameter	Units	60319468001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 620357 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241006

METHOD BLANK: 2529754 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	11/07/19 02:15	
Sulfate	mg/L	ND	1.0	0.23	11/07/19 02:15	

LABORATORY CONTROL SAMPLE: 2529755

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	
Sulfate	mg/L	5	5.2	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2529756 2529757

Parameter	Units	60319241001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	26.0	10	10	37.3	37.3	113	113	80-120	0	15	
Sulfate	mg/L	10.4	5	5	16.0	15.9	110	109	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 620925
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60319241005

METHOD BLANK: 2531883 Matrix: Water
Associated Lab Samples: 60319241005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	0.23	11/08/19 09:31	

LABORATORY CONTROL SAMPLE: 2531884

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.3	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2531885 2531886

Parameter	Units	60319214001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	310	250	250	566	564	102	102	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 618401
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 60319241005, 60319241006

METHOD BLANK: 2523313 Matrix: Water
Associated Lab Samples: 60319241005, 60319241006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	0.067	10/25/19 15:26	
Nitrogen, Nitrite	mg/L	ND	0.10	0.067	10/25/19 15:26	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	10/25/19 15:26	

LABORATORY CONTROL SAMPLE: 2523314

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	1.0	100	70-130	
Nitrogen, Nitrite	mg/L	1	1.1	106	90-110	
Nitrogen, NO2 plus NO3	mg/L	2	2.1	103	90-110	

MATRIX SPIKE SAMPLE: 2523315

Parameter	Units	60319241005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	0.20	1	1.1	93	70-130	
Nitrogen, Nitrite	mg/L	ND	1	1.2	113	90-110	M1
Nitrogen, NO2 plus NO3	mg/L	0.20	2	2.3	106	90-110	

SAMPLE DUPLICATE: 2523316

Parameter	Units	60319261001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	4.2	4.2	0	20	
Nitrogen, Nitrite	mg/L	ND	ND		20	
Nitrogen, NO2 plus NO3	mg/L	4.2	4.2	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619108 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004

METHOD BLANK: 2525611 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	10/30/19 09:51	

LABORATORY CONTROL SAMPLE: 2525612

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	2	2.0	99	90-110	

MATRIX SPIKE SAMPLE: 2525613

Parameter	Units	60319076002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	0.32	2	2.2	95	90-110	

MATRIX SPIKE SAMPLE: 2525615

Parameter	Units	60319190001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	3.9	2	4.2	14	90-110	M1

SAMPLE DUPLICATE: 2525614

Parameter	Units	60319076004 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, NO2 plus NO3	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619790 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006

METHOD BLANK: 2527704 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002, 60319241003, 60319241004, 60319241005, 60319241006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	11/01/19 16:02	

LABORATORY CONTROL SAMPLE: 2527705

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.5	110	80-120	

MATRIX SPIKE SAMPLE: 2527706

Parameter	Units	60319130005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	7.8	5	12.7	99	80-120	

SAMPLE DUPLICATE: 2527707

Parameter	Units	60319241001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	0.56J	0.55J		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619520 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60319241001, 60319241002

METHOD BLANK: 2526889 Matrix: Water
Associated Lab Samples: 60319241001, 60319241002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	0.30J	1.0	0.29	10/31/19 22:45	

LABORATORY CONTROL SAMPLE: 2526890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.5	111	80-120	

MATRIX SPIKE SAMPLE: 2526891

Parameter	Units	60319115044 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	203	125	329	101	80-120	

SAMPLE DUPLICATE: 2526892

Parameter	Units	60319115061 Result	Dup Result	RPD	Max RPD	Qualifiers
Dissolved Organic Carbon	mg/L	0.81J	0.78J		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

QC Batch: 619793 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60319241003, 60319241004

METHOD BLANK: 2527711 Matrix: Water
Associated Lab Samples: 60319241003, 60319241004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.29	11/01/19 22:28	

LABORATORY CONTROL SAMPLE: 2527712

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.7	113	80-120	

MATRIX SPIKE SAMPLE: 2527713

Parameter	Units	10497396001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	2.9	5	8.5	112	80-120	

SAMPLE DUPLICATE: 2527714

Parameter	Units	60319241004 Result	Dup Result	RPD	Max RPD	Qualifiers
Dissolved Organic Carbon	mg/L	39.3	39.2	0	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 619619

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 619753

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 619801

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 620343

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 620685

[M5]	A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1e	Sample was analyzed at a 5x dilution which resulted in a non-dection. Sample was re-analyzed at a 1x dilution and the result matched the initial run.
B	Analyte was detected in the associated method blank.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319241001	TMW-34-201910	EPA 3010	618695	EPA 6010	618728
60319241002	TMW-32-201910	EPA 3010	618695	EPA 6010	618728
60319241003	MW-186-201910	EPA 3010	618695	EPA 6010	618728
60319241004	TMW-25-201910	EPA 3010	618695	EPA 6010	618728
60319241005	IW-147-201910	EPA 3010	618695	EPA 6010	618728
60319241006	MW-95-201910	EPA 3010	618695	EPA 6010	618728
60319241001	TMW-34-201910	EPA 5030B/8260	619619		
60319241002	TMW-32-201910	EPA 5030B/8260	619619		
60319241003	MW-186-201910	EPA 5030B/8260	619619		
60319241004	TMW-25-201910	EPA 5030B/8260	619619		
60319241005	IW-147-201910	EPA 5030B/8260	619619		
60319241005	IW-147-201910	EPA 5030B/8260	620685		
60319241006	MW-95-201910	EPA 5030B/8260	619619		
60319241006	MW-95-201910	EPA 5030B/8260	620685		
60319241007	MW-83-201910	EPA 5030B/8260	619619		
60319241008	ITMW-18-201910	EPA 5030B/8260	619619		
60319241008	ITMW-18-201910	EPA 5030B/8260	620343		
60319241009	ITMW-19-201910	EPA 5030B/8260	619619		
60319241010	MW-93-201910	EPA 5030B/8260	619753		
60319241010	MW-93-201910	EPA 5030B/8260	620685		
60319241011	MW-189-201910	EPA 5030B/8260	619753		
60319241011	MW-189-201910	EPA 5030B/8260	620343		
60319241012	TMW-36-201910	EPA 5030B/8260	619753		
60319241013	MW-185-201910	EPA 5030B/8260	619753		
60319241014	MW-27-201910	EPA 5030B/8260	619753		
60319241015	ITMW-2R-201910	EPA 5030B/8260	619753		
60319241016	ITMW-11-201910	EPA 5030B/8260	619753		
60319241016	ITMW-11-201910	EPA 5030B/8260	620343		
60319241017	ITMW-12R-201910	EPA 5030B/8260	619753		
60319241017	ITMW-12R-201910	EPA 5030B/8260	620343		
60319241018	MW-91-201910	EPA 5030B/8260	619753		
60319241019	ITMW-21-201910	EPA 5030B/8260	619753		
60319241020	MW-85R-201910	EPA 5030B/8260	619753		
60319241020	MW-85R-201910	EPA 5030B/8260	620343		
60319241021	IW-134-201910	EPA 5030B/8260	619753		
60319241021	IW-134-201910	EPA 5030B/8260	620343		
60319241022	MW-37-201910	EPA 5030B/8260	619753		
60319241022	MW-37-201910	EPA 5030B/8260	620685		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH, AR
Pace Project No.: 60319241

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60319241023	ITMW-16-201910	EPA 5030B/8260	619753		
60319241024	ITMW-10-201910	EPA 5030B/8260	619753		
60319241025	ITMW-5-201910	EPA 5030B/8260	619753		
60319241026	IW-132-201910	EPA 5030B/8260	619753		
60319241027	DUP-08-201910	EPA 5030B/8260	619753		
60319241027	DUP-08-201910	EPA 5030B/8260	620343		
60319241028	DUP-09-201910	EPA 5030B/8260	619753		
60319241028	DUP-09-201910	EPA 5030B/8260	620343		
60319241029	DUP-10-201910	EPA 5030B/8260	619753		
60319241029	DUP-10-201910	EPA 5030B/8260	620343		
60319241030	EB-04-201910	EPA 5030B/8260	619801		
60319241031	EB-05-201910	EPA 5030B/8260	619801		
60319241032	MW-179-201910	EPA 5030B/8260	619801		
60319241033	TB-06-201910	EPA 5030B/8260	619801		
60319241034	TB-07-201910	EPA 5030B/8260	619801		
60319241035	TB-08-201910	EPA 5030B/8260	619801		
60319241005	IW-147-201910	SM 4500-S-2 D	619293		
60319241006	MW-95-201910	SM 4500-S-2 D	619293		
60319241001	TMW-34-201910	EPA 300.0	620357		
60319241002	TMW-32-201910	EPA 300.0	620357		
60319241003	MW-186-201910	EPA 300.0	620357		
60319241004	TMW-25-201910	EPA 300.0	620357		
60319241005	IW-147-201910	EPA 300.0	620925		
60319241006	MW-95-201910	EPA 300.0	620357		
60319241005	IW-147-201910	EPA 353.2	618401		
60319241006	MW-95-201910	EPA 353.2	618401		
60319241001	TMW-34-201910	EPA 353.2	619108		
60319241002	TMW-32-201910	EPA 353.2	619108		
60319241003	MW-186-201910	EPA 353.2	619108		
60319241004	TMW-25-201910	EPA 353.2	619108		
60319241001	TMW-34-201910	SM 5310C	619790		
60319241002	TMW-32-201910	SM 5310C	619790		
60319241003	MW-186-201910	SM 5310C	619790		
60319241004	TMW-25-201910	SM 5310C	619790		
60319241005	IW-147-201910	SM 5310C	619790		
60319241006	MW-95-201910	SM 5310C	619790		
60319241001	TMW-34-201910	SM 5310C	619520		
60319241002	TMW-32-201910	SM 5310C	619520		
60319241003	MW-186-201910	SM 5310C	619793		
60319241004	TMW-25-201910	SM 5310C	619793		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Pace Workorder Number or MTJL Log-in

WO# : 60319241

60319241

ALL S

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller

Site Collection Info/Address: 6400 Jenny Lind Rd. Ft Smith

Customer Project Name/Number:

State: AR | County/City: | Time Zone Collected: PT MT (CT) ET

Phone:

Email: hanlers@ramboll.com

Site/Facility ID #:

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print): Haley Anlers

Purchase Order #:

DW PWS ID #:

Collected by (signature): Haley Anlers

Quote #:

DW Location Code #:

Turnaround Date Required: Std

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal: [x] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **

3	D	D	1	U	U	2	U	O	U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other BAK

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8260 VOC Full List	Methane, Ethane, Ethene (MEE)	Methane, Ethane, Ethene, Acetylene (MEEA)	Metals, Total Iron	Sulfate, Nitrate	Sulfate, Nitrate, Chloride	Total Organic Carbon	Dissolved Organic Carbon	Volatile Fatty Acids (VFA)	Sulfide	Hydrogen	Lab Sample # / Comments
TMW-34-201910	GW	G	10/24/19	1730				12	X	X		X		X	X	X	X			001
TMW-32-201910				1515																002
MW-186-201910				1315																003
TMW-25-201910				1055																004
IW-147-201910				1015				11			X		X					X	X	005
MW-95-201910				1305																006
MW-83-201910				1000				3												007
ITMW-18-201910				1300																008
ITMW-19-201910				1125																009
MW-93-201910				1435																010

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used: Zip Lock Peelable Bags

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	NA
Custody Signatures Present	N	NA
Collector Signature Present	N	NA
Bottles intact	N	NA
Correct Bottles	N	NA
Sufficient Volume	N	NA
Samples received on ice	N	NA
VOA - Headspace Acceptable	N	NA
USDA Regulated Soils	Y	N NA
Samples in holding time	N	NA
Residual Chlorine Present	Y	N NA
Cl Strips:		
Sample pH Acceptable	Y	N
pH Strips:		
Sulfide Present	Y	N NA
Lead Acetate Strips:		

60319241

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #:

Cooler Temp Upon Receipt: 1.2 98 °C

Cooler Therm Corr. Factor: 34.1.4 °C 1.1

Cooler Temp Corrected: +0-0 °C

Comments: 3.4.1.41.1

Trip Blank Received: (Y) N N/A HCL MeOH TSP Other

NonConformance(s): (YES) / NO

Page 1 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Haley Anlers/Ramboll	10/24/19 1800	INTACT	10-25-19 0210
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

Page 7 of 117

Pace Analytical®

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweiler

Site Collection Info/Address:

Customer Project Name/Number:

State County/City Time Zone Collected / PT MT CT ET

Phone:
Email:

SEE PAGE 1

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print):

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature):

Turnaround Date Required:

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive _____
[ ] Hold _____

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

Analyses: 8260 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60319241

↓ LAB USE ONLY: ↓

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8260 VOC Full List	Lab Sample # / Comments
MW-189-201910	GW	G	10/24/19	0932				3	X	011
TMW-36-201910	↓	↓	↓	1046				↓	↓	012
MW-185-201910	↓	↓	↓	1429				↓	↓	013
MW-27-201910	↓	↓	↓	1315				↓	↓	014
ITMW-2R-201910	↓	↓	↓	1005				↓	↓	015
ITMW-11-201910	↓	↓	↓	1155				↓	↓	7 day hold 016
ITMW-12R-201910	↓	↓	↓	1605				↓	↓	017
MW-91-201910	↓	↓	↓	1420				↓	↓	018
ITMW-21-201910	↓	↓	↓	0925				↓	↓	019
MW-85R-201910	↓	↓	↓	1045				↓	↓	020

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 2 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Haley Chenn / Ramboll	10/24/19 1800	[illegible]	10-25-19 0210

F-ALL-C-010-rev.00, 05Jul2018

Pace Analytical®

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller

Site Collection Info/Address:

Customer Project Name/Number:

State / County/City / Time Zone Collected PT MT CT ET

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print):

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature):

Turnaround Date Required:

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive _____
[ ] Hold _____

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day
(Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

SEE PAGE 1

Container Preservative Type **: 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

Analyses: 8260 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60319241

↓ LAB USE ONLY: ↓

	Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8260 VOC Full List	Lab Sample # / Comments
3°	IW-134-201910	GW	G	10/24/19	1205				3	X	021
3°	MW-37-201910	↓	↓	↓	1530				↓	↓	022
1°	ITMW-16-201910	↓	↓	↓	0950				↓	↓	023
1°	ITMW-10-201910	↓	↓	↓	1135				↓	↓	024
1°	ITMW-5-201910	↓	↓	↓	1305				↓	↓	025
0	IW-132-201910	↓	↓	↓	1530				↓	↓	026
	~~IW-147-201910~~	↓	↓	↓					↓	↓	
	~~MW-95-201910~~	↓	↓	↓					↓	↓	
5°	DUP-08-201910	↓	↓	↓	0932				↓	↓	027
3°	DUP-09-201910	↓	↓	↓	1045				↓	↓	028

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A
HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 3 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Haley Thiler / Ramboll	10/24/19 1800	[illegible] / Pace	10/25/19 0210
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

F-ALL-C-010-rev.00, 05Jul2018

Pace Analytical®

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Container Preservative Type **: 3

Lab Project Manager:

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Copy To: Nick Zurweller

Site Collection Info/Address:

Customer Project Name/Number:

State / County/City / Time Zone Collected PT MT CT ET

SEE PAGE 1

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print):

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature):

Turnaround Date Required:

Immediately Packed on Ice? [ ] Yes [ ] No

Sample Disposal:
[ ] Dispose as appropriate [ ] Return
[ ] Archive _____
[ ] Hold _____

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Analyses: 8260 VOC Full List

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60319241

↓ LAB USE ONLY: ↓
Lab Sample # / Comments

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8260 VOC Full List	Lab Sample # / Comments
3 DUP-10-201910	GW	G	10/24/19	0950				3	X	029
3 EB-04-201910	↓	↓	↓	1645				↓	↓	030
3 EB-05-201910	↓	↓	↓	1650				↓	↓	031
1 MW-179-201910	↓	↓	↓	1550				↓	↓	032
1 TB-06-201910	↓	↓	↓	1740				2	↓	033
3 TB-07-201910	↓	↓	↓	1745				↓	↓	034
2 TB-08-201910	↓	↓	↓	1750				↓	↓	035

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A
HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 4 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Haley Anlen / Ramboll	10/24/19 1800	[signature]	10-25-19 020
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

F-ALL-C-010-rev.00, 05Jul2018

Pace Analytical
www.pacelabs.com

Sample Receiving Non-Conformance Form (NCF)

Date: 9.25.19	Evaluated by: Wcspt / Pac
Client: Ramboll	

Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF

2. If COC is incomplete, check applicable issues below and add details where appropriate:

	Collection date/time missing or incorrect	X	Analyses or analytes: missing or clarification needed		Samples listed on COC do not match samples received (missing, additional, etc.)
	Sample IDs on COC do not match sample labels		Required trip blanks were not received		Required signatures are missing

Comments/Details/Other Issues not listed above:

received BRJN for samples 2 through 6 no test marked for that container

3. Sample integrity issues: check applicable issues below and add details where appropriate:

	Samples: Past holding time		Samples: Condition needs to be brought to lab personnel's attention (details below)		Preservation: Improper
	Samples: Not field filtered		Containers: Broken or compromised		Temperature: not within acceptance criteria (typically 0-6C)
	Samples: Insufficient volume received		Containers: Incorrect		Temperature: Samples arrived frozen
	Samples: Cooler damaged or compromised		Custody Seals: Missing or compromised on samples, trip blanks or coolers		Vials received with improper headspace
	Samples: contain chlorine or sulfides		Packing Material: Insufficient/Improper		Other:

Comments/Details:

Samples 002, 003, & 004 logged for metals (HOLD), as well as TOC (not on hold)

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:	
PM Initials:	Date/Time:	

Client Comments/Instructions:

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 11, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60319241 / WHIRLPOOL**
Pace Workorder: 31953

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, October 29, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/11/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 20

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID	Sample ID	Matrix	Date Collected	Date Received
319530001	TMW-34-201910	Water	10/24/2019 17:30	10/29/2019 11:00
319530002	TMW-32-201910	Water	10/24/2019 15:15	10/29/2019 11:00
319530003	MW-186-201910	Water	10/24/2019 13:15	10/29/2019 11:00
319530004	TMW-25-201910	Water	10/24/2019 10:55	10/29/2019 11:00
319530005	IW-147-201910	Water	10/24/2019 10:15	10/29/2019 11:00
319530006	MW-95-201910	Water	10/24/2019 13:05	10/29/2019 11:00
319530007	IW-147-201910	Bubble Strip	10/24/2019 10:15	10/29/2019 11:00
319530008	MW-95-201910	Bubble Strip	10/24/2019 13:05	10/29/2019 11:00

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31953 60319241 / WHIRLPOOL

Workorder Comments

The container pH for samples 31953 (0001-0006) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530001** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-34-201910** Date Collected: 10/24/2019 17:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**8400**	ug/l	0.50	0.094	1	11/5/2019 11:34	TD	n
Ethane	**0.24**	ug/l	0.10	0.011	1	11/5/2019 11:34	TD	n
Ethene	**<0.10**	ug/l	0.10	0.0080	1	11/5/2019 11:34	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530002** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-32-201910** Date Collected: 10/24/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**8800**	ug/l	0.50	0.094	1	11/5/2019 11:49	TD	n
Ethane	**0.21**	ug/l	0.10	0.011	1	11/5/2019 11:49	TD	n
Ethene	**0.30**	ug/l	0.10	0.0080	1	11/5/2019 11:49	TD	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530003** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **MW-186-201910** Date Collected: 10/24/2019 13:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**12000**	ug/l	0.50	0.094	1	11/5/2019 12:04	TD	n
Ethane	**0.10**	ug/l	0.10	0.011	1	11/5/2019 12:04	TD	n
Ethene	**0.55**	ug/l	0.10	0.0080	1	11/5/2019 12:04	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530004** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-25-201910** Date Collected: 10/24/2019 10:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**12000**	ug/l	0.50	0.094	1	11/5/2019 09:15	TD	n
Ethane	**0.16**	ug/l	0.10	0.011	1	11/5/2019 09:15	TD	n
Ethene	**0.25**	ug/l	0.10	0.0080	1	11/5/2019 09:15	TD	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530006** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **MW-95-201910** Date Collected: 10/24/2019 13:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**4.6**	ug/l	0.50	0.094	1	11/5/2019 09:45	TD	n
Ethane	**0.48**	ug/l	0.10	0.011	1	11/5/2019 09:45	TD	n
Ethene	**<0.10**	ug/l	0.10	0.0080	1	11/5/2019 09:45	TD	n
Acetylene	**<0.50**	ug/l	0.50	0.037	1	11/5/2019 09:45	TD	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID: **319530008** Date Received: 10/29/2019 11:00 Matrix: Bubble Strip

Sample ID: **MW-95-201910** Date Collected: 10/24/2019 13:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**2.6**	nM	1.0	0.75	1	10/30/2019 17:37	TD	n

nelac

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31953 60319241 / WHIRLPOOL

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31953 60319241 / WHIRLPOOL

QC Batch: DISG/7883 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319530007, 319530008

METHOD BLANK: 64064

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Hydrogen	nM	<1.0	1.0	n

LABORATORY CONTROL SAMPLE & LCSD: 64065 64066

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Hydrogen	nM	24	25	26	102	108	80-120	5	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31953 60319241 / WHIRLPOOL

QC Batch: DISG/7894 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319530004, 319530005, 319530006

METHOD BLANK: 64156

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n
Acetylene	ug/l	<0.50	0.50	n

LABORATORY CONTROL SAMPLE & LCSD: 64158 64160

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	820	790	110	106	80-120	3.7	20	n
Ethane	ug/l	38	38	38	101	99	80-120	1.1	20	n
Ethene	ug/l	35	36	36	102	101	80-120	1.5	20	n
Acetylene	ug/l	33	32	31	96	94	80-120	2.7	20	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31953 60319241 / WHIRLPOOL

QC Batch: DISG/7895 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319530001, 319530002, 319530003

METHOD BLANK: 64162

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n

LABORATORY CONTROL SAMPLE & LCSD: 64164 64166

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	840	830	112	111	80-120	1.4	20	n
Ethane	ug/l	38	40	41	106	108	80-120	1.3	20	n
Ethene	ug/l	35	38	39	107	109	80-120	2	20	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 31953 60319241 / WHIRLPOOL

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31953 60319241 / WHIRLPOOL

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
319530007	IW-147-201910			AM20GAX	DISG/7883
319530008	MW-95-201910			AM20GAX	DISG/7883
319530004	TMW-25-201910			AM20GAX	DISG/7894
319530005	IW-147-201910			AM20GAX	DISG/7894
319530006	MW-95-201910			AM20GAX	DISG/7894
319530001	TMW-34-201910			AM20GAX	DISG/7895
319530002	TMW-32-201910			AM20GAX	DISG/7895
319530003	MW-186-201910			AM20GAX	DISG/7895

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

2

Chain of Custody

PASI Kansas Laboratory

31953

Pace Analytical®
www.pacelabs.com

Workorder: 60319241 **Workorder Name:** WHIRLPOOL, FORT SMITH AR **Results Requested By:** 11/6/2019

Report / Invoice To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy P.O. SUB0256

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Unpreserved					Requested Analysis: M/E/E + Acetylene + Hydrogen	M/E/E											LAB USE ONLY
1	TMW-34-201910	10/24/2019 17:30	60319241001	Water	3							X											
2	TMW-32-201910	10/24/2019 15:15	60319241002	Water	3							X											
3	MW-186-201910	10/24/2019 13:15	60319241003	Water	3							X											
4	TMW-25-201910	10/24/2019 10:55	60319241004	Water	3							X											
5	IW-147-201910	10/24/2019 10:15	60319241005	Water	4						X												
6	MW-95-201910	10/24/2019 13:05	60319241006	Water	4						X												

Transfers	Released By	Date/Time	Received By	Date/Time
1	Victor B Pace	10/28/19 1800	[illegible]	10.29
2				1100
3				

Comments

Cooler Temperature on Receipt 1 °C **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

Cooler Receipt Form

Client Name: Pace Project: 60319241 Lab Work Order: 31953

A. **Shipping/Container Information** (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 121929814757

Custody Seal on Cooler/Box Present: (Yes) No Seals Intact: (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 1°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. **Laboratory Assignment/Log-in** (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?		✓		

Comments:_____

Cooler contents examined/received by: LJ Date: 10.29.19

Project Manager Review: ERF Date: 10/29/19

F-PAE-Q-009-rev.01, 3Oct2017

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 11, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60319241 / WHIRLPOOL**
Pace Workorder: 31954

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, October 29, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/11/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 16

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID	Sample ID	Matrix	Date Collected	Date Received
319540001	TMW-34-201910	Water	10/24/2019 17:30	10/29/2019 11:00
319540002	TMW-32-201910	Water	10/24/2019 15:15	10/29/2019 11:00
319540003	MW-186-201910	Water	10/24/2019 13:15	10/29/2019 11:00
319540004	TMW-25-201910	Water	10/24/2019 10:55	10/29/2019 11:00

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31954 60319241 / WHIRLPOOL

Batch Comments

Batch: EDON/4258 - Low Level Volatile Fatty Acids

The matrix spike and/or spike duplicate, recovery or relative percent difference; accuracy influenced by the reference sample 319240001. Analyte iso-Hexanoic acid. Batch acceptance based on laboratory control sample recovery.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID: **319540001** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-34-201910** Date Collected: 10/24/2019 17:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	11/6/2019 09:49	KB	
Acetic Acid	**<0.10**	mg/l	0.10	0.025	1	11/6/2019 09:49	KB	
Propionic Acid	**<0.10**	mg/l	0.10	0.0020	1	11/6/2019 09:49	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.098	1	11/6/2019 09:49	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.0070	1	11/6/2019 09:49	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 09:49	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 09:49	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.011	1	11/6/2019 09:49	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.011	1	11/6/2019 09:49	KB	M5
Hexanoic Acid	**<0.20**	mg/l	0.20	0.032	1	11/6/2019 09:49	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID: **319540002** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-32-201910** Date Collected: 10/24/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	11/6/2019 10:43	KB	
Acetic Acid	**<0.10**	mg/l	0.10	0.025	1	11/6/2019 10:43	KB	
Propionic Acid	**<0.10**	mg/l	0.10	0.0020	1	11/6/2019 10:43	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.098	1	11/6/2019 10:43	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.0070	1	11/6/2019 10:43	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 10:43	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 10:43	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.011	1	11/6/2019 10:43	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.011	1	11/6/2019 10:43	KB	M5
Hexanoic Acid	**<0.20**	mg/l	0.20	0.032	1	11/6/2019 10:43	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID: **319540003** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **MW-186-201910** Date Collected: 10/24/2019 13:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	11/6/2019 11:36	KB	
Acetic Acid	**1.4**	mg/l	0.10	0.025	1	11/6/2019 11:36	KB	
Propionic Acid	**0.46**	mg/l	0.10	0.0020	1	11/6/2019 11:36	KB	
Formic Acid	**<0.50**	mg/l	0.50	0.098	1	11/6/2019 11:36	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.0070	1	11/6/2019 11:36	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 11:36	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0050	1	11/6/2019 11:36	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.011	1	11/6/2019 11:36	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.011	1	11/6/2019 11:36	KB	M5
Hexanoic Acid	**<0.20**	mg/l	0.20	0.032	1	11/6/2019 11:36	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID: **319540004** Date Received: 10/29/2019 11:00 Matrix: Water

Sample ID: **TMW-25-201910** Date Collected: 10/24/2019 10:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.048	1	11/6/2019 12:29	KB	
Acetic Acid	**17**	mg/l	1.0	0.25	10	11/6/2019 23:41	KB	d
Propionic Acid	**27**	mg/l	1.0	0.020	10	11/6/2019 23:41	KB	d
Formic Acid	**0.51**	mg/l	0.50	0.098	1	11/6/2019 12:29	KB	
Butyric Acid	**1.9**	mg/l	0.10	0.0070	1	11/6/2019 12:29	KB	
Pyruvic Acid	**0.64**	mg/l	0.10	0.0050	1	11/6/2019 12:29	KB	
i-Pentanoic Acid	**0.21**	mg/l	0.10	0.0050	1	11/6/2019 12:29	KB	
Pentanoic Acid	**2.1**	mg/l	0.10	0.011	1	11/6/2019 12:29	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.011	1	11/6/2019 12:29	KB	M5
Hexanoic Acid	**0.34**	mg/l	0.20	0.032	1	11/6/2019 12:29	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31954 60319241 / WHIRLPOOL

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
d	The analyte concentration was determined from a dilution.
M5	The matrix spike duplicate sample recovery was outside laboratory control limits.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31954 60319241 / WHIRLPOOL

QC Batch: EDON/4258 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 319540001, 319540002, 319540003, 319540004

METHOD BLANK: 64193

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	
Formic Acid	mg/l	<0.50	0.50	
Butyric Acid	mg/l	<0.10	0.10	
Pyruvic Acid	mg/l	<0.10	0.10	
i-Pentanoic Acid	mg/l	<0.10	0.10	
Pentanoic Acid	mg/l	<0.10	0.10	
i-Hexanoic Acid	mg/l	<0.20	0.20	M5
Hexanoic Acid	mg/l	<0.20	0.20	

LABORATORY CONTROL SAMPLE: 64194

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	2.1	104	70-130	
Acetic Acid	mg/l	2	2.0	99	70-130	
Propionic Acid	mg/l	2	2.0	103	70-130	
Formic Acid	mg/l	2	1.9	94	70-130	
Butyric Acid	mg/l	2	2.0	100	70-130	
Pyruvic Acid	mg/l	2	1.8	92	70-130	
i-Pentanoic Acid	mg/l	2	2.0	99	70-130	
Pentanoic Acid	mg/l	2	2.0	98	70-130	
i-Hexanoic Acid	mg/l	2	2.0	98	70-130	M5
Hexanoic Acid	mg/l	2	1.9	94	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64195 64196 Original: 319240001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
EDonors											
Lactic Acid	mg/l	0.26	2	1.9	2.1	84	90	70-130	6.3	30	
Acetic Acid	mg/l	0.1	2	2.1	2.1	100	100	70-130	0.23	30	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31954 60319241 / WHIRLPOOL

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64195 64196 Original: 319240001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Propionic Acid	mg/l	0.0094	2	2.0	2.0	100	100	70-130	0.21	30	
Formic Acid	mg/l	0.27	2	2.0	2.0	85	86	70-130	1.7	30	
Butyric Acid	mg/l	0.025	2	1.9	2.0	96	98	70-130	2.4	30	
Pyruvic Acid	mg/l	0.061	2	1.7	1.7	81	84	70-130	3.4	30	
i-Pentanoic Acid	mg/l	0.19	2	2.0	2.1	92	94	70-130	1.6	30	
Pentanoic Acid	mg/l	0.018	2	1.8	1.9	91	96	70-130	5.3	30	
i-Hexanoic Acid	mg/l	0	2	1.5	1.4	74	69	70-130	7.6	30	M5
Hexanoic Acid	mg/l	0.023	2	1.6	1.8	77	88	70-130	13	30	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31954 60319241 / WHIRLPOOL

QC Batch: EDON/4265 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 319540004

METHOD BLANK: 64253

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Acetic Acid	mg/l	<0.10	0.10	
Propionic Acid	mg/l	<0.10	0.10	

LABORATORY CONTROL SAMPLE: 64254

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acetic Acid	mg/l	2	2.0	100	70-130	
Propionic Acid	mg/l	2	2.1	105	70-130	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 31954 60319241 / WHIRLPOOL

QUALITY CONTROL PARAMETER QUALIFIERS

M5 The matrix spike duplicate sample recovery was outside laboratory control limits.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31954 60319241 / WHIRLPOOL

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
319540001	TMW-34-201910			AM23G	EDON/4258
319540002	TMW-32-201910			AM23G	EDON/4258
319540003	MW-186-201910			AM23G	EDON/4258
319540004	TMW-25-201910			AM23G	EDON/4258
319540004	TMW-25-201910			AM23G	EDON/4265

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

3

Chain of Custody

PASI Kansas Laboratory

31954

Pace Analytical®
www.pacelabs.com

Workorder: 60319241 **Workorder Name:** WHIRLPOOL, FORT SMITH AR **Results Requested By:** 11/6/2019

Report / Invoice To	Subcontract To	Requested Analysis
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy Jub P.O. 10257	

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Volatile Fatty Acids	LAB USE ONLY
1	TMW-34-201910	10/24/2019 17:30	60319241001	Water	2	X	
2	TMW-32-201910	10/24/2019 15:15	60319241002	Water	2	X	
3	MW-186-201910	10/24/2019 13:15	60319241003	Water	2	X	
4	TMW-25-201910	10/24/2019 10:55	60319241004	Water	2	X	
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	Victor B /Pace	10/28/19 1800	[illegible] PHES	10.29
2				1100
3				

Comments

send 2 x 40ml vial BAK

Cooler Temperature on Receipt 1 °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

Cooler Receipt Form

Client Name: Pace Project: 6031924 Lab Work Order: 31954

A. **Shipping/Container Information** (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 121929814757

Custody Seal on Cooler/Box Present: (Yes) No Seals Intact: (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 1°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. **Laboratory Assignment/Log-in** (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?			✓	

Comments:_____

Cooler contents examined/received by: CJ Date: 10.29.19

Project Manager Review: ERP Date: 10/30/19

F-PAE-Q-009-rev.01, 3Oct2017

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 18, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on December 04, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Haley Ahlers, Ramboll
Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60323037001	**MW-99-201912**	Water	12/03/19 09:30	12/04/19 09:20
60323037002	**MW-91-201912**	Water	12/03/19 14:50	12/04/19 09:20
60323037003	**TB-01-201912**	Water	12/03/19 14:50	12/04/19 09:20

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60323037001	**MW-99-201912**	EPA 6010	TDS	1	PASI-K
		EPA 5030B/8260	CJC	38	PASI-K
		EPA 300.0	MJK	2	PASI-K
		EPA 353.2	BLA	3	PASI-K
		SM 5310C	LDB	1	PASI-K
		SM 5310C	LDB	1	PASI-K
60323037002	**MW-91-201912**	EPA 6010	TDS	1	PASI-K
		EPA 5030B/8260	CJC, PGH	38	PASI-K
		EPA 300.0	MJK	2	PASI-K
		EPA 353.2	BLA	3	PASI-K
		SM 5310C	LDB	1	PASI-K
		SM 5310C	LDB	1	PASI-K
60323037003	**TB-01-201912**	EPA 5030B/8260	CJC	38	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Ramboll_AR
Date: December 18, 2019

General Information:
2 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll_AR
Date: December 18, 2019

General Information:
3 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 628147

B: Analyte was detected in the associated method blank.
- BLANK for HBN 628147 [MSV/1029 (Lab ID: 2560250)
  - 1,2-Dichloroethane

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 628147

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Ramboll_AR
Date: December 18, 2019

General Information:
2 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 unpres
Client: Ramboll_AR
Date: December 18, 2019

General Information:
2 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

Method: **SM 5310C**
Description: 5310C TOC
Client: Ramboll_AR
Date: December 18, 2019

General Information:
2 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

Method: **SM 5310C**
Description: 5310C Dissolved Organic Carbon
Client: Ramboll_AR
Date: December 18, 2019

General Information:
2 samples were analyzed for SM 5310C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

Sample: MW-99-201912 **Lab ID: 60323037001** Collected: 12/03/19 09:30 Received: 12/04/19 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**895**	ug/L	50.0	14.0	1	12/10/19 11:10	12/10/19 18:53	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	7.4	1		12/12/19 15:17	67-64-1	
Benzene	ND	ug/L	1.0	0.13	1		12/12/19 15:17	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.14	1		12/12/19 15:17	75-27-4	
Bromoform	ND	ug/L	1.0	0.28	1		12/12/19 15:17	75-25-2	
Bromomethane	ND	ug/L	5.0	2.8	1		12/12/19 15:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	1.8	1		12/12/19 15:17	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.086	1		12/12/19 15:17	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.070	1		12/12/19 15:17	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.17	1		12/12/19 15:17	108-90-7	
Chloroethane	ND	ug/L	1.0	0.83	1		12/12/19 15:17	75-00-3	
Chloroform	ND	ug/L	1.0	0.25	1		12/12/19 15:17	67-66-3	
Chloromethane	ND	ug/L	1.0	0.51	1		12/12/19 15:17	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		12/12/19 15:17	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.12	1		12/12/19 15:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.33	1		12/12/19 15:17	107-06-2	
1,1-Dichloroethene	**0.42J**	ug/L	1.0	0.14	1		12/12/19 15:17	75-35-4	
cis-1,2-Dichloroethene	**4.1**	ug/L	1.0	0.18	1		12/12/19 15:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.082	1		12/12/19 15:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.14	1		12/12/19 15:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		12/12/19 15:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.18	1		12/12/19 15:17	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.20	1		12/12/19 15:17	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.6	1		12/12/19 15:17	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.35	1		12/12/19 15:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	1.3	1		12/12/19 15:17	108-10-1	
Styrene	ND	ug/L	1.0	0.19	1		12/12/19 15:17	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.23	1		12/12/19 15:17	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.14	1		12/12/19 15:17	127-18-4	
Toluene	ND	ug/L	1.0	0.17	1		12/12/19 15:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		12/12/19 15:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		12/12/19 15:17	79-00-5	
Trichloroethene	**59.3**	ug/L	1.0	0.097	1		12/12/19 15:17	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.17	1		12/12/19 15:17	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		12/12/19 15:17	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	80-120		1		12/12/19 15:17	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		12/12/19 15:17	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		12/12/19 15:17	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		12/12/19 15:17		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**18.3**	mg/L	1.0	0.22	1		12/10/19 15:14	16887-00-6	
Sulfate	**6.0**	mg/L	1.0	0.23	1		12/10/19 15:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

Sample: MW-99-201912 **Lab ID: 60323037001** Collected: 12/03/19 09:30 Received: 12/04/19 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.8**	mg/L	0.10	0.038	1		12/04/19 15:41		
Nitrogen, Nitrate	**1.8**	mg/L	0.10	0.067	1		12/04/19 15:41	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		12/04/19 15:41	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	ND	mg/L	1.0	0.29	1		12/09/19 22:59	7440-44-0	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**0.57J**	mg/L	1.0	0.29	1		12/11/19 15:21		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

Sample: MW-91-201912 **Lab ID: 60323037002** Collected: 12/03/19 14:50 Received: 12/04/19 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Iron	**76.0**	ug/L	50.0	14.0	1	12/10/19 11:10	12/10/19 18:55	7439-89-6	
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		12/13/19 08:45	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		12/13/19 08:45	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		12/13/19 08:45	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		12/13/19 08:45	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		12/13/19 08:45	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		12/13/19 08:45	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		12/13/19 08:45	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		12/13/19 08:45	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		12/13/19 08:45	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		12/13/19 08:45	75-00-3	
Chloroform	**0.21J**	ug/L	1.0	0.10	1		12/13/19 08:45	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		12/13/19 08:45	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		12/13/19 08:45	124-48-1	
1,1-Dichloroethane	**1.3**	ug/L	1.0	0.097	1		12/13/19 08:45	75-34-3	
1,2-Dichloroethane	**0.20J**	ug/L	1.0	0.14	1		12/13/19 08:45	107-06-2	B
1,1-Dichloroethene	**3.6**	ug/L	1.0	0.22	1		12/13/19 08:45	75-35-4	
cis-1,2-Dichloroethene	**27.6**	ug/L	1.0	0.17	1		12/13/19 08:45	156-59-2	
trans-1,2-Dichloroethene	**0.57J**	ug/L	1.0	0.17	1		12/13/19 08:45	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		12/13/19 08:45	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		12/13/19 08:45	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		12/13/19 08:45	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		12/13/19 08:45	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		12/13/19 08:45	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		12/13/19 08:45	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		12/13/19 08:45	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		12/13/19 08:45	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		12/13/19 08:45	79-34-5	
Tetrachloroethene	**4.4**	ug/L	1.0	0.22	1		12/13/19 08:45	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		12/13/19 08:45	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		12/13/19 08:45	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		12/13/19 08:45	79-00-5	
Trichloroethene	**331**	ug/L	10.0	1.7	10		12/13/19 08:59	79-01-6	
Vinyl chloride	**0.16J**	ug/L	1.0	0.11	1		12/13/19 08:45	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.42	1		12/12/19 15:32	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	97	%	80-120		1		12/13/19 08:45	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-122		1		12/13/19 08:45	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		12/13/19 08:45	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		12/13/19 08:45		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**80.6**	mg/L	10.0	2.2	10		12/09/19 22:57	16887-00-6	
Sulfate	**11.4**	mg/L	1.0	0.23	1		12/10/19 15:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

Sample: MW-91-201912 **Lab ID: 60323037002** Collected: 12/03/19 14:50 Received: 12/04/19 09:20 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, NO2 plus NO3	**1.7**	mg/L	0.10	0.038	1		12/04/19 15:51		
Nitrogen, Nitrate	**1.7**	mg/L	0.10	0.067	1		12/04/19 15:51	14797-55-8	
Nitrogen, Nitrite	ND	mg/L	0.10	0.067	1		12/04/19 15:51	14797-65-0	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.38J**	mg/L	1.0	0.29	1		12/09/19 23:12	7440-44-0	
5310C Dissolved Organic Carbon	Analytical Method: SM 5310C								
Dissolved Organic Carbon	**0.53J**	mg/L	1.0	0.29	1		12/11/19 15:48		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

QC Batch: 627190
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 60323037001, 60323037002

METHOD BLANK: 2556548 Matrix: Water
Associated Lab Samples: 60323037001, 60323037002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron	ug/L	ND	50.0	14.0	12/10/19 18:45	

LABORATORY CONTROL SAMPLE: 2556549

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	10000	9920	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2556550 2556551

Parameter	Units	60322789001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iron	ug/L	320	10000	10000	10400	10400	101	101	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

QC Batch: 627553 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60323037001, 60323037002, 60323037003

METHOD BLANK: 2557849 Matrix: Water
Associated Lab Samples: 60323037001, 60323037002, 60323037003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	12/12/19 10:46	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.23	12/12/19 10:46	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	12/12/19 10:46	
1,1-Dichloroethane	ug/L	ND	1.0	0.12	12/12/19 10:46	
1,1-Dichloroethene	ug/L	ND	1.0	0.14	12/12/19 10:46	
1,2-Dichloroethane	ug/L	ND	1.0	0.33	12/12/19 10:46	
1,2-Dichloropropane	ug/L	ND	1.0	0.14	12/12/19 10:46	
2-Butanone (MEK)	ug/L	ND	10.0	1.8	12/12/19 10:46	
2-Hexanone	ug/L	ND	10.0	1.6	12/12/19 10:46	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	1.3	12/12/19 10:46	
Acetone	ug/L	ND	10.0	7.4	12/12/19 10:46	
Benzene	ug/L	ND	1.0	0.13	12/12/19 10:46	
Bromodichloromethane	ug/L	ND	1.0	0.14	12/12/19 10:46	
Bromoform	ug/L	0.85J	1.0	0.28	12/12/19 10:46	
Bromomethane	ug/L	ND	5.0	2.8	12/12/19 10:46	
Carbon disulfide	ug/L	ND	5.0	0.086	12/12/19 10:46	
Carbon tetrachloride	ug/L	ND	1.0	0.070	12/12/19 10:46	
Chlorobenzene	ug/L	ND	1.0	0.17	12/12/19 10:46	
Chloroethane	ug/L	ND	1.0	0.83	12/12/19 10:46	
Chloroform	ug/L	ND	1.0	0.25	12/12/19 10:46	
Chloromethane	ug/L	ND	1.0	0.51	12/12/19 10:46	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.18	12/12/19 10:46	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.18	12/12/19 10:46	
Dibromochloromethane	ug/L	ND	1.0	0.15	12/12/19 10:46	
Ethylbenzene	ug/L	ND	1.0	0.20	12/12/19 10:46	
Methylene Chloride	ug/L	ND	1.0	0.35	12/12/19 10:46	
Styrene	ug/L	ND	1.0	0.19	12/12/19 10:46	
Tetrachloroethene	ug/L	ND	1.0	0.14	12/12/19 10:46	
Toluene	ug/L	ND	1.0	0.17	12/12/19 10:46	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.082	12/12/19 10:46	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.18	12/12/19 10:46	
Trichloroethene	ug/L	ND	1.0	0.097	12/12/19 10:46	
Vinyl chloride	ug/L	ND	1.0	0.17	12/12/19 10:46	
Xylene (Total)	ug/L	ND	3.0	0.42	12/12/19 10:46	
1,2-Dichloroethane-d4 (S)	%	100	77-122		12/12/19 10:46	
4-Bromofluorobenzene (S)	%	99	80-120		12/12/19 10:46	
Toluene-d8 (S)	%	100	80-120		12/12/19 10:46	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

LABORATORY CONTROL SAMPLE: 2557850

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.9	104	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	21.2	106	71-122	
1,1,2-Trichloroethane	ug/L	20	21.0	105	76-123	
1,1-Dichloroethane	ug/L	20	21.3	106	78-117	
1,1-Dichloroethene	ug/L	20	21.5	108	74-122	
1,2-Dichloroethane	ug/L	20	19.7	98	73-120	
1,2-Dichloropropane	ug/L	20	20.8	104	78-115	
2-Butanone (MEK)	ug/L	100	97.3	97	54-133	
2-Hexanone	ug/L	100	105	105	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	111	111	62-130	
Acetone	ug/L	100	93.9	94	54-130	
Benzene	ug/L	20	21.5	107	80-120	
Bromodichloromethane	ug/L	20	21.3	107	78-121	
Bromoform	ug/L	20	21.0	105	62-137	
Bromomethane	ug/L	20	14.3	72	41-145	
Carbon disulfide	ug/L	20	21.8	109	64-119	
Carbon tetrachloride	ug/L	20	19.7	98	77-122	
Chlorobenzene	ug/L	20	21.5	108	80-123	
Chloroethane	ug/L	20	19.4	97	60-146	
Chloroform	ug/L	20	21.9	109	81-116	
Chloromethane	ug/L	20	11.9	60	29-154	
cis-1,2-Dichloroethene	ug/L	20	21.4	107	80-120	
cis-1,3-Dichloropropene	ug/L	20	21.8	109	78-118	
Dibromochloromethane	ug/L	20	21.2	106	73-128	
Ethylbenzene	ug/L	20	21.2	106	80-120	
Methylene Chloride	ug/L	20	20.8	104	80-126	
Styrene	ug/L	20	21.4	107	85-120	
Tetrachloroethene	ug/L	20	21.5	108	77-121	
Toluene	ug/L	20	20.7	103	80-120	
trans-1,2-Dichloroethene	ug/L	20	21.1	106	80-120	
trans-1,3-Dichloropropene	ug/L	20	21.2	106	76-123	
Trichloroethene	ug/L	20	20.9	105	80-121	
Vinyl chloride	ug/L	20	19.0	95	46-162	
Xylene (Total)	ug/L	60	63.1	105	80-120	
1,2-Dichloroethane-d4 (S)	%			100	77-122	
4-Bromofluorobenzene (S)	%			99	80-120	
Toluene-d8 (S)	%			100	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

QC Batch: 628147
QC Batch Method: EPA 5030B/8260
Associated Lab Samples: 60323037002

Analysis Method: EPA 5030B/8260
Analysis Description: 8260 MSV Water 10 mL Purge

METHOD BLANK: 2560250
Associated Lab Samples: 60323037002

Matrix: Water

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	12/13/19 08:02	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	12/13/19 08:02	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	12/13/19 08:02	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	12/13/19 08:02	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	12/13/19 08:02	
1,2-Dichloroethane	ug/L	0.15J	1.0	0.14	12/13/19 08:02	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	12/13/19 08:02	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	12/13/19 08:02	
2-Hexanone	ug/L	ND	10.0	1.0	12/13/19 08:02	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	12/13/19 08:02	
Acetone	ug/L	ND	10.0	3.3	12/13/19 08:02	
Benzene	ug/L	ND	1.0	0.079	12/13/19 08:02	
Bromodichloromethane	ug/L	ND	1.0	0.17	12/13/19 08:02	
Bromoform	ug/L	ND	1.0	0.21	12/13/19 08:02	
Bromomethane	ug/L	ND	5.0	0.32	12/13/19 08:02	
Carbon disulfide	ug/L	ND	5.0	0.16	12/13/19 08:02	
Carbon tetrachloride	ug/L	ND	1.0	0.084	12/13/19 08:02	
Chlorobenzene	ug/L	ND	1.0	0.13	12/13/19 08:02	
Chloroethane	ug/L	ND	1.0	0.42	12/13/19 08:02	
Chloroform	ug/L	ND	1.0	0.10	12/13/19 08:02	
Chloromethane	ug/L	ND	1.0	0.16	12/13/19 08:02	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.17	12/13/19 08:02	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	12/13/19 08:02	
Dibromochloromethane	ug/L	ND	1.0	0.15	12/13/19 08:02	
Ethylbenzene	ug/L	ND	1.0	0.12	12/13/19 08:02	
Methylene Chloride	ug/L	ND	1.0	0.27	12/13/19 08:02	
Styrene	ug/L	ND	1.0	0.15	12/13/19 08:02	
Tetrachloroethene	ug/L	ND	1.0	0.22	12/13/19 08:02	
Toluene	ug/L	ND	1.0	0.14	12/13/19 08:02	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	12/13/19 08:02	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	12/13/19 08:02	
Trichloroethene	ug/L	ND	1.0	0.17	12/13/19 08:02	
Vinyl chloride	ug/L	ND	1.0	0.11	12/13/19 08:02	
1,2-Dichloroethane-d4 (S)	%	100	77-122		12/13/19 08:02	
4-Bromofluorobenzene (S)	%	100	80-120		12/13/19 08:02	
Toluene-d8 (S)	%	100	80-120		12/13/19 08:02	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

LABORATORY CONTROL SAMPLE: 2560251

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	19.5	98	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	20.3	102	71-122	
1,1,2-Trichloroethane	ug/L	20	19.6	98	76-123	
1,1-Dichloroethane	ug/L	20	20.0	100	78-117	
1,1-Dichloroethene	ug/L	20	19.4	97	74-122	
1,2-Dichloroethane	ug/L	20	17.8	89	73-120	
1,2-Dichloropropane	ug/L	20	20.0	100	78-115	
2-Butanone (MEK)	ug/L	100	93.4	93	54-133	
2-Hexanone	ug/L	100	102	102	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	108	108	62-130	
Acetone	ug/L	100	94.8	95	54-130	
Benzene	ug/L	20	19.5	98	80-120	
Bromodichloromethane	ug/L	20	19.8	99	78-121	
Bromoform	ug/L	20	17.7	89	62-137	
Bromomethane	ug/L	20	16.9	85	41-145	
Carbon disulfide	ug/L	20	20.6	103	64-119	
Carbon tetrachloride	ug/L	20	19.9	100	77-122	
Chlorobenzene	ug/L	20	20.0	100	80-123	
Chloroethane	ug/L	20	19.1	95	60-146	
Chloroform	ug/L	20	20.3	101	81-116	
Chloromethane	ug/L	20	17.4	87	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.1	100	80-120	
cis-1,3-Dichloropropene	ug/L	20	20.5	102	78-118	
Dibromochloromethane	ug/L	20	21.3	107	73-128	
Ethylbenzene	ug/L	20	19.9	99	80-120	
Methylene Chloride	ug/L	20	19.8	99	80-126	
Styrene	ug/L	20	20.6	103	85-120	
Tetrachloroethene	ug/L	20	20.7	104	77-121	
Toluene	ug/L	20	20.0	100	80-120	
trans-1,2-Dichloroethene	ug/L	20	20.2	101	80-120	
trans-1,3-Dichloropropene	ug/L	20	20.8	104	76-123	
Trichloroethene	ug/L	20	18.3	92	80-121	
Vinyl chloride	ug/L	20	18.9	94	46-162	
1,2-Dichloroethane-d4 (S)	%			103	77-122	
4-Bromofluorobenzene (S)	%			98	80-120	
Toluene-d8 (S)	%			101	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

QC Batch: 626773 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60323037001, 60323037002

METHOD BLANK: 2554601 Matrix: Water
Associated Lab Samples: 60323037001, 60323037002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	12/09/19 16:05	
Sulfate	mg/L	ND	1.0	0.23	12/09/19 16:05	

METHOD BLANK: 2556826 Matrix: Water
Associated Lab Samples: 60323037001, 60323037002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.22	12/10/19 10:30	
Sulfate	mg/L	ND	1.0	0.23	12/10/19 10:30	

METHOD BLANK: 2557855 Matrix: Water
Associated Lab Samples: 60323037001, 60323037002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.26J	1.0	0.22	12/11/19 09:24	
Sulfate	mg/L	ND	1.0	0.23	12/11/19 09:24	

LABORATORY CONTROL SAMPLE: 2554602

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

LABORATORY CONTROL SAMPLE: 2556827

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	97	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 2557856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	91	90-110	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

LABORATORY CONTROL SAMPLE: 2557856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.7	93	90-110	

MATRIX SPIKE SAMPLE: 2554603

Parameter	Units	60322899001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	654	2500	3020	95	80-120	
Sulfate	mg/L	4000	2500	6240	90	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2554604 2554605

Parameter	Units	60323141001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1380	1000	1000	2450	2430	106	105	80-120	1	15	
Sulfate	mg/L	2260	1000	1000	3340	3330	108	107	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

QC Batch: 626203
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 60323037001, 60323037002

METHOD BLANK: 2552347 Matrix: Water
Associated Lab Samples: 60323037001, 60323037002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	0.067	12/04/19 15:39	
Nitrogen, Nitrite	mg/L	ND	0.10	0.067	12/04/19 15:39	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	0.038	12/04/19 15:39	

LABORATORY CONTROL SAMPLE: 2552348

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1	1.1	107	70-130	
Nitrogen, Nitrite	mg/L	1	0.98	98	90-110	
Nitrogen, NO2 plus NO3	mg/L	2	2.0	102	90-110	

MATRIX SPIKE SAMPLE: 2552349

Parameter	Units	60323037001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	1.8	1	2.7	88	70-130	
Nitrogen, Nitrite	mg/L	ND	1	0.96	96	90-110	
Nitrogen, NO2 plus NO3	mg/L	1.8	2	3.6	92	90-110	

SAMPLE DUPLICATE: 2552350

Parameter	Units	60323036002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	ND	ND		20	
Nitrogen, Nitrite	mg/L	ND	ND		20	
Nitrogen, NO2 plus NO3	mg/L	ND	ND		20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

QC Batch: 626975 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60323037001, 60323037002

METHOD BLANK: 2555809 Matrix: Water
Associated Lab Samples: 60323037001, 60323037002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	0.29	12/09/19 19:25	

LABORATORY CONTROL SAMPLE: 2555810

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.3	106	80-120	

MATRIX SPIKE SAMPLE: 2555811

Parameter	Units	10500421004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	14.3	5	14.5	85	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

QC Batch: 627331 Analysis Method: SM 5310C
QC Batch Method: SM 5310C Analysis Description: 5310C Dissolved Organic Carbon
Associated Lab Samples: 60323037001, 60323037002

METHOD BLANK: 2557146 Matrix: Water
Associated Lab Samples: 60323037001, 60323037002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dissolved Organic Carbon	mg/L	ND	1.0	0.29	12/11/19 14:54	

LABORATORY CONTROL SAMPLE: 2557147

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	5	5.6	112	80-120	

MATRIX SPIKE SAMPLE: 2557148

Parameter	Units	60323037001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Dissolved Organic Carbon	mg/L	0.57J	5	6.3	114	80-120	

SAMPLE DUPLICATE: 2557149

Parameter	Units	60323447001 Result	Dup Result	RPD	Max RPD	Qualifiers
Dissolved Organic Carbon	mg/L	0.45J	0.43J		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 628147

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323037

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60323037001	**MW-99-201912**	EPA 3010	627190	EPA 6010	627309
60323037002	**MW-91-201912**	EPA 3010	627190	EPA 6010	627309
60323037001	**MW-99-201912**	EPA 5030B/8260	627553		
60323037002	**MW-91-201912**	EPA 5030B/8260	627553		
60323037002	**MW-91-201912**	EPA 5030B/8260	628147		
60323037003	**TB-01-201912**	EPA 5030B/8260	627553		
60323037001	**MW-99-201912**	EPA 300.0	626773		
60323037002	**MW-91-201912**	EPA 300.0	626773		
60323037001	**MW-99-201912**	EPA 353.2	626203		
60323037002	**MW-91-201912**	EPA 353.2	626203		
60323037001	**MW-99-201912**	SM 5310C	626975		
60323037002	**MW-91-201912**	SM 5310C	626975		
60323037001	**MW-99-201912**	SM 5310C	627331		
60323037002	**MW-91-201912**	SM 5310C	627331		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical

CHAIN-OF-CUSTODY Analytical Reque

Chain-of-Custody is a LEGAL DOCUMENT- Complete a

WO# : 60323037

60323037

'n Label Here or List Pace Workorder Number or MTJL Log-in Number Here

EAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller

Site Collection Info/Address: Fort Smith, AR

Customer Project Name/Number: Whirlpool, Fort Smith AR

State: AR | County/City: Fort Smith | Time Zone Collected: PT MT CT ET

Phone: 636-579-6883
Email: nzurweller@ramboll.com

Site/Facility ID #

Compliance Monitoring? [ ] Yes [X] No

Collected by (print): Nick Zurweller

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature):

Turnaround Date Required: Standard

Immediately Packed on Ice? [X] Yes [ ] No

Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold

RUSH: Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 3 4 u u 2 u 1 D O

Lab Project Manager: Jamie Church

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	X	N	NA
Custody Signatures Present	X	N	NA
Collector Signature Present	X	N	NA
Bottles intact	X	N	NA
Correct Bottles	X	N	NA
Sufficient Volume	X	N	NA
Samples received on ice	X	N	NA
VOA - Headspace Acceptable	X	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	X	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

60323037

↓ LAB USE ONLY: ↓

Customer Sample ID	Matrix*	Comp/Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	8260 VOCs	Chloride	Sulfate	Nitrate	TOC	DOC	6010 Iron	Methane/Ethane/Ethene	Volatile Fatty Acids		Lab Sample # / Comments
MW-99-201912	GW	Grab	12/3/19	0930				12	X	X	X	X	X	X	X	X	X		001
MW-91-201912	GW	Grab	12/3/19	1450				12	X	X	X	X	X	X	X	X	X		002
TB-01-201912								2	X										003

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [X] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used: Zoic

LAB Tracking #: 7785 6442 6951

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: T296

Cooler Temp Upon Receipt 0.6 oC

Cooler Therm Corr. Factor +0.0 oC

Cooler Temp Corrected 0.6 oC

Comments:

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s) YES / NO

Page 1 of 1

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Ramboll	12/3/19 1820	Uzi of Pace	12-4-19 0920
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

F-ALL-C-010-rev.00, 05Jul2018

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

December 18, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60323037**

Pace Workorder: 32346

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, December 06, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 12/18/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 13

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 32346 60323037

Lab ID	Sample ID	Matrix	Date Collected	Date Received
323460001	MW-99-201912	Water	12/3/2019 09:30	12/6/2019 11:45
323460002	MW-91-201912	Water	12/3/2019 14:50	12/6/2019 11:45

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 32346 60323037

Batch Comments

Batch: EDON/4307 - Low Level Volatile Fatty Acids

The method blank contains a concentration above the reporting limit. Analyte Acetic acid. Results for this analyte in associated samples may be bias high.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 32346 60323037

Lab ID: **323460001** Date Received: 12/6/2019 11:45 Matrix: Water

Sample ID: **MW-99-201912** Date Collected: 12/3/2019 09:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	12/11/2019 22:54	KB	
Acetic Acid	**0.20**	mg/l	0.10	0.028	1	12/11/2019 22:54	KB	B
Propionic Acid	**0.11**	mg/l	0.10	0.0040	1	12/11/2019 22:54	KB	B
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	12/11/2019 22:54	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	12/11/2019 22:54	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	12/11/2019 22:54	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	12/11/2019 22:54	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	12/11/2019 22:54	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	12/11/2019 22:54	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	12/11/2019 22:54	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 32346 60323037

Lab ID: **323460002** Date Received: 12/6/2019 11:45 Matrix: Water

Sample ID: **MW-91-201912** Date Collected: 12/3/2019 14:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
EDonors - PAES								
Analysis Desc: AM23G		Analytical Method: AM23G						
Lactic Acid	**<0.20**	mg/l	0.20	0.043	1	12/11/2019 23:47	KB	
Acetic Acid	**0.17**	mg/l	0.10	0.028	1	12/11/2019 23:47	KB	B
Propionic Acid	**<0.10**	mg/l	0.10	0.0040	1	12/11/2019 23:47	KB	B
Formic Acid	**<0.50**	mg/l	0.50	0.086	1	12/11/2019 23:47	KB	
Butyric Acid	**<0.10**	mg/l	0.10	0.011	1	12/11/2019 23:47	KB	
Pyruvic Acid	**<0.10**	mg/l	0.10	0.0050	1	12/11/2019 23:47	KB	
i-Pentanoic Acid	**<0.10**	mg/l	0.10	0.0060	1	12/11/2019 23:47	KB	
Pentanoic Acid	**<0.10**	mg/l	0.10	0.0070	1	12/11/2019 23:47	KB	
i-Hexanoic Acid	**<0.20**	mg/l	0.20	0.029	1	12/11/2019 23:47	KB	
Hexanoic Acid	**<0.20**	mg/l	0.20	0.010	1	12/11/2019 23:47	KB	

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 32346 60323037

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
B	The analyte was detected in the associated blank.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 32346 60323037

QC Batch: EDON/4307 Analysis Method: AM23G

QC Batch Method: AM23G

Associated Lab Samples: 323460001, 323460002

METHOD BLANK: 64870

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
EDonors				
Lactic Acid	mg/l	<0.20	0.20	
Acetic Acid	mg/l	0.15	0.10	B
Propionic Acid	mg/l	<0.10	0.10	B
Formic Acid	mg/l	<0.50	0.50	
Butyric Acid	mg/l	<0.10	0.10	
Pyruvic Acid	mg/l	<0.10	0.10	
i-Pentanoic Acid	mg/l	<0.10	0.10	
Pentanoic Acid	mg/l	<0.10	0.10	
i-Hexanoic Acid	mg/l	<0.20	0.20	
Hexanoic Acid	mg/l	<0.20	0.20	

LABORATORY CONTROL SAMPLE: 64871

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lactic Acid	mg/l	2	1.9	96	70-130	
Acetic Acid	mg/l	2	2.1	103	70-130	B
Propionic Acid	mg/l	2	2.1	106	70-130	B
Formic Acid	mg/l	2	2.0	101	70-130	
Butyric Acid	mg/l	2	2.0	102	70-130	
Pyruvic Acid	mg/l	2	1.8	88	70-130	
i-Pentanoic Acid	mg/l	2	2.0	101	70-130	
Pentanoic Acid	mg/l	2	2.0	101	70-130	
i-Hexanoic Acid	mg/l	2	2.1	107	70-130	
Hexanoic Acid	mg/l	2	2.0	99	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64872 64873 Original: 323740001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
EDonors											
Lactic Acid	mg/l	0.0063	2	1.9	1.8	97	88	70-130	9.4	30	
Acetic Acid	mg/l	0.23	2	2.0	2.0	89	88	70-130	1.1	30	B

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 32346 60323037

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64872 64873 Original: 323740001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Propionic Acid	mg/l	0.12	2	2.0	2.0	95	92	70-130	3.6	30	B
Formic Acid	mg/l	0.12	2	2.1	2.0	98	93	70-130	5.3	30	
Butyric Acid	mg/l	0.016	2	2.0	1.9	100	95	70-130	5.3	30	
Pyruvic Acid	mg/l	0.0039	2	1.8	1.7	90	84	70-130	6.7	30	
i-Pentanoic Acid	mg/l	0.0058	2	2.0	1.9	101	94	70-130	7.4	30	
Pentanoic Acid	mg/l	0.0009	2	2.0	1.8	100	92	70-130	8.4	30	
i-Hexanoic Acid	mg/l	0	2	2.2	1.9	111	94	70-130	16	30	
Hexanoic Acid	mg/l	0.0016	2	2.1	1.7	104	87	70-130	18	30	

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 32346 60323037

QUALITY CONTROL PARAMETER QUALIFIERS

B	The analyte was detected in the associated blank.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 32346 60323037

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
323460001	MW-99-201912			AM23G	EDON/4307
323460002	MW-91-201912			AM23G	EDON/4307

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Chain of Custody

PASI Kansas Laboratory

Pace Analytical
www.pacelabs.com

Workorder: 60323037 **Workorder Name:** WHIRLPOOL, FORT SMITH AR **Results Requested By:** 12/16/2019

Report / Invoice To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	P.O. Sub-10325 PACE ENERGY

State of Sample Origin: AR

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Requested Analysis: Volatile Fatty Acids	LAB USE ONLY
1	MW-99-201912	12/3/2019 09:30	60323037001	Water	1	X	
2	MW-91-201912	12/3/2019 14:50	60323037002	Water	1	X	
3							
4							
5							

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Vintro B /pace	12/5/19 1600	[illegible] PASI	12.6.19	1145
2					
3					

Cooler Temperature on Receipt 2.2 °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

Cooler Receipt Form

Client Name: Pace Project: [illegible] Lab Work Order: [illegible]

A. **Shipping/Container Information** (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 1219 2985 5939

Custody Seal on Cooler/Box Present: (Yes) No Seals Intact: (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 2.2°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. **Laboratory Assignment/Log-in** (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?			✓	

Comments:_____

_____

Cooler contents examined/received by: LJ Date: 12.6.19

Project Manager Review: DW Date: 12.6.19

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 18, 2019

Nick Zurweller
Ramboll Environ
7500 College Blvd.
Ste. 295
Overland Park, KS 66210

RE: Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323873

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on December 11, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Haley Ahlers, Ramboll
Kristen Drucquer, Ramboll
Tamara House-Knight, Ramboll Environ
M. Wilson

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323873

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 19-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212018-8
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323873

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60323873001	**TMW-34-201912**	Water	12/07/19 10:40	12/11/19 08:45
60323873002	**TMW-61R-201912**	Water	12/07/19 12:40	12/11/19 08:45

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323873

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60323873001	**TMW-34-201912**	EPA 5030B/8260	PGH	38	PASI-K
60323873002	**TMW-61R-201912**	EPA 5030B/8260	PGH	38	PASI-K

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323873

Method: **EPA 5030B/8260**
Description: 8260 MSV
Client: Ramboll_AR
Date: December 18, 2019

General Information:
2 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 628553

B: Analyte was detected in the associated method blank.
- BLANK for HBN 628553 [MSV/1030 (Lab ID: 2562015)
  - cis-1,2-Dichloroethene

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 628553

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323873

Sample: TMW-34-201912 **Lab ID: 60323873001** Collected: 12/07/19 10:40 Received: 12/11/19 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		12/17/19 18:01	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		12/17/19 18:01	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		12/17/19 18:01	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		12/17/19 18:01	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		12/17/19 18:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		12/17/19 18:01	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		12/17/19 18:01	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		12/17/19 18:01	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		12/17/19 18:01	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		12/17/19 18:01	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		12/17/19 18:01	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		12/17/19 18:01	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		12/17/19 18:01	124-48-1	
1,1-Dichloroethane	**0.18J**	ug/L	1.0	0.097	1		12/17/19 18:01	75-34-3	
1,2-Dichloroethane	**0.17J**	ug/L	1.0	0.14	1		12/17/19 18:01	107-06-2	B
1,1-Dichloroethene	**0.56J**	ug/L	1.0	0.22	1		12/17/19 18:01	75-35-4	
cis-1,2-Dichloroethene	**10.3**	ug/L	1.0	0.17	1		12/17/19 18:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		12/17/19 18:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		12/17/19 18:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		12/17/19 18:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		12/17/19 18:01	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		12/17/19 18:01	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		12/17/19 18:01	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		12/17/19 18:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		12/17/19 18:01	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		12/17/19 18:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		12/17/19 18:01	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		12/17/19 18:01	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		12/17/19 18:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		12/17/19 18:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		12/17/19 18:01	79-00-5	
Trichloroethene	**26.7**	ug/L	1.0	0.17	1		12/17/19 18:01	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		12/17/19 18:01	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		12/17/19 18:01	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	80-120		1		12/17/19 18:01	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	77-122		1		12/17/19 18:01	17060-07-0	
Toluene-d8 (S)	101	%	80-120		1		12/17/19 18:01	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		12/17/19 18:01		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323873

Sample: TMW-61R-201912 **Lab ID: 60323873002** Collected: 12/07/19 12:40 Received: 12/11/19 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	10.0	3.3	1		12/17/19 18:16	67-64-1	
Benzene	ND	ug/L	1.0	0.079	1		12/17/19 18:16	71-43-2	
Bromodichloromethane	ND	ug/L	1.0	0.17	1		12/17/19 18:16	75-27-4	
Bromoform	ND	ug/L	1.0	0.21	1		12/17/19 18:16	75-25-2	
Bromomethane	ND	ug/L	5.0	0.32	1		12/17/19 18:16	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	0.70	1		12/17/19 18:16	78-93-3	
Carbon disulfide	ND	ug/L	5.0	0.16	1		12/17/19 18:16	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.084	1		12/17/19 18:16	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.13	1		12/17/19 18:16	108-90-7	
Chloroethane	ND	ug/L	1.0	0.42	1		12/17/19 18:16	75-00-3	
Chloroform	ND	ug/L	1.0	0.10	1		12/17/19 18:16	67-66-3	
Chloromethane	ND	ug/L	1.0	0.16	1		12/17/19 18:16	74-87-3	
Dibromochloromethane	ND	ug/L	1.0	0.15	1		12/17/19 18:16	124-48-1	
1,1-Dichloroethane	ND	ug/L	1.0	0.097	1		12/17/19 18:16	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.14	1		12/17/19 18:16	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.22	1		12/17/19 18:16	75-35-4	
cis-1,2-Dichloroethene	**1.0**	ug/L	1.0	0.17	1		12/17/19 18:16	156-59-2	B
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.17	1		12/17/19 18:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.080	1		12/17/19 18:16	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.087	1		12/17/19 18:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.12	1		12/17/19 18:16	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.12	1		12/17/19 18:16	100-41-4	
2-Hexanone	ND	ug/L	10.0	1.0	1		12/17/19 18:16	591-78-6	
Methylene Chloride	ND	ug/L	1.0	0.27	1		12/17/19 18:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	0.56	1		12/17/19 18:16	108-10-1	
Styrene	ND	ug/L	1.0	0.15	1		12/17/19 18:16	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.31	1		12/17/19 18:16	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.22	1		12/17/19 18:16	127-18-4	
Toluene	ND	ug/L	1.0	0.14	1		12/17/19 18:16	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.12	1		12/17/19 18:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.10	1		12/17/19 18:16	79-00-5	
Trichloroethene	**15.0**	ug/L	1.0	0.17	1		12/17/19 18:16	79-01-6	
Vinyl chloride	ND	ug/L	1.0	0.11	1		12/17/19 18:16	75-01-4	
Xylene (Total)	ND	ug/L	3.0	0.34	1		12/17/19 18:16	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	97	%	80-120		1		12/17/19 18:16	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	77-122		1		12/17/19 18:16	17060-07-0	
Toluene-d8 (S)	100	%	80-120		1		12/17/19 18:16	2037-26-5	
Preservation pH	**1.0**		0.10	0.10	1		12/17/19 18:16		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323873

QC Batch: 628553 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Water 10 mL Purge
Associated Lab Samples: 60323873001, 60323873002

METHOD BLANK: 2562015 Matrix: Water
Associated Lab Samples: 60323873001, 60323873002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	1.0	0.12	12/17/19 13:32	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.31	12/17/19 13:32	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.10	12/17/19 13:32	
1,1-Dichloroethane	ug/L	ND	1.0	0.097	12/17/19 13:32	
1,1-Dichloroethene	ug/L	ND	1.0	0.22	12/17/19 13:32	
1,2-Dichloroethane	ug/L	ND	1.0	0.14	12/17/19 13:32	
1,2-Dichloropropane	ug/L	ND	1.0	0.080	12/17/19 13:32	
2-Butanone (MEK)	ug/L	ND	10.0	0.70	12/17/19 13:32	
2-Hexanone	ug/L	ND	10.0	1.0	12/17/19 13:32	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	0.56	12/17/19 13:32	
Acetone	ug/L	ND	10.0	3.3	12/17/19 13:32	
Benzene	ug/L	ND	1.0	0.079	12/17/19 13:32	
Bromodichloromethane	ug/L	ND	1.0	0.17	12/17/19 13:32	
Bromoform	ug/L	ND	1.0	0.21	12/17/19 13:32	
Bromomethane	ug/L	ND	5.0	0.32	12/17/19 13:32	
Carbon disulfide	ug/L	ND	5.0	0.16	12/17/19 13:32	
Carbon tetrachloride	ug/L	ND	1.0	0.084	12/17/19 13:32	
Chlorobenzene	ug/L	ND	1.0	0.13	12/17/19 13:32	
Chloroethane	ug/L	ND	1.0	0.42	12/17/19 13:32	
Chloroform	ug/L	ND	1.0	0.10	12/17/19 13:32	
Chloromethane	ug/L	ND	1.0	0.16	12/17/19 13:32	
cis-1,2-Dichloroethene	ug/L	0.22J	1.0	0.17	12/17/19 13:32	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.087	12/17/19 13:32	
Dibromochloromethane	ug/L	ND	1.0	0.15	12/17/19 13:32	
Ethylbenzene	ug/L	ND	1.0	0.12	12/17/19 13:32	
Methylene Chloride	ug/L	ND	1.0	0.27	12/17/19 13:32	
Styrene	ug/L	ND	1.0	0.15	12/17/19 13:32	
Tetrachloroethene	ug/L	ND	1.0	0.22	12/17/19 13:32	
Toluene	ug/L	ND	1.0	0.14	12/17/19 13:32	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.17	12/17/19 13:32	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.12	12/17/19 13:32	
Trichloroethene	ug/L	ND	1.0	0.17	12/17/19 13:32	
Vinyl chloride	ug/L	ND	1.0	0.11	12/17/19 13:32	
Xylene (Total)	ug/L	ND	3.0	0.34	12/17/19 13:32	
1,2-Dichloroethane-d4 (S)	%	97	77-122		12/17/19 13:32	
4-Bromofluorobenzene (S)	%	97	80-120		12/17/19 13:32	
Toluene-d8 (S)	%	99	80-120		12/17/19 13:32	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323873

LABORATORY CONTROL SAMPLE: 2562016

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	20.3	102	79-120	
1,1,2,2-Tetrachloroethane	ug/L	20	19.7	99	71-122	
1,1,2-Trichloroethane	ug/L	20	20.4	102	76-123	
1,1-Dichloroethane	ug/L	20	19.8	99	78-117	
1,1-Dichloroethene	ug/L	20	19.6	98	74-122	
1,2-Dichloroethane	ug/L	20	19.1	95	73-120	
1,2-Dichloropropane	ug/L	20	19.9	100	78-115	
2-Butanone (MEK)	ug/L	100	86.3	86	54-133	
2-Hexanone	ug/L	100	93.2	93	60-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	103	103	62-130	
Acetone	ug/L	100	82.8	83	54-130	
Benzene	ug/L	20	20.2	101	80-120	
Bromodichloromethane	ug/L	20	20.2	101	78-121	
Bromoform	ug/L	20	18.4	92	62-137	
Bromomethane	ug/L	20	15.1	76	41-145	
Carbon disulfide	ug/L	20	20.3	101	64-119	
Carbon tetrachloride	ug/L	20	20.5	102	77-122	
Chlorobenzene	ug/L	20	20.3	102	80-123	
Chloroethane	ug/L	20	19.1	95	60-146	
Chloroform	ug/L	20	20.3	102	81-116	
Chloromethane	ug/L	20	18.4	92	29-154	
cis-1,2-Dichloroethene	ug/L	20	20.8	104	80-120	
cis-1,3-Dichloropropene	ug/L	20	19.8	99	78-118	
Dibromochloromethane	ug/L	20	20.7	104	73-128	
Ethylbenzene	ug/L	20	20.5	102	80-120	
Methylene Chloride	ug/L	20	20.1	100	80-126	
Styrene	ug/L	20	20.8	104	85-120	
Tetrachloroethene	ug/L	20	20.7	103	77-121	
Toluene	ug/L	20	20.0	100	80-120	
trans-1,2-Dichloroethene	ug/L	20	20.5	103	80-120	
trans-1,3-Dichloropropene	ug/L	20	19.8	99	76-123	
Trichloroethene	ug/L	20	18.0	90	80-121	
Vinyl chloride	ug/L	20	19.0	95	46-162	
Xylene (Total)	ug/L	60	61.7	103	80-120	
1,2-Dichloroethane-d4 (S)	%			100	77-122	
4-Bromofluorobenzene (S)	%			96	80-120	
Toluene-d8 (S)	%			103	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323873

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

BATCH QUALIFIERS

Batch: 628553

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WHIRLPOOL, FORT SMITH AR
Pace Project No.: 60323873

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60323873001	**TMW-34-201912**	EPA 5030B/8260	628553		
60323873002	**TMW-61R-201912**	EPA 5030B/8260	628553		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

WO# : 60323873

60323873

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Af

ALL S

Company: Ramboll	Billing Information:
Address:	
Report To: Tamara House Knight	Email To:
Copy To: Nick Zumwalt / Haley Anders	Site Collection Info/Address:
Customer Project Name/Number: Whirlpool	State: / County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Haley Anders	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature): Haley Anders	Turnaround Date Required: Standard Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

Container Preservative Type **: 3

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses: 8260D Full List VOC

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	(Y)	N	NA
Custody Signatures Present	(Y)	N	NA
Collector Signature Present	(Y)	N	NA
Bottles Intact	(Y)	N	NA
Correct Bottles	(Y)	N	NA
Sufficient Volume	(Y)	N	NA
Samples Received on Ice	(Y)	N	NA
VOA - Headspace Acceptable	(Y)	N	NA
USDA Regulated Soils	Y	N	(NA)
Samples in Holding Time	(Y)	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips: _____			
Sample pH Acceptable	Y	N	(NA)
pH Strips: _____			
Sulfide Present	Y	N	(NA)
Lead Acetate Strips: _____			

LAB USE ONLY:
Lab Sample # / Comments:

60323873
001
002

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	8260D Full List VOC
TMW-34-201912	GW	G	12/7/19	1040	n/a	n/a		3	X
TMW-61R-201912	↓	↓	↓	1240	↓	↓		↓	↓

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used: Bubble Bags

Radchem sample(s) screened (<500 cpm): Y (N) NA

SHORT HOLDS PRESENT (<72 hours): Y (N) N/A

Lab Tracking #: 7787 4733 8646 2444553

Samples received via: (FEDEX) UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: T246
Cooler 1 Temp Upon Receipt: 1.9 oC
Cooler 1 Therm Corr. Factor: +0.0 oC
Cooler 1 Corrected Temp: 1.9 oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Haley Anders / Ramboll	12/9/19 1630	[signature] UPS	12/11/19 0845
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y (N) NA
HCL MeOH TSP Other

Non Conformance(s): YES / (NO)

Page: _____ of: _____

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: Tamara R. House-Knight
Ramboll
124 W. Capitol Avenue
Suite 1605
Little Rock, AR 72201

Phone: 501-907-9437

Fax:

Identifier: 091QJ **Date Rec:** 10/23/2019 **Report Date:** 10/31/2019

Client Project #: **Client Project Name:** Whirlpool Fort Smith

Purchase Order #:

Analysis Requested: CENSUS

Reviewed By:



NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **Ramboll**
Project: Whirlpool Fort Smith

MI Project Number: **091QJ**
Date Received: 10/23/2019

Sample Information

Client Sample ID:		**TMW-10-201910**	**TMW-11-201910**	**MW-89-201910**	**MW-50R-201910**	**RW-69-201910**
Sample Date:		10/22/2019	10/22/2019	10/22/2019	10/23/2019	10/23/2019
Units:		cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst/Reviewer:		HT	HT	HT	HT	HT
Dechlorinating Bacteria						
Dehalococcoides	*DHC*	**2.00E+04**	**6.38E+02**	<5.00E-01	**2.30E+00**	**7.00E-01**
tceA Reductase	TCE	**1.89E+03**	**2.89E+01**	<5.00E-01	<1.70E+00	<5.00E-01
BAV1 Vinyl Chloride Reductase	BVC	<1.00E+01	<2.00E+00	<5.00E-01	<1.70E+00	<5.00E-01
Vinyl Chloride Reductase	VCR	**1.79E+03**	**4.03E+01**	<5.00E-01	<1.70E+00	<5.00E-01

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **Ramboll**
Project: Whirlpool Fort Smith

MI Project Number: **091QJ**
Date Received: 10/23/2019

Sample Information

Client Sample ID:		**ITMW-9-201910**	**MW-87-201910**	**MW-58R-201910**	**MW-38-201910**	**MW-147-201910**
Sample Date:		10/23/2019	10/23/2019	10/23/2019	10/23/2019	10/24/2019
Units:		cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst/Reviewer:		HT	HT	HT	HT	HT
Dechlorinating Bacteria						
Dehalococcoides	*DHC*	<5.00E-01	**5.00E-01 (J)**	**4.00E-01 (J)**	**1.24E+02**	<3.10E+00
tceA Reductase	TCE	<5.00E-01	<5.00E-01	<7.00E-01	<5.00E-01	<3.10E+00
BAV1 Vinyl Chloride Reductase	BVC	<5.00E-01	<5.00E-01	<7.00E-01	**2.46E+01**	<3.10E+00
Vinyl Chloride Reductase	VCR	<5.00E-01	<5.00E-01	<7.00E-01	<5.00E-01	<3.10E+00

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **Ramboll**
Project: Whirlpool Fort Smith

MI Project Number: **091QJ**
Date Received: 10/23/2019

Sample Information

Client Sample ID:		**MW-95-201910**	**MW-25R-201910**
Sample Date:		10/24/2019	10/25/2019
Units:		cells/mL	cells/mL
Analyst/Reviewer:		HT	HT
Dechlorinating Bacteria			
Dehalococcoides	*DHC*	<3.10E+00	<2.30E+00
tceA Reductase	TCE	<3.10E+00	<2.30E+00
BAV1 Vinyl Chloride Reductase	BVC	<3.10E+00	<2.30E+00
Vinyl Chloride Reductase	VCR	<3.10E+00	<2.30E+00

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

Quality Assurance/Quality Control Data

Samples Received 10/23/2019

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
DHC	10/23/2019	10/31/2019	0 °C	109%	non-detect	non-detect
BVC	10/23/2019	10/31/2019	0 °C	102%	non-detect	non-detect
TCE	10/23/2019	10/31/2019	0 °C	99%	non-detect	non-detect
VCR	10/23/2019	10/31/2019	0 °C	100%	non-detect	non-detect

Samples Received 10/24/2019

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
DHC	10/24/2019	10/31/2019	0 °C	107%	non-detect	non-detect
BVC	10/24/2019	10/31/2019	0 °C	102%	non-detect	non-detect
TCE	10/24/2019	10/31/2019	0 °C	99%	non-detect	non-detect
VCR	10/24/2019	10/31/2019	0 °C	100%	non-detect	non-detect

Samples Received 10/25/2019

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
DHC	10/25/2019	10/31/2019	0 °C	112%	non-detect	non-detect
BVC	10/25/2019	10/31/2019	0 °C	103%	non-detect	non-detect
TCE	10/25/2019	10/31/2019	0 °C	100%	non-detect	non-detect
VCR	10/25/2019	10/31/2019	0 °C	97%	non-detect	non-detect

Samples Received 10/26/2019

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
DHC	10/26/2019	10/31/2019	0 °C	112%	non-detect	non-detect
BVC	10/26/2019	10/31/2019	0 °C	103%	non-detect	non-detect
TCE	10/26/2019	10/31/2019	0 °C	100%	non-detect	non-detect
VCR	10/26/2019	10/31/2019	0 °C	97%	non-detect	non-detect

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 7, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60318969**

Pace Workorder: 31884

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Thursday, October 24, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/07/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 26

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31884 60318969

Lab ID	Sample ID	Matrix	Date Collected	Date Received
318840001	TMW-21-201910	Water	10/22/2019 16:00	10/24/2019 11:00
318840002	TMW-11-201910	Water	10/22/2019 13:45	10/24/2019 11:00
318840003	TMW-10-201910	Water	10/22/2019 14:05	10/24/2019 11:00
318840004	MW-89-201910	Water	10/22/2019 16:30	10/24/2019 11:00
318840005	TMW-11-201910	Bubble Strip	10/22/2019 13:45	10/24/2019 11:00
318840006	TMW-10-201910	Bubble Strip	10/22/2019 14:05	10/24/2019 11:00
318840007	MW-89-201910	Bubble Strip	10/22/2019 16:30	10/24/2019 11:00

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31884 60318969

Workorder Comments

The container pH for samples 31884 (0001-0004) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31884 60318969

Lab ID: **318840001** Date Received: 10/24/2019 11:00 Matrix: Water

Sample ID: **TMW-21-201910** Date Collected: 10/22/2019 16:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**12000**	ug/l	0.50	0.094	1	11/1/2019 13:11	MM	n
Ethane	**0.48**	ug/l	0.10	0.011	1	11/1/2019 13:11	MM	n
Ethene	**1.2**	ug/l	0.10	0.0080	1	11/1/2019 13:11	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31884 60318969

Lab ID: **318840003** Date Received: 10/24/2019 11:00 Matrix: Water

Sample ID: **TMW-10-201910** Date Collected: 10/22/2019 14:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**14000**	ug/l	0.50	0.094	1	11/1/2019 13:37	MM	n
Ethane	**0.74**	ug/l	0.10	0.011	1	11/1/2019 13:37	MM	n
Ethene	**2.8**	ug/l	0.10	0.0080	1	11/1/2019 13:37	MM	n
Acetylene	**<0.50**	ug/l	0.50	0.037	1	11/1/2019 13:37	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31884 60318969

Lab ID: **318840006** Date Received: 10/24/2019 11:00 Matrix: Bubble Strip

Sample ID: **TMW-10-201910** Date Collected: 10/22/2019 14:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Hydrogen	**1.6**	nM	1.0	0.75	1	10/30/2019 11:28	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31884 60318969

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31884 60318969

QC Batch: DISG/7882 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 318840005, 318840006, 318840007

METHOD BLANK: 64051

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Hydrogen	nM	<1.0	1.0	n

LABORATORY CONTROL SAMPLE & LCSD: 64052 64053

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Hydrogen	nM	24	24	24	101	99	80-120	1.4	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31884 60318969

QC Batch: DISG/7890 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 318840001, 318840002, 318840003, 318840004

METHOD BLANK: 64121

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n
Acetylene	ug/l	<0.50	0.50	n

LABORATORY CONTROL SAMPLE & LCSD: 64123 64125

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	790	800	106	107	80-120	1.5	20	n
Ethane	ug/l	38	42	41	111	109	80-120	2.3	20	n
Ethene	ug/l	35	40	39	113	110	80-120	2.1	20	n
Acetylene	ug/l	33	37	36	112	110	80-120	2.1	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 31884 60318969

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31884 60318969

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
318840005	TMW-11-201910			AM20GAX	DISG/7882
318840006	TMW-10-201910			AM20GAX	DISG/7882
318840007	MW-89-201910			AM20GAX	DISG/7882
318840001	TMW-21-201910			AM20GAX	DISG/7890
318840002	TMW-11-201910			AM20GAX	DISG/7890
318840003	TMW-10-201910			AM20GAX	DISG/7890
318840004	MW-89-201910			AM20GAX	DISG/7890

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

1

Chain of Custody

PASI Kansas Laboratory

31884

Pace Analytical®
www.pacelabs.com

Workorder: 60318969 **Workorder Name:** WHIRLPOOL FORT SMITH, AR **Results Requested By:** 11/4/2019

Report / Invoice To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy P.O. SUB 10245

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	M/E/E, Acetylene, Hydrogen	M/E/E	LAB USE ONLY
1	TMW-21-201910	10/22/2019 16:00	60318969020	Water	3		X	
2	TMW-11-201910	10/22/2019 13:45	60318969021	Water	4	X		
3	TMW-10-201910	10/22/2019 14:05	60318969022	Water	4	X		
4	MW-89-201910	10/22/2019 16:30	60318969023	Water	4	X		
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	Holly Thompson	10/23/19 1800	LOR PASI	10.24 1100
2				
3				

Comments

60318969020: 3X40ml vials TSP
60318969021-023: 3X40ml vials TSP, 1 x 20cc vapor vial

Cooler Temperature on Receipt 1.4 °C | **Custody Seal** Y or (N) | **Received on Ice** (Y) or N | **Samples Intact** Y or N

Cooler Receipt Form

Client Name: Pace **Project:** 60318969 **Lab Work Order:** 31884

A. **Shipping/Container Information** (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ **Air bill Present:** (Yes) No

Tracking Number: 1219 2981 2342

Custody Seal on Cooler/Box Present: Yes (No) **Seals Intact:** Yes No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None **Ice Intact:** (Yes) Melted

Cooler Temperature: 1.4°C **Radiation Screened:** Yes (No) **Chain of Custody Present:** (Yes) No

Comments:_____

B. **Laboratory Assignment/Log-in** (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected		✓		
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?		✓		

Comments:_____

_____

Cooler contents examined/received by : LY **Date:** 10-24-19

Project Manager Review : JW **Date:** 10/24/19

F-PAE-Q-009-rev.01, 3Oct2017

NON-CONFORMANCE FORM

PAES Work Order #: 31884

Date: 10-24-19 Time of Receipt: 11.00 Receiver: _____

Client: Pace

REASON FOR NON-CONFORMANCE:

First 3 samples ID on vials started with ITMW.

ACTION TAKEN:

Client name: Jamie Church Date: 10/24/19 Time: 14:40

client emailed

Customer Service Initials: JW Date: 10/24/19

F-PAE-Q-014-rev.00, 20 Nov2014

Emma Louis - Re: 60318969

From: Jamie Church
To: Ward, Joseph
Date: 10/24/2019 2:45 PM
Subject: Re: 60318969
Cc: Louis, Emma
Attachments: 60318969_coc.pdf

Here is the original COC. Says TMW

>>> Joseph Ward 10/24/2019 1:40 PM >>>
Upon receiving your samples for the project referenced above, We noticed the following.

The first three samples beginning ID's started with ITMW on the vials but on the COC it states the samples ID's should be TMW. Can you confirm the correct sample id?

Thank you

Joseph Ward
Customer Service
Pace Analytical Energy Services
220 William Pitt Way
Pittsburgh PA 15238
412-826-5245/412-826-2384(Direct)

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Aff

WO# : 60318969

60318969

MTJL Log-in

ALL S

Company: Ramboll	Billing Information: Tamara House-Knight	
Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210		Container Preservative Type ** / Lab Project Manager:
Report To: Tamara House-Knight	Email To: thouseknight@ramboll.com	** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other
Copy To: Nick Zurweller nzurweller@ramboll.com	Site Collection Info/Address: Fort Smith, AR	Analyses / LAB Profile/Line: 7444 Line 1
Customer Project Name/Number:	State: AR County/City: Sebastian Time Zone Collected: PT MT (CT) ET	
Phone: / Email:	Site/Facility ID #:	Compliance Monitoring? [ ] Yes [X] No
Collected by (print): Alyssa Larson	Purchase Order #:	DW PWS ID #:
Collected by (signature): Alyssa	Quote #:	DW Location Code #:
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold	Turnaround Date Required: RUSH: Std TAT Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)	Immediately Packed on Ice? [X] Yes [ ] No; Field Filtered (if applicable): [ ] Yes [X] No; Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	VOCs (Full List 8260)	LAB Sample # / Comments
MW-17G-20191C	GW	Grab	10/22/19	1555	N/A	N/A		3	X	001
MW-18I-20191C				1425						002
MW-18E-20191C				1535						003
MW-18E-20191C-MS				1535						004
MW-18E-20191C-MSD				1535						005
MW-62R-20191C				1309						004 006
MW-68-20191C				1434						005 007
MW-40R-20191C				1605						006 008
MW-40R-20191C-MS				1605						
MW-40R-20191C-MSD	↓	↓	↓	1605	↓	↓		↓	↓	

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	(Y)	N	NA
Custody Signatures Present	(Y)	N	NA
Collector Signature Present	(Y)	N	NA
Bottles Intact	(Y)	N	NA
Correct Bottles	(Y)	N	NA
Sufficient Volume	(Y)	N	NA
Samples received on ice	(Y)	N	NA
VOA - Headspace Acceptable	(Y)	N	NA
USDA Regulated Soils	Y	N	(NA)
Samples in holding time	(Y)	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips:			
Sample pH Acceptable	Y	(N)	NA
pH Strips:			
Sulfide Present	(Y)	N	NA
Lead Acetate Strips:			

60318969

↓ LAB USE ONLY: ↓ Lab Sample # / Comments

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

Packing Material Used: Zip Bubble Bag

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

SHORT HOLDS PRESENT (< 72 hours): Y (N) N/A

LAB Tracking #:

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier []

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: (Y) N NA

Therm ID #: T298

Cooler Temp Upon Receipt: 1.6 oC 2.1

Cooler Therm Corr. Factor: +0.0 oC

Cooler Temp Corrected: 1.6 oC 2.1

Comments:

Trip Blank Received: (Y) N N/A HCL MeOH TSP Other

Non-Conformance(s): YES / NO

Page 1 of 4

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
(see page 4)		[illegible]	10.23.19 0620
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll | Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight | Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller nzurweller@ramboll.com | Site Collection Info/Address: Fort Smith, AR

Customer Project Name/Number: | State: AR | County/City: Sebastian | Time Zone Collected: PT MT (CT) ET

Phone: | Email:

Site/Facility ID #: | Purchase Order #: | Quote #: | Tumaround Date Required:

Compliance Monitoring? [ ] Yes [X] No | DW PWS ID #: | DW Location Code #: | Immediately Packed on Ice? [X] Yes [ ] No

Collected by (print): Alyssa Lawson

Collected by (signature):

Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____

RUSH: Std TAT Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [X] No | Analysis: _____

Container Preservative Type **: 3

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

Analyses: VOCs (Full List 624.1)

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

60318969

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	VOCs	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
MW-191-20191C	GW	Grab	10/22/19	12:55	N/A	N/A		3	X	007
MW-190-20191C				14.25						008
MW-192-20191C				1555						009
MW-192-20191C-MS				1555						
MW-192-20191C-MSD				1555						
TMW-35-20191C				1550						010
TMW-35-20191C-MS				1550						
TMW-35-20191C-MSD				1550						
MW-63R-20191C				1310						011
MW-39R-20191C	↓	↓	↓	1430	↓	↓		↓	↓	012

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used: | LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
	(See page 4)		10/23/19 0620
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #: _____

ACCT #: _____

Template: _____

Prelogin: _____

PM: _____

PB: _____

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 2 of 4

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Container Preservative Type **: 3

Lab Project Manager:

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Copy To: Nick Zurweller nzurwellen@ramboll.com

Site Collection Info/Address: Fort Smith, AR

Customer Project Name/Number:

State: AR | County/City: Sebastian | Time Zone Collected: PT MT (CT) ET

Analyses: VOCs (Full List 8260)

LAB Profile/Line: 7444 Line 1

Phone:
Email:

Site/Facility ID #

Compliance Monitoring? [ ] Yes [X] No

Collected by (print): Alyssa Larson

Purchase Order #

DW PWS ID #:

Quote #

DW Location Code #:

Collected by (signature):

Turnaround Date Required:

Immediately Packed on Ice? [X] Yes [ ] No

Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive _____ [ ] Hold _____

RUSH: Std. TAT Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [X] No

Analysis: _____

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

60318969

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

	Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	VOCs (Full List 8260)	LAB USE ONLY: Lab Sample # / Comments
1	EB-01-201910	W	Grab	10/22/19	1150	NA	N/A		3	X	013
1	TB-01-201910	W	—		17:05				2		014
1	MW-195-201910	GW	Grab		16:20				3		015
	MW-195-201910-MS				16:20						
	MW-195-201910-MSD				16:20						
1	TMW-29-201910				~~16:25~~ 1430						016
1	TMW-20-201910				1405						017
2	TB-02-201910	W	—		1715				2		018
1	ITMW-07-201910	GW	Grab		1715				3		019

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y N N/A

Packing Material Used:

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: _____

Cooler Temp Upon Receipt _____ oC

Cooler Therm Corr. Factor _____ oC

Cooler Temp Corrected _____ oC

Comments: _____

Trip Blank Received: Y N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Page 3 of 4

	Date/Time:		Date/Time:
Relinquished by/Company : (Signature)	(see page 4)	Received by/Company : (Signature)	
Relinquished by/Company : (Signature)		Received by/Company : (Signature)	
Relinquished by/Company : (Signature)		Received by/Company : (Signature)	

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT- Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Ramboll

Billing Information: Tamara House-Knight

Address: 7500 College Blvd., Ste 925 Overland Park, KS 66210

Report To: Tamara House-Knight

Email To: thouseknight@ramboll.com

Copy To: Nick Zurweller nzurweller@ramboll.com

Site Collection Info/Address: Fort Smith AR

Customer Project Name/Number:

State: AR County/City: Sebastian Time Zone Collected: PT MT (CT) ET

Phone:

Email: jpavlowsky@ramboll.com

Site/Facility ID #

Compliance Monitoring? [ ] Yes [ ] No

Collected by (print): Johanna Pavlowsky

Purchase Order #

Quote #

DW PWS ID #:

DW Location Code #:

Collected by (signature): JP Pavlowsky

Turnaround Date Required:

Immediately Packed on Ice? [X] Yes [ ] No

Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive [ ] Hold

RUSH: (Std) Same Day Next Day 2 Day 3 Day 4 Day 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: (3) (D) (D) (2) (1) (O) (4,3,7)

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other benzylalkonium chloride (BAK)

Lab Project Manager:

Analyses

LAB Profile/Line: 7444 Line 1

LAB Sample Receipt Checklist:

Custody Seals Present/Intact	(Y)	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples received on ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	(NA)
Samples in holding time	Y	N	NA
Residual Chlorine Present	Y	N	(NA)
Cl Strips:			
Sample pH Acceptable	Y	(N)	NA
pH Strips:			
Sulfide Present	(Y)	N	NA
Lead Acetate Strips:			

(00318969

	Customer Sample ID	Matrix*	Comp/ Grab	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Ctns	VOCs EPA 8260	Methylene, Ethane, Ethene (MEE)	MEE, Acetylene (MEEA)	Sulfate, Nitrate, Chloride	Sulfate, Nitrate, (only)	Total organic carbon	TOTAL IRON	volatile fatty acids	TOTAL DISSOLVED CARBON	Sulfide hydrogen	↓ LAB USE ONLY: ↓ Lab Sample # / Comments
2	TMW-21-20191O	GW	G	10-22-19	1600				12	X	X		X		X	X	X	X		020
2	TMW-11-20191O	GW	G	↓	1345				14	X		X	X		X	X	X	X	X	021
2	TMW-10-20191O	GW	G		1405				14	X		X	X		X	X	X	X	X	022
2	MW-89-20191O	GW	G	↓	1630				11	X		X		X	X	X			X	023

JP

Customer Remarks/ Special Conditions/ Possible Hazards:

Type of Ice Used: Wet [ ] Blue [ ] Dry [ ] None [ ]

SHORT HOLDS PRESENT (< 72 hours): Y (N) N/A

Packing Material Used: Zplc Bubble Bag

LAB Tracking #:

Radchem sample(s) screened: (<500 cpm): [ ] Y [ ] N [ ] NA

Samples received via: FEDEX [ ] UPS [ ] Client [ ] Courier [ ] Pace Courier [ ]

MTJL LAB USE ONLY

Table #:

ACCT #:

Template:

Prelogin:

PM:

PB:

LAB Sample Temperature Info:

Temp Blank received: Y N NA

Therm ID #: T298

Cooler Temp Upon Receipt: 1.6 oC 2.1

Cooler Therm Corr. Factor: +0.1 oC

Cooler Temp Corrected: 1.6 oC

Comments:

Trip Blank Received: (Y) N N/A

HCL MeOH TSP Other

NonConformance(s): YES / NO

Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
JP Pavlowsky /RSH	10/22/19 @1800	Client	10/23/19 0620
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:
Relinquished by/Company : (Signature)	Date/Time:	Received by/Company : (Signature)	Date/Time:

Page 1 of 4

Pace Analytical

Sample Receiving Non-Conformance Form (NCF)

Date: 10-23-19	Evaluated by: WC pt / Pace	Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here
Client: Kanboll		

1. If Chain-of-Custody (COC) is not received: contact client and if necessary, fill out a COC and indicate that it was filled out by lab personnel. Note issues on this NCF.

2. If COC is incomplete, check applicable issues below and add details where appropriate:

	Collection date/time missing or incorrect		Analyses or analytes: missing or clarification needed		Samples listed on COC do not match samples received (missing, additional, etc.)
	Sample IDs on COC do not match sample labels		Required trip blanks were not received		Required signatures are missing

Comments/Details/Other Issues not listed above:

3. Sample integrity issues: check applicable issues below and add details where appropriate:

	Samples: Past holding time		Samples: Condition needs to be brought to lab personnel's attention (details below)	X	Preservation: Improper
	Samples: Not field filtered		Containers: Broken or compromised		Temperature: not within acceptance criteria (typically 0-6C)
	Samples: Insufficient volume received		Containers: Incorrect		Temperature: Samples arrived frozen
	Samples: Cooler damaged or compromised		Custody Seals: Missing or compromised on samples, trip blanks or coolers		Vials received with improper headspace
	Samples: contain chlorine or sulfides		Packing Material: Insufficient/Improper		Other:

Comments/Details:

TMW-21-201910 has PH of 3
added 2.5 mL of HNO3 Final PH 1.5 Lot 9589-34

4. If Samples not preserved properly and Sample Receiving adjusts pH, add details below:

Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:
Sample ID:	Date/Time:	Amount/type pres added:
Preserved by:	Initial and Final pH:	Lot # of pres added:

5. Client Contact: If client is contacted for any issue listed above, fill in details below:

Client:	Contacted per:	
PM Initials:	Date/Time	

Client Comments/Instructions:

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

November 8, 2019

Jamie Church
Pace Analytical Kansas
9608 Loiret Blvd
Lenexa, KS 66219

RE: **60319115 WHIRLPOOL**
Pace Workorder: 31904

Dear Jamie Church:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, October 25, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ruth Welsh 11/08/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 29

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 31904 60319115 WHIRLPOOL

Lab ID	Sample ID	Matrix	Date Collected	Date Received
319040001	MW-194-201910	Water	10/23/2019 10:40	10/25/2019 09:50
319040002	MW-61R-201910	Water	10/23/2019 09:10	10/25/2019 09:50
319040003	TMW-26-201910	Water	10/23/2019 17:00	10/25/2019 09:50
319040004	MW-50R-201910	Water	10/23/2019 09:35	10/25/2019 09:50
319040005	RW-69-201910	Water	10/23/2019 11:25	10/25/2019 09:50
319040006	ITMW-9-201910	Water	10/23/2019 13:05	10/25/2019 09:50
319040007	MW-87-201910	Water	10/23/2019 13:10	10/25/2019 09:50
319040008	MW-58R-201910	Water	10/23/2019 15:15	10/25/2019 09:50
319040009	MW-38-201910	Water	10/23/2019 17:00	10/25/2019 09:50
319040010	TMW-16-201910	Water	10/23/2019 15:15	10/25/2019 09:50
319040011	TMW-22R-201910	Water	10/23/2019 12:30	10/25/2019 09:50
319040012	MW-50R-201910	Bubble Strip	10/23/2019 09:35	10/25/2019 09:50
319040013	RW-69-201910	Bubble Strip	10/23/2019 11:25	10/25/2019 09:50
319040014	ITMW-9-201910	Bubble Strip	10/23/2019 13:05	10/25/2019 09:50
319040015	MW-87-201910	Bubble Strip	10/23/2019 13:10	10/25/2019 09:50
319040016	MW-58R-201910	Bubble Strip	10/23/2019 15:15	10/25/2019 09:50
319040017	MW-38-201910	Bubble Strip	10/23/2019 17:00	10/25/2019 09:50

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 31904 60319115 WHIRLPOOL

Workorder Comments

The container pH for samples 31904 (0001-0011) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAx.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040001** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-194-201910** Date Collected: 10/23/2019 10:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**9200**	ug/l	0.50	0.046	1	11/5/2019 08:10	BW	n
Ethane	**0.24**	ug/l	0.10	0.0050	1	11/5/2019 08:10	BW	n
Ethene	**0.12**	ug/l	0.10	0.0040	1	11/5/2019 08:10	BW	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040002** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **MW-61R-201910** Date Collected: 10/23/2019 09:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**3400**	ug/l	0.50	0.046	1	11/5/2019 08:24	BW	n
Ethane	**<0.10**	ug/l	0.10	0.0050	1	11/5/2019 08:24	BW	n
Ethene	**<0.10**	ug/l	0.10	0.0040	1	11/5/2019 08:24	BW	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040010** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-16-201910** Date Collected: 10/23/2019 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**24000**	ug/l	0.50	0.046	1	11/5/2019 10:12	BW	n
Ethane	**0.42**	ug/l	0.10	0.0050	1	11/5/2019 10:12	BW	n
Ethene	**5.1**	ug/l	0.10	0.0040	1	11/5/2019 10:12	BW	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 31904 60319115 WHIRLPOOL

Lab ID: **319040011** Date Received: 10/25/2019 09:50 Matrix: Water

Sample ID: **TMW-22R-201910** Date Collected: 10/23/2019 12:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**7800**	ug/l	0.50	0.046	1	11/5/2019 10:26	BW	n
Ethane	**2.1**	ug/l	0.10	0.0050	1	11/5/2019 10:26	BW	n
Ethene	**4.1**	ug/l	0.10	0.0040	1	11/5/2019 10:26	BW	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 31904 60319115 WHIRLPOOL

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31904 60319115 WHIRLPOOL

QC Batch: DISG/7882 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319040012, 319040013, 319040014, 319040015, 319040016, 319040017

METHOD BLANK: 64051

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Hydrogen	nM	<1.0	1.0	n

LABORATORY CONTROL SAMPLE & LCSD: 64052 64053

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Hydrogen	nM	24	24	24	101	99	80-120	1.4	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 31904 60319115 WHIRLPOOL

QC Batch: DISG/7896 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 319040001, 319040002, 319040003, 319040004, 319040005, 319040006, 319040007, 319040008, 319040009, 319040010, 319040011

METHOD BLANK: 64168

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n
Ethane	ug/l	<0.10	0.10	n
Ethene	ug/l	<0.10	0.10	n
Acetylene	ug/l	<0.50	0.50	n

LABORATORY CONTROL SAMPLE & LCSD: 64169 64170

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
Methane	ug/l	750	760	750	101	100	80-120	0.97	20	n
Ethane	ug/l	38	40	39	105	102	80-120	2.2	20	n
Ethene	ug/l	35	38	36	108	104	80-120	4	20	n
Acetylene	ug/l	33	38	34	115	105	80-120	8.9	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 31904 60319115 WHIRLPOOL

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 31904 60319115 WHIRLPOOL

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
319040012	MW-50R-201910			AM20GAX	DISG/7882
319040013	RW-69-201910			AM20GAX	DISG/7882
319040014	ITMW-9-201910			AM20GAX	DISG/7882
319040015	MW-87-201910			AM20GAX	DISG/7882
319040016	MW-58R-201910			AM20GAX	DISG/7882
319040017	MW-38-201910			AM20GAX	DISG/7882
319040001	MW-194-201910			AM20GAX	DISG/7896
319040002	MW-61R-201910			AM20GAX	DISG/7896
319040003	TMW-26-201910			AM20GAX	DISG/7896
319040004	MW-50R-201910			AM20GAX	DISG/7896
319040005	RW-69-201910			AM20GAX	DISG/7896
319040006	ITMW-9-201910			AM20GAX	DISG/7896
319040007	MW-87-201910			AM20GAX	DISG/7896
319040008	MW-58R-201910			AM20GAX	DISG/7896
319040009	MW-38-201910			AM20GAX	DISG/7896
319040010	TMW-16-201910			AM20GAX	DISG/7896
319040011	TMW-22R-201910			AM20GAX	DISG/7896

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Chain of Custody

PASI Kansas Laboratory

31904

Pace Analytical®
www.pacelabs.com

Workorder: 60319115 **Workorder Name:** WHIRLPOOL FORT SMITH, AR **Results Requested By:** 11/5/2019

Report / Invoice To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223 Email: jamie.church@pacelabs.com	Pace Energy P.O. SUB-10251

State of Sample Origin:

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Other	Preserved Containers: Unpreserved	Requested Analysis: M/E/E + Acetylene/Hydrogen	Requested Analysis: M/E/E	LAB USE ONLY
1	MW-194-201910	10/23/2019 10:40	60319115042	Water	3			X	
2	MW-61R-201910	10/23/2019 09:10	60319115043	Water	3			X	
3	TMW-26-201910	10/23/2019 17:00	60319115044	Water	3			X	
4	MW-50R-201910	10/23/2019 09:35	60319115052	Water	4		X		
5	RW-69-201910	10/23/2019 11:25	60319115053	Water	4		X		
6	ITMW-9-201910	10/23/2019 13:05	60319115054	Water	4		X		
7	MW-87-201910	10/23/2019 13:10	60319115055	Water	4		X		
8	MW-58R-201910	10/23/2019 15:15	60319115056	Water	4		X		
9	MW-38-201910	10/23/2019 17:00	60319115057	Water	4		X		
10	TMW-16-201910	10/23/2019 15:15	60319115060	Water	3			X	
11	TMW-22R-201910	10/23/2019 12:30	60319115061	Water	3			X	
12									
13									
14									
15									

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Kelly Faulk PASI	10/24/19 1300	LOR PASI	10.25	Sent 3 x 40mL TSP vials and 22cc vapor vial
2				0950	
3					

Cooler Temperature on Receipt 1 °C	Custody Seal Y or N	Received on Ice Y or N	Samples Intact Y or N

Cooler Receipt Form

Client Name: Pace **Project:** 603 19115 **Lab Work Order:** 31904

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ **Air bill Present:** (Yes) No

Tracking Number: 121924813213

Custody Seal on Cooler/Box Present: Yes (No) **Seals Intact:** Yes No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None **Ice Intact:** (Yes) Melted

Cooler Temperature: 1°C **Radiation Screened:** Yes (No) **Chain of Custody Present:** (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC			✓	
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	
Headspace present?		✓		

Comments:_____

_____

Cooler contents examined/received by : LJ **Date:** 10.25.19

Project Manager Review : ERJ **Date:** 10/25/19

F-PAE-Q-009-rev.01, 3Oct2017

Attachment I
Investigation Derived Waste Disposal Manifests

Liquids
Wm (quarry Landfill

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
			918-832-8888	107166 OK

5. Generator's Name and Mailing Address
Whirlpool corp

Generator's Site Address (if different than mailing address)
6400 Jenny Lynn Road
Ft smith AR

Generator's Phone:

6. Transporter 1 Company Name
ERS (Environmental Remediation Specialists

U.S. EPA ID Number

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
Waste Management (quarry LANDFILL RDF)

U.S. EPA ID Number

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	(WM 025E) Purge Water From Drilling					
2.	~~Water drums~~ Tote	1		325 gals		
3.						
4.						

13. Special Handling Instructions and Additional Information

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Ken Duckworth OBO Whirlpool corp
Signature:
Month: 12 Day: 3 Year: 19

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: ERS Christian Brown
Signature: Christian Brown
Month: 12 Day: 3 Year: 19

Transporter 2 Printed/Typed Name: NA
Signature:
Month: Day: Year:

DESIGNATED FACILITY

17. Discrepancy NA

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
NA

Manifest Reference Number:

17b. Alternate Facility (or Generator)
NA

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
NA

Month: Day: Year:

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name:
Signature:
Month: Day: Year:

169-BLS-C 5 11979 (Rev. 9/09)

DESIGNATED FACILITY'S COPY

American Environmental Landfill, Inc.

Leading the Industry in Environmental Compliance

Non-Hazardous Waste Manifest

Generator

Generator's Name: Whirlpool Corp

Mailing Address: 6400 Jenny Lynn Road

Ft Smith AR

City State Zip

Point of Generation Address:

City State Zip

Contact: Nick 636 579-6883

Name Phone

Manifest Job No. MW233WPC1

Bill to Name: ERS

Address: 1105 North Peoria

Tulsa OK 74106

City State Zip

Contact: Ken Duckworth 918-832-2888

Name Phone

Common Name of Waste Material	Container No.	Container Type	Total Quantity	Unit
Soil Borings Excavated Soils	41		Drums	

I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Ken Duckworth ODO Whirlpool Corp. Ken Duckworth

Generator Authorized Agent Name Signature Shipment Date

Transporter

Transporter Name: ERS

Address: 1105 North Peoria

City, State Zip: Tulsa OK 74106

Driver Name (Print): Christian Brown

Tag No. State: OK

USDOT No.

I hereby certify that the above material was picked up at the generator site listed above.

Christian Brown 10-3-19

Driver Signature Ship Date

I hereby certify that the above named material was delivered without incident to the destination listed below.

x Christian Brown 10-3-19

Driver Signature Delivery Date

Destination

American Environmental Landfill, Inc.
212 N. 177th W Ave.
Sand Springs, OK 74063

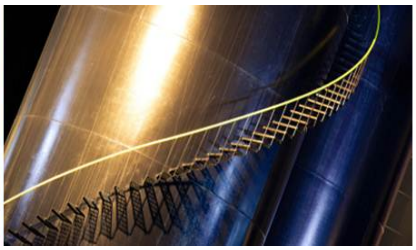
Phone: (918) 245-7786
Fax: (918) 245-7774
Permit No: 3557021

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is accurate.

Laura King Micki King Raven Blunt

Name of Authorized Agent Signature Receipt Date 10-3-19

White – Destination Retention • Yellow – Return to Bill to • Pink – Transporter Retain • Goldenrod – Generator Retain


ATTACHMENT J

2019 Onsite Indoor Air and Sub-Slab Vapor Monitoring Report

Whirlpool Facility
Fort Smith, Arkansas

Prepared for:
Whirlpool Corporation

Prepared by:
Ramboll US Corporation

Date:
February 2020

Project Number:
1690015112

RAMBOLL

Table of Contents

Page

1 Introduction 1

2 Sampling Methods 3
2.1 Pre-Sampling Preparation 3
2.2 Indoor and Outdoor Air Sampling 3

3 Evaluation of Results 6
3.1 Indoor Air 6
3.2 Sub-Slab Soil Vapor 6
3.3 Risk Estimates for Vapor Intrusion 6

4 Summary and Conclusion 8

5 References 9

LIST OF TABLES

Table 1: Indoor Air Sampling Results (October 2019)
Table 2: Sub-slab Soil Vapor Sampling Results (October 2019)
Table 3a-k: Indoor Air Human Health Risks (October 2019)
Table 4: Values Used for Daily Intake Calculations
Table 5: Toxicity Values

LIST OF FIGURES

Figure 1: Sampling Locations

LIST OF APPENDICES

Appendix A: Laboratory Analytical Data

1 Introduction

Ramboll US Corporation (Ramboll), on behalf of Whirlpool Corporation (Whirlpool), performed an indoor air and sub-slab soil vapor monitoring event in October 2019 at the former Whirlpool manufacturing building located at 6400 Jenny Lind Road in Fort Smith, Arkansas. The purpose of this fourth indoor air monitoring event was to evaluate potential vapor intrusion after renovations to the building were completed by Phoenix Investors, LLC (Phoenix) as a result of the trichloroethene (TCE) impacts in groundwater underlying the former Whirlpool building.

As summarized in the Two Year Technical Review Report (Ramboll Environ 2016a) and subsequent annual and semi-annual reports, TCE impact in groundwater exists primarily beneath the western portion of the former manufacturing building based upon historic operations performed at the site. The TCE impact in groundwater has been characterized based upon membrane interface probe (MIP) investigations, interior soil probes and borings for collection of soil and groundwater samples. Groundwater has been routinely monitored for more than 20 years.

Prior to the sale of the former manufacturing building, an assessment of indoor air quality to determine if there was a complete exposure pathway for vapor intrusion inside the building was completed. While the former manufacturing was unoccupied, two separate indoor air and sub-slab vapor monitoring events were performed in February 2016 and June 2016 (Ramboll Environ 2016b; Ramboll Environ 2016c).

The first monitoring report concluded “the indoor air data do not indicate health risks from vapor intrusion in the open areas of the building when it is operating under normal conditions.” Indoor air and sub-slab vapor samples were collected while facility doors were open and the building fans operating. 1,2-dichloroethane (1,2-DCA); trans-1,2-dichloroethene (trans-1,2-DCE); tetrachloroethene (PCE) and TCE were detected in indoor air during the first monitoring event at concentrations below US Environmental Protection Agency (USEPA) and Arkansas Department of Environmental Quality (ADEQ) indoor air screening levels.

The second monitoring event was conducted in June 2016 to simulate a worst-case scenario. The building ventilation system was in operation; however, all overhead doors were closed. Cis-1,2-dichloroethene (cis-1,2-DCE), PCE and TCE were detected in indoor air samples. Only TCE was detected above USEPA and ADEQ indoor air screening levels in two of the six sampled areas at concentrations of 8.1 micrograms per cubic meter (µg/m^3) and 19.4 µg/m^3 [compared to the USEPA industrial indoor air screening level of 0.88 µg/m^3 based on a conservative hazard index (HI) of 0.1].

All constituents detected in indoor air were detected in at least one sub-slab soil vapor sample; however, only TCE exceeded the USEPA sub-slab vapor screening level concentration (assuming USEPA’s default attenuation factor of 0.03) in two out of six sampled areas and vinyl chloride (VC) in one out of six sampled areas. Although the highest TCE concentrations detected in sub-slab soil vapor did not correlate with the same areas where the highest TCE indoor air concentrations were detected, it was concluded that there was a potential complete

exposure pathway due to vapor intrusion in certain areas of the building while the overhead doors are closed.

This report summarizes the data from the indoor air and soil vapor monitoring event conducted in October 2019 since the building has been renovated Phoenix. The purpose of the indoor air sampling was to assess the indoor air quality that current and future workers may encounter under current building operations.

2 Sampling Methods

2.1 Pre-Sampling Preparation

Since the February 2016 and June 2016 indoor air sampling events, the building has undergone several renovations to facilitate warehousing operations and currently houses tenants performing warehousing operations. Renovations have included painting, concrete slab placement after filling interior pits associated with historic operations and truck bay dock leveler installations. The eastern portion of the building is separated from the western portion by a newly constructed interior wall from floor to ceiling separating Zones 4 and 5 as depicted on Figure 1.

A walk-through of the building interior was performed by Ramboll, to identify any materials that may impact air quality (i.e. solvent storage, fuel storage, maintenance chemicals, etc.) during sampling and to identify building features that might serve as preferential pathways for vapor intrusion (e.g. floor joints or cracks, below grade pits, etc.). The only potentially significant preferential pathways observed in the eastern portion of the building were construction joints in the concrete slab at various locations associated with slab placements over previous pits and truck bay dock leveler installations.

2.2 Indoor and Outdoor Air Sampling

Indoor air samples were collected on October 22, 2019. During sampling, the building ventilation system was operating, interior overhead doors were open and exterior overhead doors and doorways were closed with exception to truck bays where loading and unloading activities were being conducted. Sampling was performed between approximately 0940 and 1900 central standard time (CDT) and during the monitoring event, the outside temperature ranged from approximately 55°F to 70°F, the relative humidity ranged from 30% to 60% and the wind was from the west, southwest and the speed ranged from calm to 24 miles per hour (mph) based upon climate data from the National Weather Service at the Fort Smith Regional Airport Station located approximately 2 miles northeast of the site (October 22, 2019, climate data).

Indoor air samples were collected from open areas at eleven locations within Zones 1-6 (including from an enclosed office area within Zone 5) as noted on Figure 1. The locations were chosen to assess indoor air quality throughout the building with emphasis on assessing locations in the building positioned above locations exhibiting the highest TCE concentrations in the groundwater plume underneath the building.

An outdoor, background air sample was also collected on October 22, 2019, to evaluate potential contributions from sources other than vapor intrusion. The outdoor air sample was collected from the parking area along the south property boundary approximately 250 feet east of TMW-36 which was upwind of the building when sample collection started.

Indoor and outdoor air samples, including one duplicate indoor air sample, were collected at breathing height (approximately 70 inches above the ground) over an 8 hour period. Samples were collected using certified clean stainless-steel Summa canisters provided by an accredited

analytical laboratory using flow control regulators preset by the laboratory to collect an 8 hour time integrated sample. The canister ID, regulator ID and initial canister pressure were logged at the beginning of sampling at each location. Initial canister negative pressures typically range from negative (-) 25 inches mercury (in. Hg) to – 30 in. Hg. upon receipt from the laboratory. Initial canister pressures during sampling ranged from -26 in. Hg to -30 in. Hg.

Indoor and outdoor air samples were collected until the pressure remaining in the canister read between 0 and - 21 in. Hg. Zero final vacuum measurements were recorded for samples from Zones 1, 5-1 and 5-2 indicating the canister filled faster than calibrated. Once the vacuum decreases below 5 in. Hg, the flow rate begins to decrease from its set point. The results for these samples indicate the respective samples are weighted toward the first portion of the sampling interval. Although the actual sampling interval is uncertain, the canister still contains a sample from the specific location.

Final vacuum measurements greater than 10 in. Hg were recorded for the sample collected from Zone 3-1. For this sample, the actual flow rate was lower than the set point and less sample volume was collected. This will typically result in elevated reporting limits; however, this was not an issue for the sample from Zone 3-1.

After sample collection was complete, the regulators were closed on the respective canisters and the canisters were shipped to the analytical laboratory for analysis of TCE and associated breakdown products using USEPA Method TO-15 SIM. The results are summarized in Table 1. The laboratory report containing the indoor and outdoor air sampling results is attached.

2.3 Sub-Slab Vapor Sampling

A new permanent sub-slab soil vapor sampling port was installed through the floor of the building on October 23, 2019 within a newly constructed interior office area located in Zone 5 (depicted as sample location Z5-OF). Additionally, on October 23, 2019 replacement sub-slab ports were installed in Zone 1 (Z1-1) and Zone 6 (Z6-1), replacing Q1 and Q6 sample ports that were damaged during building renovation. The sub-slab soil vapor sampling ports are present in the vicinity of the indoor air sampling locations discussed above. Sub-slab sampling locations are depicted on Figure 1.

Sampling ports were installed through the concrete floor using a hammer drill. The hammer drill was used to drill a roughly 2 inch deep, 1.5 inch outer diameter hole into the concrete floor. A smaller 5/8 inch inner diameter borehole was drilled approximately 6 inches deeper and through the bottom of the slab. Following drilling, the holes in the concrete were cleared of drill cuttings with a vacuum (Shop-Vac).

A Stainless Steel Vapor Pin™ was installed into each hole through the slab and hammered into place using a rubber mallet. The vapor pin was sealed into the 5/8 inch inner diameter borehole through the slab using the manufacturer supplied rubber sheath that is designed to create an airtight seal between the vapor pin and the concrete slab. An airtight cap was placed on the opening in the vapor pin that is used to withdraw sub-slab soil vapors for sampling. The new sampling ports were allowed to equilibrate overnight prior to sampling sub-slab soil vapor.

Sub-slab vapor sampling was conducted on October 24, 2019. Sampling was performed between approximately 10:00 and 18:40 CDT (samples consist of approximate 15 minute samples collected at various times throughout the day when access was granted by the tenant). During the sub-slab vapor sampling event the outside temperature ranged from 54°F to 55°F, the wind was from the east, northeast and ranged from 6 to 12 mph based upon climate data from the National Weather Service at the Fort Smith Airport (October 24, 2019, climate data).

Sub-slab vapor samples were collected after at least 2 liters (L) of air was purged and tested for methane (CH4), carbon dioxide (CO_2) and oxygen (O_2) content using a GEM 2000 multi-gas probe. Leak testing was conducted during purging and sampling. A shroud was placed over the sub-slab sample port, sampling train and tubing connections to and from the Summa canister and helium was injected until the air in the shroud measured >15% helium using a helium detector. The helium detector was then used to measure the amount of helium in the sampling line. All helium measurements from the leak test were non-detect.

After the sampling train was determined to be adequately sealed, soil vapor samples were collected using certified clean stainless-steel Summa canisters provided by an accredited analytical laboratory using flow control regulators pre-set by the laboratory to collect a 15 minute time integrated sample. The canister ID, regulator ID and initial canister pressure were logged at the beginning of sampling at each location. Soil vapor samples were collected until the pressure remaining in the canister read between -3 and -5 in. Hg. After sample collection was complete, the regulators were closed on the respective canisters and the canisters were shipped to the analytical laboratory for analysis of TCE and associated breakdown products using USEPA Method TO-15 and helium for leak testing. In addition, two duplicate sub-slab samples were collected. The results are summarized in Table 3. The laboratory report containing the sub-slab soil vapor sampling results is attached.

An outdoor, background air sample was also collected on October 24, 2019, to evaluate potential contributions from sources other than vapor intrusion. The outdoor air sample was collected from the former laydown yard approximately 125 feet southeast of ITMW-9 and approximately 150 feet west of the building, which was upwind of the building when sample collection started.

3 Evaluation of Results

3.1 Indoor Air

As summarized in Table 1, 1,2-DCA; PCE; cis-1,2-DCE; 1,1,1-trichloroethane (1,1,1-TCA) and TCE were detected in indoor air samples. Only TCE was detected above USEPA and ADEQ indoor air screening levels in all zones excluding Zone 2 at concentrations from 0.78 µg/m^3 (concentration below the screening level) and 3.3 µg/m^3 (compared to the USEPA industrial indoor air screening level of 0.88 µg/m^3 based on a HI of 0.1). These screening levels are conservative and are not intended to represent action levels.

1,2-DCA was detected in the outdoor/background air sample at a concentration of 0.074 µg/m^3.

3.2 Sub-Slab Soil Vapor

Table 2 shows that 1,1-dichloroethane (1,1-DCA); 1,1-dichloroethene (1,1-DCE); PCE; cis-1,2-DCE; trans-1,2-dichloroethene (trans-1,2-DCE); 1,1,1-TCA; TCE and VC were detected in at least one sub-slab soil vapor sample. Although several constituents were detected in sub-slab soil vapor samples, only 1,1-DCA, PCE, VC and TCE were detected at concentrations exceeding USEPA sub-slab vapor screening level concentrations (assuming USEPA's default attenuation factor of 0.03) as shown in Table 2. 1,1-DCA exceeded its respective USEPA sub-slab vapor screening level concentration in Zone 6-1; PCE in Zones 2, 3-2 and 6-1; TCE in Zones 3-1, 3-2, 5-1, 5-2, Zone 5 Office and 6-1; and VC in Zone 3-1.

1,2-DCA and PCE were detected in the outdoor/background air sample at 0.095 µg/m^3 and 0.46 µg/m^3, respectively.

Based on these results, the presence of TCE underneath the building floor may be contributing to indoor air TCE concentrations.

3.3 Risk Estimates for Vapor Intrusion

Per ADEQ's suggestion, in the initial screening process, detected indoor air constituent concentrations were compared to non-carcinogenic screening levels based on a target hazard quotient of 0.1 to account for additive effect of multiple contaminants resulting in a TCE indoor air screening level of 0.88 µg/m^3 for the industrial worker. Results of the indoor air sampling indicated that ten out of eleven samples exceeded the indoor air screening level. In accordance with USEPA guidance, risk estimates were calculated for the onsite worker in each zone of the onsite building to evaluate potential for increased risk from vapor intrusion using USEPA equation for inhalation exposure and default exposure parameters (Table 4 and Table 5, respectively) and toxicity values (Table 6).

Risks for the onsite worker for each building zone are presented in Tables 3A-K. The cumulative hazard index for exposure to constituents in indoor ranged between 9E-02 and 4E-01. The hazard indices for the inhalation pathway are below one indicating that the onsite worker would be unlikely to experience non-cancer health effects as a result of exposure to constituents in

indoor air. The cumulative theoretical lifetime cancer risk for exposure to constituents in indoor air ranged from 5E-07 to 2E-06; therefore, were all within or below the range of values considered acceptable by USEPA of 1E-06 to 1E-04.

4 Summary and Conclusion

As discussed in the previous, the indoor air data indicate a potential complete exposure pathway due to vapor intrusion into the building. Of the detected constituents, only TCE exceeded its respective indoor air screening level; however, cumulative risk estimates for the onsite worker were below or within ADEQ acceptable range of non-cancer hazard and cancer target values. These results do not indicate health risks from indoor exposures under current operating conditions.

It should be noted that 1,2-DCA was detected in ambient air samples collected during the indoor air sampling event and 1,2-DCA and PCE were detected in ambient air samples collected during the sub-slab sampling event. In addition, 1,2-DCA was detected in indoor air but not in any sub-slab vapor samples. The presence of 1,2-DCA, PCE and TCE in ambient samples and the absence of 1,2-DCA in sub-slab vapor suggests that vapor intrusion may not be the single source contributing to indoor air volatile organic compound (VOC) concentrations.

5 References

Ramboll Environ. 2016a. 2015 Two Year Technical Review Report, January.

Ramboll Environ. 2016b. Onsite Indoor Air and Sub-Slab SV Data Report. April.

Ramboll Environ. 2016c. Onsite Indoor Air and Sub-Slab SV Data Report. July.

Tables

TABLE 1
INDOOR AIR SAMPLING RESULTS (October 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Industrial Air	Zone 1	Zone 2	Zone 3-1	Zone 3-1	Zone 3-2	Zone 4-1	Zone 4-2
Ramboll Sample ID	**RSL**	**Z1-1-IA-201910**	**Z2-1-IA-201910**	**Z3-1-IA 201910**	**Z3-1-IA 201910-DUP**	**Z3-2-IA-201910**	**Z4-1-IA-201910**	**Z4-2-IA-201910**
Lab Sample ID	**(TR = 1E-5)**	**10497292003**	**10497292004**	**10497292001**	**10497292002**	**10497292005**	**10497292006**	**10497292007**
Sample Date	**(THQ = 0.1)**	**10/22/2019**	**10/22/2019**	**10/22/2019**	**10/22/2019**	**10/22/2019**	**10/22/2019**	**10/22/2019**
Volatile Organic Compounds								
1,1-Dichloroethane	77	ND (0.057)	ND (0.057)	ND (0.079)	ND (0.064)	ND (0.069)	ND (0.069)	ND (0.072)
1,2-Dichloroethane	4.7	0.081	0.086	0.088	0.099	0.097	0.089	0.087
1,1-Dichloroethene	88	ND (0.056)	ND (0.056)	ND (0.078)	ND (0.062)	ND (0.068)	ND (0.068)	ND (0.071)
cis-1,2-Dichloroethene	NA	0.069	0.057	0.11	0.11	0.12	0.15	0.16
trans-1,2-Dichloroethene	NA	ND (0.056)	ND (0.056)	ND (0.078)	ND (0.062)	ND (0.068)	ND (0.068)	ND (0.071)
Tetrachloroethene	18	0.36	0.31	0.52	0.56	0.62	0.52	0.53
1,1,1-Trichloroethane	2200	0.09	0.12	ND (0.11)	0.10	0.11	0.10	0.11
Trichloroethene	0.88	0.95	0.78	1.6	1.6	1.8	2.1	2.1
Vinyl Chloride	28	ND (0.0436	ND (0.036)	ND (0.050)	ND (0.040)	ND (0.044)	ND (0.044)	ND (0.046)

Notes:
All concentrations presented in micrograms per cubic meters ($\mu g/m^3$)
Value = Exceed screenining level
ND = Not detected
( ) = Detection Limit
RSL = Regional screening level
NA = Not available

TABLE 1
INDOOR AIR SAMPLING RESULTS (October 2019)
Whirlpool Facility - Fort Smith, Arkansas

Location	Industrial Air	Zone 5-1	Zone 5-2	Zone 5 Office	Zone 6-1	Zone 6-2	AA
Ramboll Sample ID	RSL	Z5-1-IA-201910	Z5-2-IA-201910	Z5-OF-IA-201910	Z6-1-IA-201910	Z6-2-IA-201910	AA-201910
Lab Sample ID	(TR = 1E-5)	10497292009	10497292009	10497292011	10497292012	10497292013	10497292008
Sample Date	(THQ = 0.1)	10/22/2019	10/22/2019	10/22/2019	10/22/2019	10/22/2019	10/22/2019
Volatile Organic Compounds							
1,1-Dichloroethane	77	ND (0.058)	ND (0.059)	ND (0.069)	ND (0.059)	ND (0.059)	ND (0.057)
1,2-Dichloroethane	4.7	0.075	0.081	0.21	0.11	0.079	0.074
1,1-Dichloroethene	88	ND (0.057)	ND (0.058)	ND (0.068)	ND (0.058)	ND (0.058)	ND (0.056)
cis-1,2-Dichloroethene	NA	0.16	0.084	0.14	0.14	0.075	ND (0.056)
trans-1,2-Dichloroethene	NA	ND (0.057)	ND (0.058)	ND (0.068)	ND (0.058)	ND (0.058)	ND (0.056)
Tetrachloroethene	18	0.91	0.42	0.78	1.2	0.34	ND (0.096)
1,1,1-Trichloroethane	2200	0.096	ND (0.080)	0.10	0.10	ND (0.080)	ND (0.077)
Trichloroethene	0.88	2.0	2.3	3.3	1.9	2.0	ND (0.076)
Vinyl Chloride	28	ND (0.037)	ND (0.037)	ND (0.044)	ND (0.037)	ND (0.037)	ND (0.036)

Notes:
All concentrations presented in micrograms per cubic meters ($\mu g/m^3$)
Value = Exceed screenining level
ND = Not detected
( ) = Detection Limit
RSL = Regional screening level
NA = Not available

TABLE 2
SUB-SLAB SOIL VAPOR SAMPLING RESULTS
(October 2019)
Whirlpool Facility, Fort Smith, Arkansas

Location	Industrial SSV	Zone 1	Zone 2	Zone 3-1	Zone 3-2	Zone 4-1	Zone 4-1	Zone 4-2
Ramboll Sample ID	RSL	Z1-1-SS-201910 (formerly Q6-SS-201904)	Z2-1-SS-201904	Q3R-SS-201910	Z3-2-SS-201910	Z4-1-SS-201910	Z4-1-SS-201910-DUP	Z4-2-SS-201910 (formerly Q5R-SS-201904)
Lab Sample ID	(TR = 1E-5)	10497292024	10497292022	10497292019	10497292023	10497292020	10497292026	10497292021
Sample Date	(THQ = 0.1)	10/24/2019	10/24/2019	10/24/2019	10/24/2019	10/24/2019	10/24/2019	10/24/2019
Volatile Organic Compounds								
1,1-Dichloroethane	2600	ND (1.6)	1.8	198	ND (1.6)	ND (2.0)	1.7	2.9
1,2-Dichloroethane	160	ND (0.80)	ND (0.83)	ND (23.1)	ND (0.80)	ND (0.99)	ND (0.74)	ND (0.99)
1,1-Dichloroethene	2900	ND (1.6)	ND (1.6)	ND (45.2)	ND (1.6)	ND (1.9)	ND (1.5)	ND (1.9)
cis-1,2-Dichloroethene	NA	ND (1.6)	ND (1.6)	136	ND (1.6)	ND (1.9)	ND (1.5)	ND (1.9)
trans-1,2-Dichloroethene	NA	ND (1.6)	ND (1.6)	572	ND (1.6)	2.2	4.1	2.9
Tetrachloroethene	600	307	3780	41.5	701	10.5	18.8	6.0
1,1,1-Trichloroethane	73000	5.4	55	ND (62.3)	11	19.5	33.1	10.4
Trichloroethene	29	13.4	12.7	35.9	229	9.4	15.5	10.1
Vinyl Chloride	930	4.5	7.3	165000	4.7	15.4	26.2	23.2

Notes:
All concentrations presented in micrograms per cubic meters ($\mu g/m^3$)
Value = Exceed screenining level
ND = Not detected
( ) = Detection Limit
RSL = Regional screening level
NS = Not sampled due to canister failure
NA = Not available

TABLE 2
SUB-SLAB SOIL VAPOR SAMPLING RESULTS
(October 2019)
Whirlpool Facility, Fort Smith, Arkansas

Location	Industrial SSV	Zone 5-1	Zone 5-2	Zone 5 Office	Zone 6-1	Zone 6-2	AA
Ramboll Sample ID	RSL	Z5-1-SS-201910	Z5-2-SS-201910	Z5-OF-SS-201910	Z6-1-SS-201910 (formerly Q1R-SS-201904)	Q4R-SS-201910	AA-2-201910
Lab Sample ID	(TR = 1E-5)	10497292018	10497292015	10497292025	10497292017	10497292016	10497292014
Sample Date	(THQ = 0.1)	10/24/2019	10/24/2019	10/24/2019	10/24/2019	10/24/2019	10/24/2019
Volatile Organic Compounds							
1,1-Dichloroethane	2600	12.0	ND (1.6)	3.1	3040	ND (1.5)	ND (0.059)
1,2-Dichloroethane	160	ND (0.80)	ND (0.80)	ND (0.80)	ND (0.74)	ND (0.74)	0.095
1,1-Dichloroethene	2900	ND (1.6)	ND (1.6)	ND (1.6)	16.8	ND (1.5)	ND (0.058)
cis-1,2-Dichloroethene	NA	ND (1.6)	ND (1.6)	1.7	85.6	ND (1.5)	ND (0.058)
trans-1,2-Dichloroethene	NA	ND (1.6)	ND (1.6)	ND (1.6)	16.1	ND (1.5)	ND (0.058)
Tetrachloroethene	600	90.1	8.4	220	1690	ND (1.2)	0.46
1,1,1-Trichloroethane	73000	105	92.7	2.9	7540	ND (2.0)	ND (0.080)
Trichloroethene	29	864	608	66.6	155	21.5	ND (0.079)
Vinyl Chloride	930	ND (1.0)	ND (0.50)	3.4	1.2	ND (0.47)	ND (0.037)

Notes:
All concentrations presented in micrograms per cubic meters ($\mu g/m^3$)
Value = Exceed screenining level
ND = Not detected
( ) = Detection Limit
RSL = Regional screening level
NS = Not sampled due to canister failure
NA = Not available

TABLE 3
INDOOR AIR HUMAN HEALTH RISKS (October 2019)
Whirlpool Facility, Fort Smith, Arkansas

ZONE 1 (Table 3a)

Constituent	Air Concentration (µg/m^3)	Non-Cancer CDI	Cancer CDI	HQ	LCR
1,1-Dichloroethane	ND (0.057)	6.5E-06	2.3E-03	1.3E-05	3.7E-09
1,2-Dichloroethane	0.081	1.8E-05	6.6E-03	2.6E-03	1.7E-07
1,1-Dichloroethene	ND (0.056)	6.4E-06	2.3E-03	3.2E-05	NA
cis-1,2-Dichloroethene	0.069	1.6E-05	5.6E-03	NA	NA
trans-1,2-Dichloroethene	ND (0.056)	6.4E-06	2.3E-03	1.1E-04	NA
Tetrachloroethene	0.36	8.2E-05	2.9E-02	2.1E-03	7.6E-09
1,1,1-Trichloroethane	0.094	2.1E-05	7.7E-03	4.3E-06	NA
Trichloroethene	0.95	2.2E-04	7.7E-02	1.1E-01	3.2E-07
Vinyl Chloride	ND (0.0436	5.0E-06	1.8E-03	5.0E-05	7.8E-09
			Summed Risk	1E-01	5E-07

ZONE 2 (Table 3b)

Constituent	Air Concentration (µg/m^3)	Non-Cancer CDI	Cancer CDI	HQ	LCR
1,1-Dichloroethane	ND (0.057)	6.5E-06	2.3E-03	1.3E-05	3.7E-09
1,2-Dichloroethane	0.086	2.0E-05	7.0E-03	2.8E-03	1.8E-07
1,1-Dichloroethene	ND (0.056)	6.4E-06	2.3E-03	3.2E-05	NA
cis-1,2-Dichloroethene	0.057	1.3E-05	4.6E-03	NA	NA
trans-1,2-Dichloroethene	ND (0.056)	6.4E-06	2.3E-03	1.1E-04	NA
Tetrachloroethene	0.31	7.1E-05	2.5E-02	1.8E-03	6.6E-09
1,1,1-Trichloroethane	0.12	2.7E-05	9.8E-03	5.5E-06	NA
Trichloroethene	0.78	1.8E-04	6.4E-02	8.9E-02	2.6E-07
Vinyl Chloride	ND (0.036)	4.9E-06	1.8E-03	4.9E-05	7.7E-09
			Summed Risk	9E-02	5E-07

ZONE 3-1 (Table 3c)

Constituent	Air Concentration (µg/m^3)	Non-Cancer CDI	Cancer CDI	HQ	LCR
1,1-Dichloroethane	ND (0.079)	9.0E-06	3.2E-03	1.8E-05	5E-09
1,2-Dichloroethane	0.09	2.0E-05	7.2E-03	2.9E-03	2E-07
1,1-Dichloroethene	ND (0.078)	8.9E-06	3.2E-03	4.5E-05	NA
cis-1,2-Dichloroethene	0.110	2.5E-05	9.0E-03	NA	NA
trans-1,2-Dichloroethene	ND (0.078)	8.9E-06	3.2E-03	1.5E-04	NA
Tetrachloroethene	0.52	1.2E-04	4.2E-02	3.0E-03	1E-08
1,1,1-Trichloroethane	ND (0.11)	1.3E-05	4.5E-03	2.5E-06	NA
Trichloroethene	1.60	3.7E-04	1.3E-01	1.8E-01	5E-07
Vinyl Chloride	ND (0.050)	5.7E-06	2.0E-03	5.7E-05	9E-09
			Summed Risk	2E-01	7E-07

ZONE 3-1 DUP

Constituent	Air Concentration (µg/m^3)	Non-Cancer CDI	Cancer CDI	HQ	LCR
1,1-Dichloroethane	ND (0.064)	7.3E-06	2.6E-03	1.5E-05	4.2E-09
1,2-Dichloroethane	0.10	2.3E-05	8.1E-03	3.2E-03	2.1E-07
1,1-Dichloroethene	ND (0.062)	7.1E-06	2.5E-03	3.5E-05	NA
cis-1,2-Dichloroethene	0.110	2.5E-05	9.0E-03	NA	NA
trans-1,2-Dichloroethene	ND (0.062)	7.1E-06	2.5E-03	1.2E-04	NA
Tetrachloroethene	0.56	1.3E-04	4.6E-02	3.2E-03	1.2E-08
1,1,1-Trichloroethane	0.10	2.3E-05	8.2E-03	4.6E-06	NA
Trichloroethene	1.60	3.7E-04	1.3E-01	1.8E-01	5.3E-07
Vinyl Chloride	ND (0.040)	4.6E-06	1.6E-03	4.6E-05	7.2E-09
			Summed Risk	2E-01	8E-07

ZONE 3-2 (Table 3d)

Constituent	Air Concentration (µg/m^3)	Non-Cancer CDI	Cancer CDI	HQ	LCR
1,1-Dichloroethane	ND (0.069)	7.9E-06	2.8E-03	1.6E-05	4.5E-09
1,2-Dichloroethane	0.10	2.2E-05	7.9E-03	3.2E-03	2.1E-07
1,1-Dichloroethene	ND (0.068)	7.8E-06	2.8E-03	3.9E-05	NA
cis-1,2-Dichloroethene	0.120	2.7E-05	9.8E-03	NA	NA
trans-1,2-Dichloroethene	ND (0.068)	7.8E-06	2.8E-03	1.3E-04	NA
Tetrachloroethene	0.62	1.4E-04	5.1E-02	3.5E-03	1.3E-08
1,1,1-Trichloroethane	0.11	2.5E-05	9.0E-03	5.0E-06	NA
Trichloroethene	1.8	4.1E-04	1.5E-01	2.1E-01	6.0E-07
Vinyl Chloride	ND (0.044)	5.0E-06	1.8E-03	5.0E-05	7.9E-09
			Summed Risk	2E-01	8E-07

ZONE 4-1 (Table 3e)

Constituent	Air Concentration (µg/m^3)	Non-Cancer CDI	Cancer CDI	HQ	LCR
1,1-Dichloroethane	ND (0.069)	7.9E-06	2.8E-03	1.6E-05	4.5E-09
1,2-Dichloroethane	0.09	2.0E-05	7.3E-03	2.9E-03	1.9E-07
1,1-Dichloroethene	ND (0.068)	7.8E-06	2.8E-03	3.9E-05	NA
cis-1,2-Dichloroethene	0.150	3.4E-05	1.2E-02	NA	NA
trans-1,2-Dichloroethene	ND (0.068)	7.8E-06	2.8E-03	1.3E-04	NA
Tetrachloroethene	0.52	1.2E-04	4.2E-02	3.0E-03	1.1E-08
1,1,1-Trichloroethane	0.10	2.3E-05	8.2E-03	4.6E-06	NA
Trichloroethene	2.1	4.8E-04	1.7E-01	2.4E-01	7.0E-07
Vinyl Chloride	ND (0.044)	5.0E-06	1.8E-03	5.0E-05	7.9E-09
			Summed Risk	2E-01	9E-07

RAMBOLL

TABLE 3
INDOOR AIR HUMAN HEALTH RISKS (October 2019)
Whirlpool Facility, Fort Smith, Arkansas

ZONE 4-2 (Table 3f)

Constituent	Air Concentration (µg/m^3)	Non-Cancer CDI	Cancer CDI	HQ	LCR
1,1-Dichloroethane	ND (0.072)	8.2E-06	2.9E-03	1.6E-05	4.7E-09
1,2-Dichloroethane	0.087	2.0E-05	7.1E-03	2.8E-03	1.8E-07
1,1-Dichloroethene	ND (0.071)	8.1E-06	2.9E-03	4.1E-05	NA
cis-1,2-Dichloroethene	0.16	3.7E-05	1.3E-02	NA	NA
trans-1,2-Dichloroethene	ND (0.071)	8.1E-06	2.9E-03	1.4E-04	NA
Tetrachloroethene	0.53	1.2E-04	4.3E-02	3.0E-03	1.1E-08
1,1,1-Trichloroethane	0.11	2.5E-05	9.0E-03	5.0E-06	NA
Trichloroethene	2.1	4.8E-04	1.7E-01	2.4E-01	7.0E-07
Vinyl Chloride	ND (0.046)	5.3E-06	1.9E-03	5.3E-05	8.3E-09
			Summed Risk	2E-01	9E-07

ZONE 5-1 (Table 3g)

Constituent	Air Concentration (µg/m^3)	Non-Cancer CDI	Cancer CDI	HQ	LCR
1,1-Dichloroethane	ND (0.058)	6.6E-06	2.4E-03	1.3E-05	3.8E-09
1,2-Dichloroethane	0.075	1.7E-05	6.1E-03	2.4E-03	1.6E-07
1,1-Dichloroethene	ND (0.057)	6.5E-06	2.3E-03	3.3E-05	NA
cis-1,2-Dichloroethene	0.16	3.7E-05	1.3E-02	NA	NA
trans-1,2-Dichloroethene	ND (0.057)	6.5E-06	2.3E-03	1.1E-04	NA
Tetrachloroethene	0.91	2.1E-04	7.4E-02	5.2E-03	1.9E-08
1,1,1-Trichloroethane	0.10	2.2E-05	7.8E-03	4.4E-06	NA
Trichloroethene	2.0	4.6E-04	1.6E-01	2.3E-01	6.7E-07
Vinyl Chloride	ND (0.037)	4.2E-06	1.5E-03	4.2E-05	6.6E-09
			Summed Risk	2E-01	9E-07

ZONE 5-2 (Table 3h)

Constituent	Air Concentration (µg/m^3)	Non-Cancer CDI	Cancer CDI	HQ	LCR
1,1-Dichloroethane	ND (0.059)	6.7E-06	2.4E-03	1.3E-05	3.8E-09
1,2-Dichloroethane	0.081	1.8E-05	6.6E-03	2.6E-03	1.7E-07
1,1-Dichloroethene	ND (0.058)	6.6E-06	2.4E-03	3.3E-05	NA
cis-1,2-Dichloroethene	0.08	1.9E-05	6.8E-03	NA	NA
trans-1,2-Dichloroethene	ND (0.058)	6.6E-06	2.4E-03	1.1E-04	NA
Tetrachloroethene	0.42	9.6E-05	3.4E-02	2.4E-03	8.9E-09
1,1,1-Trichloroethane	ND (0.080)	9.1E-06	3.3E-03	1.8E-06	NA
Trichloroethene	2.3	5.3E-04	1.9E-01	2.6E-01	7.7E-07
Vinyl Chloride	ND (0.037)	4.2E-06	1.5E-03	4.2E-05	6.6E-09
			Summed Risk	3E-01	1E-06

ZONE 5 Office (Table 3i)

Constituent	Air Concentration (µg/m^3)	Non-Cancer CDI	Cancer CDI	HQ	LCR
1,1-Dichloroethane	ND (0.069)	7.9E-06	2.8E-03	1.6E-05	4.5E-09
1,2-Dichloroethane	0.210	4.8E-05	1.7E-02	6.8E-03	4.5E-07
1,1-Dichloroethene	ND (0.068)	7.8E-06	2.8E-03	3.9E-05	NA
cis-1,2-Dichloroethene	0.14	3.2E-05	1.1E-02	NA	NA
trans-1,2-Dichloroethene	ND (0.068)	7.8E-06	2.8E-03	1.3E-04	NA
Tetrachloroethene	0.78	1.8E-04	6.4E-02	4.5E-03	1.7E-08
1,1,1-Trichloroethane	0.10	2.3E-05	8.2E-03	4.6E-06	NA
Trichloroethene	3.3	7.5E-04	2.7E-01	3.8E-01	1.1E-06
Vinyl Chloride	ND (0.044)	5.0E-06	1.8E-03	5.0E-05	7.9E-09
			Summed Risk	4E-01	2E-06

ZONE 6-1 (Table 3j)

Constituent	Air Concentration (µg/m^3)	Non-Cancer CDI	Cancer CDI	HQ	LCR
1,1-Dichloroethane	ND (0.059)	6.7E-06	2.4E-03	1.3E-05	3.8E-09
1,2-Dichloroethane	0.110	2.5E-05	9.0E-03	3.6E-03	2.3E-07
1,1-Dichloroethene	ND (0.058)	6.6E-06	2.4E-03	3.3E-05	NA
cis-1,2-Dichloroethene	0.14	3.2E-05	1.1E-02	NA	NA
trans-1,2-Dichloroethene	ND (0.058)	6.6E-06	2.4E-03	1.1E-04	NA
Tetrachloroethene	1.20	2.7E-04	9.8E-02	6.8E-03	2.5E-08
1,1,1-Trichloroethane	0.10	2.3E-05	8.2E-03	4.6E-06	NA
Trichloroethene	1.9	4.3E-04	1.5E-01	2.2E-01	6.4E-07
Vinyl Chloride	ND (0.037)	4.2E-06	1.5E-03	4.2E-05	6.6E-09
			Summed Risk	2E-01	9E-07

ZONE 6-2 (Table 3k)

Constituent	Air Concentration (µg/m^3)	Non-Cancer CDI	Cancer CDI	HQ	LCR
1,1-Dichloroethane	ND (0.059)	6.7E-06	2.4E-03	1.3E-05	3.8E-09
1,2-Dichloroethane	0.079	1.8E-05	6.4E-03	2.6E-03	1.7E-07
1,1-Dichloroethene	ND (0.058)	6.6E-06	2.4E-03	3.3E-05	NA
cis-1,2-Dichloroethene	0.075	1.7E-05	6.1E-03	NA	NA
trans-1,2-Dichloroethene	ND (0.058)	6.6E-06	2.4E-03	1.1E-04	NA
Tetrachloroethene	0.34	7.8E-05	2.8E-02	1.9E-03	7.2E-09
1,1,1-Trichloroethane	ND (0.080)	1.8E-05	6.5E-03	3.7E-06	NA
Trichloroethene	2.0	4.6E-04	1.6E-01	2.3E-01	6.7E-07
Vinyl Chloride	ND (0.037)	4.2E-06	1.5E-03	4.2E-05	6.6E-09
			Summed Risk	2E-01	9E-07

NOTES:
µg/m^3 = Microgram per cubic meter
CDI = Chronic daily intake
ND = Non-detect
HQ = Hazard quotient
NA = Not available
LCR = Lifetime cancer risk

RAMBOLL

TABLE 4
VALUES USED FOR DAILY INTAKE CALCULATIONS
Whirlpool Facility - Forth Smith, Arkansas

Scenario Timeframe: Current
Medium: Soil vapor
Exposure Medium: Air
Exposure Point: Groundwater
Receptor Population: Indoor C/I Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Intake Equation
Inhalation	CA	Chemical Concentration in Air	µg/m^3	(1)	(1)	Chronic Daily Intake (CDI) (mg/kg/day) = CA x ET x EF x ED x CF x 1/AT
	ET	Exposure Time	hours/day	8	USEPA 2002	
	EF	Exposure Frequency	days/year	250	USEPA 2002	
	ED	Exposure Duration	years	25	USEPA 2002	
	CF	Conversion Factor	day/hour	1		
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA 2002	
	AT-N	Averaging Time (Non-Cancer)	days	9,125	USEPA 2002	

NOTES:

(1) Indoor air concentrations of volatile organic compounds resulting from vapor intrusion was collected in October 2019

µg/m^3 = Micrograms per cubic meter

mg/kg = Milligrams per kilograms

TABLE 5
TOXICITY VALUES
Whirlpool Facility - Forth Smith, Arkansas

Chemicals	Inhalation Reference Concentration (RfC) (mg/m^3)	Inhalation Unit Risk (IUR) $(\mu g/m^3)^{-1}$
1,1-Dichloroethane	5.00E-01	1.60E-06
1,2-Dichloroethane	7.00E-03	2.60E-05
1,1-Dichloroethene	2.00E-01	
cis-1,2-Dichloroethene		
trans-1,2-Dichloroethene	6.00E-02	
Tetrachloroethene	4.00E-02	2.60E-07
1,1,1-Trichloroethane	5.00E+00	
Trichloroethene	2.00E-03	4.10E-06
Vinyl Chloride	1.00E-01	4.40E-06

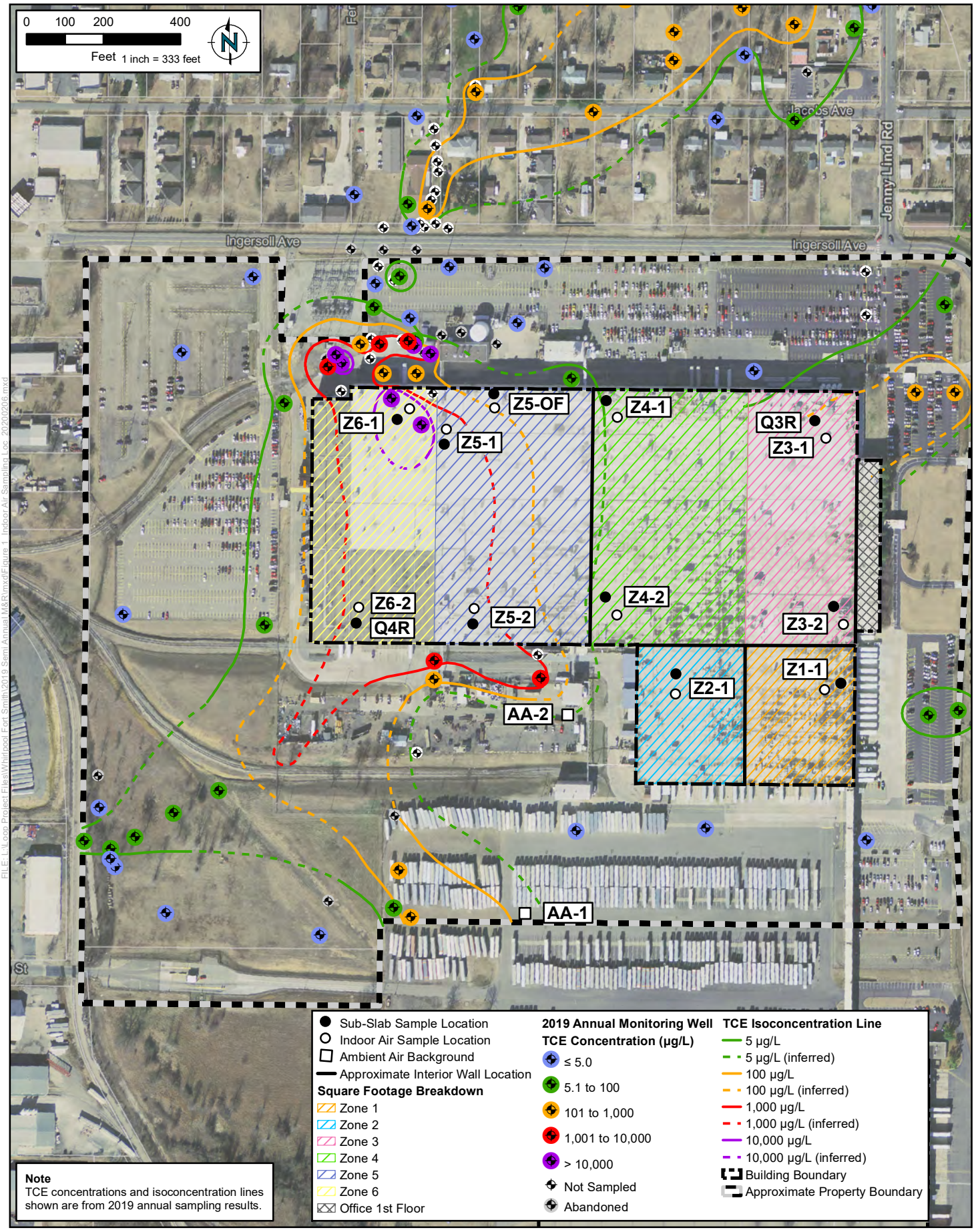
NOTES:

mg/m^3 = Milligrams per cubic meter

ug/m^3 = Micrograms per cubic meter

RAMBOLL

Figures



RAMBOLL

INDOOR AIR AND SUBSLAB SAMPLING LOCATIONS

Whirlpool Facility - Fort Smith, Arkansas

Figure 1

DRAFTED BY: FK | DATE: 02/06/2020 | PROJECT: 1690010633

Appendix A
Laboratory Analytical Data

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

November 05, 2019

Nick Zurweller
Ramboll
1807 Park 270 Drive
Suite 320
Saint Louis, MO 63146

RE: Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Dear Nick Zurweller:
Enclosed are the analytical results for sample(s) received by the laboratory on October 29, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Scott Unze
scott.unze@pacelabs.com
1(612)607-6383
Project Manager

Enclosures

cc: Haley Ahlers, Ramboll

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10497292001	**Z3-1-IA-201910**	Air	10/22/19 18:23	10/29/19 10:45
10497292002	**Z3-1-IA-201910-DUP**	Air	10/22/19 18:23	10/29/19 10:45
10497292003	**Z1-1-IA-201910**	Air	10/22/19 18:19	10/29/19 10:45
10497292004	**Z2-1-IA-201910**	Air	10/22/19 18:17	10/29/19 10:45
10497292005	**Z3-2-IA-201910**	Air	10/22/19 18:15	10/29/19 10:45
10497292006	**Z4-1-IA-201910**	Air	10/22/19 16:02	10/29/19 10:45
10497292007	**Z4-2-IA-201910**	Air	10/22/19 16:05	10/29/19 10:45
10497292008	**AA-1-201910**	Air	10/22/19 18:40	10/29/19 10:45
10497292009	**Z5-1-IA-201910**	Air	10/22/19 19:01	10/29/19 10:45
10497292010	**Z5-2-IA-201910**	Air	10/22/19 18:54	10/29/19 10:45
10497292011	**Z5-OF-IA-201910**	Air	10/22/19 17:25	10/29/19 10:45
10497292012	**Z6-1-IA-201910**	Air	10/22/19 18:59	10/29/19 10:45
10497292013	**Z6-2-IA-201910**	Air	10/22/19 18:55	10/29/19 10:45
10497292014	**AA-2-201910**	Air	10/24/19 16:23	10/29/19 10:45
10497292015	**Z5-2-SS-201910**	Air	10/24/19 10:22	10/29/19 10:45
10497292016	**Q4R-SS-201910**	Air	10/24/19 11:31	10/29/19 10:45
10497292017	**Z6-1-SS-201910**	Air	10/24/19 12:47	10/29/19 10:45
10497292018	**Z5-1-SS-201910**	Air	10/24/19 13:29	10/29/19 10:45
10497292019	**Q3R-SS-201910**	Air	10/24/19 15:05	10/29/19 10:45
10497292020	**Z4-1-SS-201910**	Air	10/24/19 15:40	10/29/19 10:45
10497292021	**Z4-2-SS-201910**	Air	10/24/19 16:18	10/29/19 10:45
10497292022	**Z2-1-SS-201910**	Air	10/24/19 16:46	10/29/19 10:45
10497292023	**Z3-2-SS-201910**	Air	10/24/19 17:19	10/29/19 10:45
10497292024	**Z1-1-SS-201910**	Air	10/24/19 17:54	10/29/19 10:45
10497292025	**Z5-OF-SS-201910**	Air	10/24/19 18:40	10/29/19 10:45
10497292026	**Z4-1-SS-201910-DUP**	Air	10/24/19 15:40	10/29/19 10:45
10497292027	**Unused can#2950**	Air	10/24/19 00:00	10/29/19 10:45
10497292028	**Unused can#2036**	Air	10/24/19 00:00	10/29/19 10:45
10497292029	**Unused can#3370**	Air	10/24/19 00:00	10/29/19 10:45

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10497292001	Z3-1-IA-201910	TO-15	NCK	9
10497292002	Z3-1-IA-201910-DUP	TO-15	NCK	9
10497292003	Z1-1-IA-201910	TO-15	NCK	9
10497292004	Z2-1-IA-201910	TO-15	NCK	9
10497292005	Z3-2-IA-201910	TO-15	NCK	9
10497292006	Z4-1-IA-201910	TO-15	NCK	9
10497292007	Z4-2-IA-201910	TO-15	NCK	9
10497292008	AA-1-201910	TO-15	NCK	9
10497292009	Z5-1-IA-201910	TO-15	NCK	9
10497292010	Z5-2-IA-201910	TO-15	NCK	9
10497292011	Z5-OF-IA-201910	TO-15	NCK	9
10497292012	Z6-1-IA-201910	TO-15	NCK	9
10497292013	Z6-2-IA-201910	TO-15	NCK	9
10497292014	AA-2-201910	TO-15	NCK	9
10497292015	Z5-2-SS-201910	Method 3C Gases	MG2	1
		TO-15	MG2	9
10497292016	Q4R-SS-201910	Method 3C Gases	MG2	1
		TO-15	MG2	9
10497292017	Z6-1-SS-201910	Method 3C Gases	MG2	1
		TO-15	MG2	9
10497292018	Z5-1-SS-201910	Method 3C Gases	MG2	1
		TO-15	MG2	9
10497292019	Q3R-SS-201910	Method 3C Gases	MG2	1
		TO-15	MG2	9
10497292020	Z4-1-SS-201910	Method 3C Gases	MG2	1
		TO-15	MG2	9
10497292021	Z4-2-SS-201910	Method 3C Gases	MG2	1
		TO-15	MG2	9
10497292022	Z2-1-SS-201910	Method 3C Gases	MG2	1
		TO-15	MG2	9
10497292023	Z3-2-SS-201910	Method 3C Gases	MG2	1
		TO-15	MG2	9
10497292024	Z1-1-SS-201910	Method 3C Gases	MG2	1
		TO-15	MG2	9
10497292025	Z5-OF-SS-201910	Method 3C Gases	MG2	1
		TO-15	MG2	9
10497292026	Z4-1-SS-201910-DUP	Method 3C Gases	MG2	1

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		TO-15	MG2	9

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Date: November 05, 2019

Z5-2-SS-201910 (Lab ID: 10497292015)

- Sample was filled with Nitrogen prior to 3C analysis.

Q4R-SS-201910 (Lab ID: 10497292016)

- Sample was filled with Nitrogen prior to 3C analysis.

Z6-1-SS-201910 (Lab ID: 10497292017)

- Sample was filled with Nitrogen prior to 3C analysis.

Z5-1-SS-201910 (Lab ID: 10497292018)

- Sample was filled with Nitrogen prior to 3C analysis.

Q3R-SS-201910 (Lab ID: 10497292019)

- Sample was filled with Nitrogen prior to 3C analysis.

Z4-1-SS-201910 (Lab ID: 10497292020)

- Sample was filled with Nitrogen prior to 3C analysis.

Z4-2-SS-201910 (Lab ID: 10497292021)

- Sample was filled with Nitrogen prior to 3C analysis.

Z2-1-SS-201910 (Lab ID: 10497292022)

- Sample was filled with Nitrogen prior to 3C analysis.

Z3-2-SS-201910 (Lab ID: 10497292023)

- Sample was filled with Nitrogen prior to 3C analysis.

Z1-1-SS-201910 (Lab ID: 10497292024)

- Sample was filled with Nitrogen prior to 3C analysis.

Z5-OF-SS-201910 (Lab ID: 10497292025)

- Sample was filled with Nitrogen prior to 3C analysis.

Z4-1-SS-201910-DUP (Lab ID: 10497292026)

- Sample was filled with Nitrogen prior to 3C analysis.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Method: **Method 3C Gases**
Description: Method 3C AIR - Fixed Gases
Client: Ramboll Environ
Date: November 05, 2019

General Information:
12 samples were analyzed for Method 3C Gases. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Method: **TO-15**
Description: TO15 MSV AIR
Client: Ramboll Environ
Date: November 05, 2019

General Information:
12 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Method: **TO-15**
Description: TO15 MSV AIR SIM SCAN
Client: Ramboll Environ
Date: November 05, 2019

General Information:
14 samples were analyzed for TO-15. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Sample: Z3-1-IA-201910 **Lab ID: 10497292001** Collected: 10/22/19 18:23 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.079	1.93		10/31/19 01:12	75-34-3	
1,2-Dichloroethane	**0.088**	ug/m3	0.079	1.93		10/31/19 01:12	107-06-2	
1,1-Dichloroethene	ND	ug/m3	0.078	1.93		10/31/19 01:12	75-35-4	
cis-1,2-Dichloroethene	**0.11**	ug/m3	0.078	1.93		10/31/19 01:12	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.078	1.93		10/31/19 01:12	156-60-5	
Tetrachloroethene	**0.52**	ug/m3	0.13	1.93		10/31/19 01:12	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	0.11	1.93		10/31/19 01:12	71-55-6	
Trichloroethene	**1.6**	ug/m3	0.11	1.93		10/31/19 01:12	79-01-6	
Vinyl chloride	ND	ug/m3	0.050	1.93		10/31/19 01:12	75-01-4	

Sample: Z3-1-IA-201910-DUP **Lab ID: 10497292002** Collected: 10/22/19 18:23 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.064	1.55		10/31/19 01:43	75-34-3	
1,2-Dichloroethane	**0.099**	ug/m3	0.064	1.55		10/31/19 01:43	107-06-2	
1,1-Dichloroethene	ND	ug/m3	0.062	1.55		10/31/19 01:43	75-35-4	
cis-1,2-Dichloroethene	**0.11**	ug/m3	0.062	1.55		10/31/19 01:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.062	1.55		10/31/19 01:43	156-60-5	
Tetrachloroethene	**0.56**	ug/m3	0.11	1.55		10/31/19 01:43	127-18-4	
1,1,1-Trichloroethane	**0.10**	ug/m3	0.086	1.55		10/31/19 01:43	71-55-6	
Trichloroethene	**1.6**	ug/m3	0.085	1.55		10/31/19 01:43	79-01-6	
Vinyl chloride	ND	ug/m3	0.040	1.55		10/31/19 01:43	75-01-4	

Sample: Z1-1-IA-201910 **Lab ID: 10497292003** Collected: 10/22/19 18:19 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.057	1.39		10/31/19 02:12	75-34-3	
1,2-Dichloroethane	**0.081**	ug/m3	0.057	1.39		10/31/19 02:12	107-06-2	
1,1-Dichloroethene	ND	ug/m3	0.056	1.39		10/31/19 02:12	75-35-4	
cis-1,2-Dichloroethene	**0.069**	ug/m3	0.056	1.39		10/31/19 02:12	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.056	1.39		10/31/19 02:12	156-60-5	
Tetrachloroethene	**0.36**	ug/m3	0.096	1.39		10/31/19 02:12	127-18-4	
1,1,1-Trichloroethane	**0.094**	ug/m3	0.077	1.39		10/31/19 02:12	71-55-6	
Trichloroethene	**0.95**	ug/m3	0.076	1.39		10/31/19 02:12	79-01-6	
Vinyl chloride	ND	ug/m3	0.036	1.39		10/31/19 02:12	75-01-4	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Sample: Z2-1-IA-201910 **Lab ID: 10497292004** Collected: 10/22/19 18:17 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.057	1.39		10/31/19 02:40	75-34-3	
1,2-Dichloroethane	**0.086**	ug/m3	0.057	1.39		10/31/19 02:40	107-06-2	
1,1-Dichloroethene	ND	ug/m3	0.056	1.39		10/31/19 02:40	75-35-4	
cis-1,2-Dichloroethene	**0.057**	ug/m3	0.056	1.39		10/31/19 02:40	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.056	1.39		10/31/19 02:40	156-60-5	
Tetrachloroethene	**0.31**	ug/m3	0.096	1.39		10/31/19 02:40	127-18-4	
1,1,1-Trichloroethane	**0.12**	ug/m3	0.077	1.39		10/31/19 02:40	71-55-6	
Trichloroethene	**0.78**	ug/m3	0.076	1.39		10/31/19 02:40	79-01-6	
Vinyl chloride	ND	ug/m3	0.036	1.39		10/31/19 02:40	75-01-4	

Sample: Z3-2-IA-201910 **Lab ID: 10497292005** Collected: 10/22/19 18:15 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.069	1.68		10/31/19 03:09	75-34-3	
1,2-Dichloroethane	**0.097**	ug/m3	0.069	1.68		10/31/19 03:09	107-06-2	
1,1-Dichloroethene	ND	ug/m3	0.068	1.68		10/31/19 03:09	75-35-4	
cis-1,2-Dichloroethene	**0.12**	ug/m3	0.068	1.68		10/31/19 03:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.068	1.68		10/31/19 03:09	156-60-5	
Tetrachloroethene	**0.62**	ug/m3	0.12	1.68		10/31/19 03:09	127-18-4	
1,1,1-Trichloroethane	**0.11**	ug/m3	0.093	1.68		10/31/19 03:09	71-55-6	
Trichloroethene	**1.8**	ug/m3	0.092	1.68		10/31/19 03:09	79-01-6	
Vinyl chloride	ND	ug/m3	0.044	1.68		10/31/19 03:09	75-01-4	

Sample: Z4-1-IA-201910 **Lab ID: 10497292006** Collected: 10/22/19 16:02 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.069	1.68		10/31/19 03:38	75-34-3	
1,2-Dichloroethane	**0.089**	ug/m3	0.069	1.68		10/31/19 03:38	107-06-2	
1,1-Dichloroethene	ND	ug/m3	0.068	1.68		10/31/19 03:38	75-35-4	
cis-1,2-Dichloroethene	**0.15**	ug/m3	0.068	1.68		10/31/19 03:38	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.068	1.68		10/31/19 03:38	156-60-5	
Tetrachloroethene	**0.52**	ug/m3	0.12	1.68		10/31/19 03:38	127-18-4	
1,1,1-Trichloroethane	**0.10**	ug/m3	0.093	1.68		10/31/19 03:38	71-55-6	
Trichloroethene	**2.1**	ug/m3	0.092	1.68		10/31/19 03:38	79-01-6	
Vinyl chloride	ND	ug/m3	0.044	1.68		10/31/19 03:38	75-01-4	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Sample: Z4-2-IA-201910 **Lab ID: 10497292007** Collected: 10/22/19 16:05 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.072	1.75		10/31/19 04:06	75-34-3	
1,2-Dichloroethane	**0.087**	ug/m3	0.072	1.75		10/31/19 04:06	107-06-2	
1,1-Dichloroethene	ND	ug/m3	0.071	1.75		10/31/19 04:06	75-35-4	
cis-1,2-Dichloroethene	**0.16**	ug/m3	0.071	1.75		10/31/19 04:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.071	1.75		10/31/19 04:06	156-60-5	
Tetrachloroethene	**0.53**	ug/m3	0.12	1.75		10/31/19 04:06	127-18-4	
1,1,1-Trichloroethane	**0.11**	ug/m3	0.097	1.75		10/31/19 04:06	71-55-6	
Trichloroethene	**2.1**	ug/m3	0.096	1.75		10/31/19 04:06	79-01-6	
Vinyl chloride	ND	ug/m3	0.046	1.75		10/31/19 04:06	75-01-4	

Sample: AA-1-201910 **Lab ID: 10497292008** Collected: 10/22/19 18:40 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.057	1.39		10/31/19 04:35	75-34-3	
1,2-Dichloroethane	**0.074**	ug/m3	0.057	1.39		10/31/19 04:35	107-06-2	
1,1-Dichloroethene	ND	ug/m3	0.056	1.39		10/31/19 04:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	0.056	1.39		10/31/19 04:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.056	1.39		10/31/19 04:35	156-60-5	
Tetrachloroethene	ND	ug/m3	0.096	1.39		10/31/19 04:35	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	0.077	1.39		10/31/19 04:35	71-55-6	
Trichloroethene	ND	ug/m3	0.076	1.39		10/31/19 04:35	79-01-6	
Vinyl chloride	ND	ug/m3	0.036	1.39		10/31/19 04:35	75-01-4	

Sample: Z5-1-IA-201910 **Lab ID: 10497292009** Collected: 10/22/19 19:01 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.058	1.41		10/31/19 05:04	75-34-3	
1,2-Dichloroethane	**0.075**	ug/m3	0.058	1.41		10/31/19 05:04	107-06-2	
1,1-Dichloroethene	ND	ug/m3	0.057	1.41		10/31/19 05:04	75-35-4	
cis-1,2-Dichloroethene	**0.16**	ug/m3	0.057	1.41		10/31/19 05:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.057	1.41		10/31/19 05:04	156-60-5	
Tetrachloroethene	**0.91**	ug/m3	0.097	1.41		10/31/19 05:04	127-18-4	
1,1,1-Trichloroethane	**0.096**	ug/m3	0.078	1.41		10/31/19 05:04	71-55-6	
Trichloroethene	**2.0**	ug/m3	0.077	1.41		10/31/19 05:04	79-01-6	
Vinyl chloride	ND	ug/m3	0.037	1.41		10/31/19 05:04	75-01-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Sample: Z5-2-IA-201910 **Lab ID: 10497292010** Collected: 10/22/19 18:54 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.059	1.44		10/31/19 05:33	75-34-3	
1,2-Dichloroethane	**0.081**	ug/m3	0.059	1.44		10/31/19 05:33	107-06-2	
1,1-Dichloroethene	ND	ug/m3	0.058	1.44		10/31/19 05:33	75-35-4	
cis-1,2-Dichloroethene	**0.084**	ug/m3	0.058	1.44		10/31/19 05:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.058	1.44		10/31/19 05:33	156-60-5	
Tetrachloroethene	**0.42**	ug/m3	0.099	1.44		10/31/19 05:33	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	0.080	1.44		10/31/19 05:33	71-55-6	
Trichloroethene	**2.3**	ug/m3	0.079	1.44		10/31/19 05:33	79-01-6	
Vinyl chloride	ND	ug/m3	0.037	1.44		10/31/19 05:33	75-01-4	

Sample: Z5-OF-IA-201910 **Lab ID: 10497292011** Collected: 10/22/19 17:25 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.069	1.68		10/31/19 16:24	75-34-3	
1,2-Dichloroethane	**0.21**	ug/m3	0.069	1.68		10/31/19 16:24	107-06-2	
1,1-Dichloroethene	ND	ug/m3	0.068	1.68		10/31/19 16:24	75-35-4	
cis-1,2-Dichloroethene	**0.14**	ug/m3	0.068	1.68		10/31/19 16:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.068	1.68		10/31/19 16:24	156-60-5	
Tetrachloroethene	**0.78**	ug/m3	0.12	1.68		10/31/19 16:24	127-18-4	
1,1,1-Trichloroethane	**0.099**	ug/m3	0.093	1.68		10/31/19 16:24	71-55-6	
Trichloroethene	**3.3**	ug/m3	0.092	1.68		10/31/19 16:24	79-01-6	
Vinyl chloride	ND	ug/m3	0.044	1.68		10/31/19 16:24	75-01-4	

Sample: Z6-1-IA-201910 **Lab ID: 10497292012** Collected: 10/22/19 18:59 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.059	1.44		10/31/19 16:52	75-34-3	
1,2-Dichloroethane	**0.11**	ug/m3	0.059	1.44		10/31/19 16:52	107-06-2	
1,1-Dichloroethene	ND	ug/m3	0.058	1.44		10/31/19 16:52	75-35-4	
cis-1,2-Dichloroethene	**0.14**	ug/m3	0.058	1.44		10/31/19 16:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.058	1.44		10/31/19 16:52	156-60-5	
Tetrachloroethene	**1.2**	ug/m3	0.099	1.44		10/31/19 16:52	127-18-4	
1,1,1-Trichloroethane	**0.095**	ug/m3	0.080	1.44		10/31/19 16:52	71-55-6	
Trichloroethene	**1.9**	ug/m3	0.079	1.44		10/31/19 16:52	79-01-6	
Vinyl chloride	ND	ug/m3	0.037	1.44		10/31/19 16:52	75-01-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Sample: Z6-2-IA-201910 **Lab ID: 10497292013** Collected: 10/22/19 18:55 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.059	1.44		10/31/19 17:21	75-34-3	
1,2-Dichloroethane	**0.079**	ug/m3	0.059	1.44		10/31/19 17:21	107-06-2	
1,1-Dichloroethene	ND	ug/m3	0.058	1.44		10/31/19 17:21	75-35-4	
cis-1,2-Dichloroethene	**0.075**	ug/m3	0.058	1.44		10/31/19 17:21	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.058	1.44		10/31/19 17:21	156-60-5	
Tetrachloroethene	**0.34**	ug/m3	0.099	1.44		10/31/19 17:21	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	0.080	1.44		10/31/19 17:21	71-55-6	
Trichloroethene	**2.0**	ug/m3	0.079	1.44		10/31/19 17:21	79-01-6	
Vinyl chloride	ND	ug/m3	0.037	1.44		10/31/19 17:21	75-01-4	

Sample: AA-2-201910 **Lab ID: 10497292014** Collected: 10/24/19 16:23 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR SIM SCAN	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	0.059	1.44		10/31/19 17:50	75-34-3	
1,2-Dichloroethane	**0.095**	ug/m3	0.059	1.44		10/31/19 17:50	107-06-2	
1,1-Dichloroethene	ND	ug/m3	0.058	1.44		10/31/19 17:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	0.058	1.44		10/31/19 17:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	0.058	1.44		10/31/19 17:50	156-60-5	
Tetrachloroethene	**0.46**	ug/m3	0.099	1.44		10/31/19 17:50	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	0.080	1.44		10/31/19 17:50	71-55-6	
Trichloroethene	ND	ug/m3	0.079	1.44		10/31/19 17:50	79-01-6	
Vinyl chloride	ND	ug/m3	0.037	1.44		10/31/19 17:50	75-01-4	

Sample: Z5-2-SS-201910 **Lab ID: 10497292015** Collected: 10/24/19 10:22 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Method 3C AIR - Fixed Gases	Analytical Method: Method 3C Gases							
Helium	ND	%	7.0	1.94		10/31/19 08:57	7440-59-7	
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	1.6	1.94		11/01/19 19:57	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.80	1.94		11/01/19 19:57	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.6	1.94		11/01/19 19:57	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.6	1.94		11/01/19 19:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.6	1.94		11/01/19 19:57	156-60-5	
Tetrachloroethene	**8.4**	ug/m3	1.3	1.94		11/01/19 19:57	127-18-4	
1,1,1-Trichloroethane	**92.7**	ug/m3	2.2	1.94		11/01/19 19:57	71-55-6	
Trichloroethene	**608**	ug/m3	33.3	60.92		11/02/19 12:58	79-01-6	
Vinyl chloride	ND	ug/m3	0.50	1.94		11/01/19 19:57	75-01-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Sample: Q4R-SS-201910 **Lab ID: 10497292016** Collected: 10/24/19 11:31 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Method 3C AIR - Fixed Gases	Analytical Method: Method 3C Gases							
Helium	ND	%	6.5	1.8		10/31/19 09:19	7440-59-7	
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	1.5	1.8		11/01/19 21:58	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		11/01/19 21:58	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		11/01/19 21:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		11/01/19 21:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		11/01/19 21:58	156-60-5	
Tetrachloroethene	ND	ug/m3	1.2	1.8		11/01/19 21:58	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	2.0	1.8		11/01/19 21:58	71-55-6	
Trichloroethene	**21.5**	ug/m3	0.98	1.8		11/01/19 21:58	79-01-6	
Vinyl chloride	ND	ug/m3	0.47	1.8		11/01/19 21:58	75-01-4	

Sample: Z6-1-SS-201910 **Lab ID: 10497292017** Collected: 10/24/19 12:47 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Method 3C AIR - Fixed Gases	Analytical Method: Method 3C Gases							
Helium	ND	%	6.5	1.8		10/31/19 09:30	7440-59-7	
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	**3040**	ug/m3	237	288		11/02/19 15:40	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		11/01/19 18:56	107-06-2	
1,1-Dichloroethene	**16.8**	ug/m3	1.5	1.8		11/01/19 18:56	75-35-4	
cis-1,2-Dichloroethene	**85.6**	ug/m3	1.5	1.8		11/01/19 18:56	156-59-2	
trans-1,2-Dichloroethene	**16.1**	ug/m3	1.5	1.8		11/01/19 18:56	156-60-5	
Tetrachloroethene	**1690**	ug/m3	198	288		11/02/19 15:40	127-18-4	
1,1,1-Trichloroethane	**7540**	ug/m3	320	288		11/02/19 15:40	71-55-6	
Trichloroethene	**155**	ug/m3	0.98	1.8		11/01/19 18:56	79-01-6	
Vinyl chloride	**1.2**	ug/m3	0.47	1.8		11/01/19 18:56	75-01-4	

Sample: Z5-1-SS-201910 **Lab ID: 10497292018** Collected: 10/24/19 13:29 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Method 3C AIR - Fixed Gases	Analytical Method: Method 3C Gases							
Helium	ND	%	7.0	1.94		10/31/19 09:41	7440-59-7	
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	**12.0**	ug/m3	1.6	1.94		11/01/19 21:28	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.80	1.94		11/01/19 21:28	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.6	1.94		11/01/19 21:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.6	1.94		11/01/19 21:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.6	1.94		11/01/19 21:28	156-60-5	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Sample: Z5-1-SS-201910 **Lab ID: 10497292018** Collected: 10/24/19 13:29 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Tetrachloroethene	**90.1**	ug/m3	1.3	1.94		11/01/19 21:28	127-18-4	
1,1,1-Trichloroethane	**105**	ug/m3	2.2	1.94		11/01/19 21:28	71-55-6	
Trichloroethene	**864**	ug/m3	31.8	58.2		11/02/19 13:26	79-01-6	
Vinyl chloride	ND	ug/m3	1.0	1.94		11/01/19 21:28	75-01-4	

Sample: Q3R-SS-201910 **Lab ID: 10497292019** Collected: 10/24/19 15:05 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Method 3C AIR - Fixed Gases	Analytical Method: Method 3C Gases							
Helium	ND	%	6.7	1.87		10/31/19 09:54	7440-59-7	
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	**198**	ug/m3	46.2	56.1		11/01/19 23:26	75-34-3	
1,2-Dichloroethane	ND	ug/m3	23.1	56.1		11/01/19 23:26	107-06-2	
1,1-Dichloroethene	ND	ug/m3	45.2	56.1		11/01/19 23:26	75-35-4	
cis-1,2-Dichloroethene	**136**	ug/m3	45.2	56.1		11/01/19 23:26	156-59-2	
trans-1,2-Dichloroethene	**572**	ug/m3	45.2	56.1		11/01/19 23:26	156-60-5	
Tetrachloroethene	**41.5**	ug/m3	38.7	56.1		11/01/19 23:26	127-18-4	
1,1,1-Trichloroethane	ND	ug/m3	62.3	56.1		11/01/19 23:26	71-55-6	
Trichloroethene	**35.9**	ug/m3	30.6	56.1		11/01/19 23:26	79-01-6	
Vinyl chloride	**165000**	ug/m3	1870	7180		11/02/19 16:07	75-01-4	

Sample: Z4-1-SS-201910 **Lab ID: 10497292020** Collected: 10/24/19 15:40 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Method 3C AIR - Fixed Gases	Analytical Method: Method 3C Gases							
Helium	ND	%	8.6	2.4		10/31/19 10:05	7440-59-7	
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	2.0	2.4		11/01/19 20:27	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.99	2.4		11/01/19 20:27	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.9	2.4		11/01/19 20:27	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.9	2.4		11/01/19 20:27	156-59-2	
trans-1,2-Dichloroethene	**2.2**	ug/m3	1.9	2.4		11/01/19 20:27	156-60-5	
Tetrachloroethene	**10.5**	ug/m3	1.7	2.4		11/01/19 20:27	127-18-4	
1,1,1-Trichloroethane	**19.5**	ug/m3	2.7	2.4		11/01/19 20:27	71-55-6	
Trichloroethene	**9.4**	ug/m3	1.3	2.4		11/01/19 20:27	79-01-6	
Vinyl chloride	**15.4**	ug/m3	0.62	2.4		11/01/19 20:27	75-01-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Sample: Z4-2-SS-201910 **Lab ID: 10497292021** Collected: 10/24/19 16:18 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Method 3C AIR - Fixed Gases	Analytical Method: Method 3C Gases							
Helium	ND	%	8.6	2.4		10/31/19 10:16	7440-59-7	
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	**2.9**	ug/m3	2.0	2.4		11/01/19 17:56	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.99	2.4		11/01/19 17:56	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.9	2.4		11/01/19 17:56	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.9	2.4		11/01/19 17:56	156-59-2	
trans-1,2-Dichloroethene	**2.9**	ug/m3	1.9	2.4		11/01/19 17:56	156-60-5	
Tetrachloroethene	**6.0**	ug/m3	1.7	2.4		11/01/19 17:56	127-18-4	
1,1,1-Trichloroethane	**10.4**	ug/m3	2.7	2.4		11/01/19 17:56	71-55-6	
Trichloroethene	**10.1**	ug/m3	1.3	2.4		11/01/19 17:56	79-01-6	
Vinyl chloride	**23.2**	ug/m3	0.62	2.4		11/01/19 17:56	75-01-4	

Sample: Z2-1-SS-201910 **Lab ID: 10497292022** Collected: 10/24/19 16:46 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Method 3C AIR - Fixed Gases	Analytical Method: Method 3C Gases							
Helium	ND	%	7.3	2.02		10/31/19 10:52	7440-59-7	
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	**1.8**	ug/m3	1.7	2.02		11/01/19 18:26	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.83	2.02		11/01/19 18:26	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.6	2.02		11/01/19 18:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.6	2.02		11/01/19 18:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.6	2.02		11/01/19 18:26	156-60-5	
Tetrachloroethene	**3780**	ug/m3	111	161.6		11/02/19 15:12	127-18-4	
1,1,1-Trichloroethane	**54.8**	ug/m3	2.2	2.02		11/01/19 18:26	71-55-6	
Trichloroethene	**12.7**	ug/m3	1.1	2.02		11/01/19 18:26	79-01-6	
Vinyl chloride	**7.3**	ug/m3	1.1	2.02		11/01/19 18:26	75-01-4	

Sample: Z3-2-SS-201910 **Lab ID: 10497292023** Collected: 10/24/19 17:19 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Method 3C AIR - Fixed Gases	Analytical Method: Method 3C Gases							
Helium	ND	%	7.0	1.94		10/31/19 11:14	7440-59-7	
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	1.6	1.94		11/01/19 22:28	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.80	1.94		11/01/19 22:28	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.6	1.94		11/01/19 22:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.6	1.94		11/01/19 22:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.6	1.94		11/01/19 22:28	156-60-5	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Sample: Z3-2-SS-201910 **Lab ID: 10497292023** Collected: 10/24/19 17:19 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
Tetrachloroethene	**701**	ug/m3	13.4	19.4		11/02/19 12:31	127-18-4	
1,1,1-Trichloroethane	**10.9**	ug/m3	2.2	1.94		11/01/19 22:28	71-55-6	
Trichloroethene	**229**	ug/m3	1.1	1.94		11/01/19 22:28	79-01-6	
Vinyl chloride	**4.7**	ug/m3	0.50	1.94		11/01/19 22:28	75-01-4	

Sample: Z1-1-SS-201910 **Lab ID: 10497292024** Collected: 10/24/19 17:54 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Method 3C AIR - Fixed Gases	Analytical Method: Method 3C Gases							
Helium	ND	%	7.0	1.94		10/31/19 11:25	7440-59-7	
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	ND	ug/m3	1.6	1.94		11/01/19 20:57	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.80	1.94		11/01/19 20:57	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.6	1.94		11/01/19 20:57	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.6	1.94		11/01/19 20:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.6	1.94		11/01/19 20:57	156-60-5	
Tetrachloroethene	**307**	ug/m3	1.3	1.94		11/01/19 20:57	127-18-4	
1,1,1-Trichloroethane	**5.4**	ug/m3	2.2	1.94		11/01/19 20:57	71-55-6	
Trichloroethene	**13.4**	ug/m3	1.1	1.94		11/01/19 20:57	79-01-6	
Vinyl chloride	**4.5**	ug/m3	0.50	1.94		11/01/19 20:57	75-01-4	

Sample: Z5-OF-SS-201910 **Lab ID: 10497292025** Collected: 10/24/19 18:40 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Method 3C AIR - Fixed Gases	Analytical Method: Method 3C Gases							
Helium	ND	%	7.0	1.94		10/31/19 11:36	7440-59-7	
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	**3.1**	ug/m3	1.6	1.94		11/01/19 22:59	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.80	1.94		11/01/19 22:59	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.6	1.94		11/01/19 22:59	75-35-4	
cis-1,2-Dichloroethene	**1.7**	ug/m3	1.6	1.94		11/01/19 22:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/m3	1.6	1.94		11/01/19 22:59	156-60-5	
Tetrachloroethene	**220**	ug/m3	1.3	1.94		11/01/19 22:59	127-18-4	
1,1,1-Trichloroethane	**2.9**	ug/m3	2.2	1.94		11/01/19 22:59	71-55-6	
Trichloroethene	**66.6**	ug/m3	1.1	1.94		11/01/19 22:59	79-01-6	
Vinyl chloride	**3.4**	ug/m3	0.50	1.94		11/01/19 22:59	75-01-4	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Sample: Z4-1-SS-201910-DUP **Lab ID: 10497292026** Collected: 10/24/19 15:40 Received: 10/29/19 10:45 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Method 3C AIR - Fixed Gases	Analytical Method: Method 3C Gases							
Helium	ND	%	6.5	1.8		10/31/19 11:47	7440-59-7	
TO15 MSV AIR	Analytical Method: TO-15							
1,1-Dichloroethane	**1.7**	ug/m3	1.5	1.8		11/01/19 19:27	75-34-3	
1,2-Dichloroethane	ND	ug/m3	0.74	1.8		11/01/19 19:27	107-06-2	
1,1-Dichloroethene	ND	ug/m3	1.5	1.8		11/01/19 19:27	75-35-4	
cis-1,2-Dichloroethene	ND	ug/m3	1.5	1.8		11/01/19 19:27	156-59-2	
trans-1,2-Dichloroethene	**4.1**	ug/m3	1.5	1.8		11/01/19 19:27	156-60-5	
Tetrachloroethene	**18.8**	ug/m3	1.2	1.8		11/01/19 19:27	127-18-4	
1,1,1-Trichloroethane	**33.1**	ug/m3	2.0	1.8		11/01/19 19:27	71-55-6	
Trichloroethene	**15.5**	ug/m3	0.98	1.8		11/01/19 19:27	79-01-6	
Vinyl chloride	**26.2**	ug/m3	0.47	1.8		11/01/19 19:27	75-01-4	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

QC Batch: 642022 Analysis Method: Method 3C Gases
QC Batch Method: Method 3C Gases Analysis Description: METHOD 3C AIR - FIXED GASES
Associated Lab Samples: 10497292015, 10497292016, 10497292017, 10497292018, 10497292019, 10497292020, 10497292021, 10497292022, 10497292023, 10497292024, 10497292025, 10497292026

METHOD BLANK: 3457668 Matrix: Air
Associated Lab Samples: 10497292015, 10497292016, 10497292017, 10497292018, 10497292019, 10497292020, 10497292021, 10497292022, 10497292023, 10497292024, 10497292025, 10497292026

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Helium	%	ND	3.6	10/31/19 08:34	

LABORATORY CONTROL SAMPLE & LCSD: 3457669 3457670

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Helium	%	18	20.9	20.7	116	115	70-130	1	30	

SAMPLE DUPLICATE: 3459024

Parameter	Units	10497292015 Result	Dup Result	RPD	Max RPD	Qualifiers
Helium	%	ND	ND		30	

SAMPLE DUPLICATE: 3459063

Parameter	Units	10497292022 Result	Dup Result	RPD	Max RPD	Qualifiers
Helium	%	ND	ND		30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

QC Batch: 642456 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR Low Level
Associated Lab Samples: 10497292015, 10497292016, 10497292017, 10497292018, 10497292019, 10497292020, 10497292021, 10497292022, 10497292023, 10497292024, 10497292025, 10497292026

METHOD BLANK: 3459471 Matrix: Air
Associated Lab Samples: 10497292015, 10497292016, 10497292017, 10497292018, 10497292019, 10497292020, 10497292021, 10497292022, 10497292023, 10497292024, 10497292025, 10497292026

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	0.56	11/01/19 09:11	
1,1-Dichloroethane	ug/m3	ND	0.41	11/01/19 09:11	
1,1-Dichloroethene	ug/m3	ND	0.40	11/01/19 09:11	
1,2-Dichloroethane	ug/m3	ND	0.21	11/01/19 09:11	
cis-1,2-Dichloroethene	ug/m3	ND	0.40	11/01/19 09:11	
Tetrachloroethene	ug/m3	ND	0.34	11/01/19 09:11	
trans-1,2-Dichloroethene	ug/m3	ND	0.40	11/01/19 09:11	
Trichloroethene	ug/m3	ND	0.27	11/01/19 09:11	
Vinyl chloride	ug/m3	ND	0.13	11/01/19 09:11	MN

LABORATORY CONTROL SAMPLE: 3459472

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	55.5	53.9	97	70-130	
1,1-Dichloroethane	ug/m3	41.1	41.9	102	70-130	
1,1-Dichloroethene	ug/m3	40.3	39.6	98	70-130	
1,2-Dichloroethane	ug/m3	41.1	38.0	92	70-130	
cis-1,2-Dichloroethene	ug/m3	40.3	39.3	98	70-130	
Tetrachloroethene	ug/m3	68.9	71.0	103	70-130	
trans-1,2-Dichloroethene	ug/m3	40.3	39.2	97	70-130	
Trichloroethene	ug/m3	54.6	54.2	99	70-130	
Vinyl chloride	ug/m3	26	22.3	86	70-130	

SAMPLE DUPLICATE: 3460364

Parameter	Units	10497279001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	11000 U	ND		25	
1,1-Dichloroethane	ug/m3	8170 U	ND		25	
1,1-Dichloroethene	ug/m3	8010 U	ND		25	
1,2-Dichloroethane	ug/m3	4080 U	ND		25	
cis-1,2-Dichloroethene	ug/m3	8010 U	ND		25	
Tetrachloroethene	ug/m3	340000	334000	2	25	
trans-1,2-Dichloroethene	ug/m3	8010 U	ND		25	
Trichloroethene	ug/m3	5420 U	ND		25	
Vinyl chloride	ug/m3	2580 U	ND		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

SAMPLE DUPLICATE: 3460365

Parameter	Units	10497279003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	9890 U	ND		25	
1,1-Dichloroethane	ug/m3	7330 U	ND		25	
1,1-Dichloroethene	ug/m3	7180 U	ND		25	
1,2-Dichloroethane	ug/m3	3660 U	ND		25	
cis-1,2-Dichloroethene	ug/m3	7180 U	ND		25	
Tetrachloroethene	ug/m3	229000	218000	5	25	
trans-1,2-Dichloroethene	ug/m3	7180 U	ND		25	
Trichloroethene	ug/m3	4860 U	ND		25	
Vinyl chloride	ug/m3	2320 U	ND		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

QC Batch: 641914 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR SIM SCAN
Associated Lab Samples: 10497292001, 10497292002, 10497292003, 10497292004, 10497292005, 10497292006, 10497292007, 10497292008, 10497292009, 10497292010

METHOD BLANK: 3457073 Matrix: Air
Associated Lab Samples: 10497292001, 10497292002, 10497292003, 10497292004, 10497292005, 10497292006, 10497292007, 10497292008, 10497292009, 10497292010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	0.028	10/30/19 10:42	
1,1-Dichloroethane	ug/m3	ND	0.021	10/30/19 10:42	
1,1-Dichloroethene	ug/m3	ND	0.020	10/30/19 10:42	
1,2-Dichloroethane	ug/m3	ND	0.021	10/30/19 10:42	
cis-1,2-Dichloroethene	ug/m3	ND	0.020	10/30/19 10:42	
Tetrachloroethene	ug/m3	ND	0.034	10/30/19 10:42	
trans-1,2-Dichloroethene	ug/m3	ND	0.020	10/30/19 10:42	
Trichloroethene	ug/m3	ND	0.027	10/30/19 10:42	
Vinyl chloride	ug/m3	ND	0.013	10/30/19 10:42	

LABORATORY CONTROL SAMPLE: 3457074

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	0.55	0.61	110	66-131	
1,1-Dichloroethane	ug/m3	0.41	0.46	113	70-130	
1,1-Dichloroethene	ug/m3	0.4	0.40	99	63-139	
1,2-Dichloroethane	ug/m3	0.41	0.43	105	69-130	
cis-1,2-Dichloroethene	ug/m3	0.4	0.44	108	70-130	
Tetrachloroethene	ug/m3	0.69	0.73	106	70-132	
trans-1,2-Dichloroethene	ug/m3	0.4	0.46	114	62-149	
Trichloroethene	ug/m3	0.55	0.59	109	70-134	
Vinyl chloride	ug/m3	0.26	0.28	108	70-130	

SAMPLE DUPLICATE: 3457713

Parameter	Units	10497263001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	0.061J	.061J		25	
1,1-Dichloroethane	ug/m3	0.059J	.059J		25	
1,1-Dichloroethene	ug/m3	0.068 U	ND		25	
1,2-Dichloroethane	ug/m3	0.15	0.15	3	25	
cis-1,2-Dichloroethene	ug/m3	0.053J	.055J		25	
Tetrachloroethene	ug/m3	3.8	4.0	6	25	
trans-1,2-Dichloroethene	ug/m3	0.068 U	ND		25	
Trichloroethene	ug/m3	0.50	0.50	1	25	
Vinyl chloride	ug/m3	0.044 U	ND		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

SAMPLE DUPLICATE: 3457714

Parameter	Units	10497263009 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	0.089 U	.059J		25	
1,1-Dichloroethane	ug/m3	0.039J	ND		25	
1,1-Dichloroethene	ug/m3	0.065 U	ND		25	
1,2-Dichloroethane	ug/m3	0.16	0.16	2	25	
cis-1,2-Dichloroethene	ug/m3	0.065 U	ND		25	
Tetrachloroethene	ug/m3	1.9	1.9	0	25	
trans-1,2-Dichloroethene	ug/m3	0.065 U	ND		25	
Trichloroethene	ug/m3	0.21	0.22	1	25	
Vinyl chloride	ug/m3	0.042 U	ND		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

QC Batch: 642267 Analysis Method: TO-15
QC Batch Method: TO-15 Analysis Description: TO15 MSV AIR SIM SCAN
Associated Lab Samples: 10497292011, 10497292012, 10497292013, 10497292014

METHOD BLANK: 3458489 Matrix: Air
Associated Lab Samples: 10497292011, 10497292012, 10497292013, 10497292014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	0.056	10/31/19 11:30	
1,1-Dichloroethane	ug/m3	ND	0.041	10/31/19 11:30	
1,1-Dichloroethene	ug/m3	ND	0.040	10/31/19 11:30	
1,2-Dichloroethane	ug/m3	ND	0.041	10/31/19 11:30	
cis-1,2-Dichloroethene	ug/m3	ND	0.040	10/31/19 11:30	
Tetrachloroethene	ug/m3	ND	0.069	10/31/19 11:30	
trans-1,2-Dichloroethene	ug/m3	ND	0.040	10/31/19 11:30	
Trichloroethene	ug/m3	ND	0.055	10/31/19 11:30	
Vinyl chloride	ug/m3	ND	0.026	10/31/19 11:30	

LABORATORY CONTROL SAMPLE: 3458490

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	0.55	0.64	115	66-131	
1,1-Dichloroethane	ug/m3	0.41	0.48	117	70-130	
1,1-Dichloroethene	ug/m3	0.4	0.45	112	63-139	
1,2-Dichloroethane	ug/m3	0.41	0.46	111	69-130	
cis-1,2-Dichloroethene	ug/m3	0.4	0.44	109	70-130	
Tetrachloroethene	ug/m3	0.69	0.76	110	70-132	
trans-1,2-Dichloroethene	ug/m3	0.4	0.50	123	62-149	
Trichloroethene	ug/m3	0.55	0.60	110	70-134	
Vinyl chloride	ug/m3	0.26	0.27	105	70-130	

SAMPLE DUPLICATE: 3461160

Parameter	Units	10497212003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethane	ug/m3	ND	ND		25	
1,1-Dichloroethene	ug/m3	ND	ND		25	
1,2-Dichloroethane	ug/m3	1.5	1.5	1	25	
cis-1,2-Dichloroethene	ug/m3	0.13	0.13	3	25	
Tetrachloroethene	ug/m3	13.6	13.7	1	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	0.24	0.25	2	25	
Vinyl chloride	ug/m3	ND	ND		25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

SAMPLE QUALIFIERS

Sample: 10497292015
[1] Sample was filled with Nitrogen prior to 3C analysis.
Sample: 10497292016
[1] Sample was filled with Nitrogen prior to 3C analysis.
Sample: 10497292017
[1] Sample was filled with Nitrogen prior to 3C analysis.
Sample: 10497292018
[1] Sample was filled with Nitrogen prior to 3C analysis.
Sample: 10497292019
[1] Sample was filled with Nitrogen prior to 3C analysis.
Sample: 10497292020
[1] Sample was filled with Nitrogen prior to 3C analysis.
Sample: 10497292021
[1] Sample was filled with Nitrogen prior to 3C analysis.
Sample: 10497292022
[1] Sample was filled with Nitrogen prior to 3C analysis.
Sample: 10497292023
[1] Sample was filled with Nitrogen prior to 3C analysis.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

SAMPLE QUALIFIERS

Sample: 10497292024
[1] Sample was filled with Nitrogen prior to 3C analysis.
Sample: 10497292025
[1] Sample was filled with Nitrogen prior to 3C analysis.
Sample: 10497292026
[1] Sample was filled with Nitrogen prior to 3C analysis.

ANALYTE QUALIFIERS

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1690015112 Fort Smith
Pace Project No.: 10497292

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10497292015	**Z5-2-SS-201910**	Method 3C Gases	642022		
10497292016	**Q4R-SS-201910**	Method 3C Gases	642022		
10497292017	**Z6-1-SS-201910**	Method 3C Gases	642022		
10497292018	**Z5-1-SS-201910**	Method 3C Gases	642022		
10497292019	**Q3R-SS-201910**	Method 3C Gases	642022		
10497292020	**Z4-1-SS-201910**	Method 3C Gases	642022		
10497292021	**Z4-2-SS-201910**	Method 3C Gases	642022		
10497292022	**Z2-1-SS-201910**	Method 3C Gases	642022		
10497292023	**Z3-2-SS-201910**	Method 3C Gases	642022		
10497292024	**Z1-1-SS-201910**	Method 3C Gases	642022		
10497292025	**Z5-OF-SS-201910**	Method 3C Gases	642022		
10497292026	**Z4-1-SS-201910-DUP**	Method 3C Gases	642022		
10497292015	**Z5-2-SS-201910**	TO-15	642456		
10497292016	**Q4R-SS-201910**	TO-15	642456		
10497292017	**Z6-1-SS-201910**	TO-15	642456		
10497292018	**Z5-1-SS-201910**	TO-15	642456		
10497292019	**Q3R-SS-201910**	TO-15	642456		
10497292020	**Z4-1-SS-201910**	TO-15	642456		
10497292021	**Z4-2-SS-201910**	TO-15	642456		
10497292022	**Z2-1-SS-201910**	TO-15	642456		
10497292023	**Z3-2-SS-201910**	TO-15	642456		
10497292024	**Z1-1-SS-201910**	TO-15	642456		
10497292025	**Z5-OF-SS-201910**	TO-15	642456		
10497292026	**Z4-1-SS-201910-DUP**	TO-15	642456		
10497292001	**Z3-1-IA-201910**	TO-15	641914		
10497292002	**Z3-1-IA-201910-DUP**	TO-15	641914		
10497292003	**Z1-1-IA-201910**	TO-15	641914		
10497292004	**Z2-1-IA-201910**	TO-15	641914		
10497292005	**Z3-2-IA-201910**	TO-15	641914		
10497292006	**Z4-1-IA-201910**	TO-15	641914		
10497292007	**Z4-2-IA-201910**	TO-15	641914		
10497292008	**AA-1-201910**	TO-15	641914		
10497292009	**Z5-1-IA-201910**	TO-15	641914		
10497292010	**Z5-2-IA-201910**	TO-15	641914		
10497292011	**Z5-OF-IA-201910**	TO-15	642267		
10497292012	**Z6-1-IA-201910**	TO-15	642267		
10497292013	**Z6-2-IA-201910**	TO-15	642267		
10497292014	**AA-2-201910**	TO-15	642267		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical®
www.pacelabs.com

AIR: CHAIN-OF-CUSTODY /

The Chain-of-Custody is a LEGAL DOCUMENT. All relevan

WO# : 10497292

10497292

45970

Page: 1 of 3

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Ramboll	Report To: Tamara House-Knight	Attention:
Address:	Copy To:	Company Name:
		Address:
Email To: thouse-knight@ramboll.com	Purchase Order No.:	Pace Quote Reference:
Phone: Fax:	Project Name:	Pace Project Manager/Sales Rep.
Requested Due Date/TAT: Standard	Project Number:	Pace Profile #:

Program: ☐ UST ☐ Superfund ☐ Emissions ☐ Clean Air Act ☐ Voluntary Clean Up ☐ Dry Clean ☐ RCRA ☐ Other____

Location of Sampling by State: AR

Reporting Units: ug/m³___ mg/m³___ PPBV___ PPMV___ Other___

Report Level: II.___ III.___ IV.___ Other____

'Section D Required Client Information

AIR SAMPLE ID

Sample IDs MUST BE UNIQUE

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

ITEM #	AIR SAMPLE ID	MEDIA CODE	PID Reading (Client only)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	Canister Pressure (Initial Field - in Hg)	Canister Pressure (Final Field - in Hg)	Summa Can Number	Flow Control Number	Method: PM10	3C - Fixed Gas (%)	TO-3 BTEX	TO-3M (Methane)	TO-14	TO-15 Full List VOCs - SIM	TO-15 Short List BTEX	TO-15 Short List Chlorinated	TO-15 Short List (other)	Pace Lab ID
1	Z3-1-1A-201910	6LC	N/A	10/22/19	0940	10/22/19	1823	-30	-21	3363	1682					X					001
2	Z3-1-1A-201910-DUP				0940		1823	-29	-16	2719	1867										002
3	Z1-1-1A-201910				0955		1819	-27	0	2825	1876										003
4	Z2-1-1A-201910				0952		1817	-28	-1	1249	0291										004
5	Z3-2-1A-201910				0935		1815	-26	-2	1064	1062										005
6	Z4-1-1A-201910				0942		1602	-30	-6	2721	1455										006
7	Z4-2-1A-201910				0945		1605	-30	-6	2832	1275										007
8	AA-1-201910				1010		1840	-30	-2	1498	0317										008
9	Z5-1-1A-201910				1052		1901	-27	0	2048	1918										009
10	Z5-2-1A-201910				1100		1854	-28	0	1265	2009										010
11	Z5-DF-1A-201910				1054		1725	-30	-5	2814	0132										011
12	Z6-1-1A-201910				1050		1859	-28	-2	0523	1500										012

Comments :

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Haley Anlers / Ramboll	10/25/19	1045	[signature] Pace	10/29/19	10:45

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
—	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Haley Anlers

SIGNATURE of SAMPLER: Haley Anlers — DATE Signed (MM / DD / YY): 10/25/19

ORIGINAL

Pace Analytical®
www.pacelabs.com

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

45971

Section A Required Client Information:

Company:	
Address:	
Email To:	SEE PAGE 1
Phone:	Fax:
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	
Copy To:	
Purchase Order No.:	
Project Name:	
Project Number:	

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager/Sales Rep.	
Pace Profile #:	

Program: ☐ UST ☐ Superfund ☐ Emissions ☐ Clean Air Act ☐ Voluntary Clean Up ☐ Dry Clean ☐ RCRA ☐ Other

Location of Sampling by State: _____

Reporting Units: ug/m³ ___ mg/m³ ___ PPBV ___ PPMV ___ Other ___

Report Level: II. ___ III. ___ IV. ___ Other ___

'Section D Required Client Information

AIR SAMPLE ID
Sample IDs MUST BE UNIQUE

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

ITEM #	AIR SAMPLE ID	MEDIA CODE	PID Reading (Client only)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	Canister Pressure (Initial Field - in Hg)	Canister Pressure (Final Field - in Hg)	Summa Can Number	Flow Control Number	Method: PM10	3C - Fixed Gas (%)	TO-3 BTEX	TO-3M (Methane)	TO-14	TO-15 Full List VOCs	TO-15 Short List BTEX	TO-15 Short List Chlorinated	TO-15 Short List (other)	TO-15-SIM	Pace Lab ID
1	Z6-2-1A-201910	6LC	N/A	10/22/19	1101	10/22/19	1855	-30	-2	3451	1083	X										013
2	AA-2-201910	↓		10/24/19	0848	10/24/19	~~1623~~ 1022 HA	-25	-1	2382	2020	↓										014
3	Z5-2-SS-201910	1LC			1060		~~1135~~ 1027 HA	-29	-5	2467	0375					X						015
4	Q4R-SS-201910				1114		~~1247~~ 1131 HA	-30	-3.5	3014	0049											016
5	Z6-1-SS-201910				1226		~~1329~~ 1244 HA	-30	-5	3211	1372											017
6	Z5-1-SS-201910				1309		~~1505~~ 1329 HA	-30	-4.5	2782	1770											018
7	Q3R-SS-201910				1450		~~1510~~ 1505 HA	-29.5	-5	2500	0211											019
8	Z4-1-SS-201910				1520		~~1618~~ 1540 HA	-29	-12	3021	1778											020
9	Z4-2-SS-201910				1553		1618	-28	-8	1167	1776											021
10	Z2-1-SS-201910				1629		1646	-30	-5	2649	1915											022
11	Z3-2-SS-201910				1701		1719	-30	-4	3165	1914											023
12	Z1-1-SS-201910	↓	↓	↓	1731	↓	1754	-29.5	-5	2213	1810					↓						024

Comments :

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Haley Ahlers / Ramboll	10/25/19	1045	[signature] Pace	10/29/19	10:45

SAMPLE CONDITIONS

	Temp in °C	Received on Ice Y/N	Custody Sealed Cooler Y/N	Samples Intact Y/N
		Y/N	Y/N	Y/N
		Y/N	Y/N	Y/N
		Y/N	Y/N	Y/N
		Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Haley Ahlers

SIGNATURE of SAMPLER: Haley Ahlers DATE Signed (MM / DD / YY): 10/25/19

ORIGINAL

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414 Air Technical Phone: 612.607.6386

Pace Analytical®
www.pacelabs.com

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

45972

Section A Required Client Information:

Section B Required Project Information:

Section C Invoice Information:

Section A	Section B	Section C
Company:	Report To:	Attention:
Address:	Copy To: SEE PAGE 1	Company Name:
		Address:
Email To:	Purchase Order No.:	Pace Quote Reference:
Phone: Fax:	Project Name:	Pace Project Manager/Sales Rep.
Requested Due Date/TAT:	Project Number:	Pace Profile #:

Program: ☐ UST ☐ Superfund ☐ Emissions ☐ Clean Air Act ☐ Voluntary Clean Up ☐ Dry Clean ☐ RCRA ☐ Other____

Location of Sampling by State _____

Reporting Units: ug/m³___ mg/m³___ PPBV___ PPMV___ Other___

Report Level II.___ III.___ IV.___ Other____

'Section D Required Client Information

AIR SAMPLE ID

Sample IDs MUST BE UNIQUE

Valid Media Codes

MEDIA	CODE
Tedlar Bag	TB
1 Liter Summa Can	1LC
6 Liter Summa Can	6LC
Low Volume Puff	LVP
High Volume Puff	HVP
Other	PM10

ITEM #	'Section D Required Client Information / AIR SAMPLE ID	MEDIA CODE	PID Reading (Client only)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE - END/GRAB DATE	COMPOSITE - END/GRAB TIME	Canister Pressure (Initial Field - in Hg)	Canister Pressure (Final Field - in Hg)	Summa Can Number	Flow Control Number	Method: PM10	3C - Fixed Gas (%)	TO-3 BTEX	TO-3M (Methane)	TO-14	TO-15 Full List VOCs	TO-15 Short List BTEX	TO-15 Short List Chlorinated	TO-15 Short List (other)	Pace Lab ID
1	Z5-OF-SS-201910	1LC	N/A	10/24/19	1827	10/24/19	1840	-29	-5	1324	0274										025
2	Z4-1-SS-201910-DUP	↓	↓	↓	1520	↓	1540	-30	-3.5	2580	1773										026
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Comments :

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Haley Ahlen/Rambo II	10/25/19	1045	Tracy Face	10/29/19	10:45

SAMPLE CONDITIONS

Temp in °C	Received on Ice Y/N	Custody Sealed Cooler Y/N	Samples Intact Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Haley Ahlers

SIGNATURE of SAMPLER: Haley Ahlen DATE Signed (MM / DD / YY) 10/25/19

ORIGINAL

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414 Air Technical Phone: 612.607.6386

Pace Analytical	Document Name: Air Sample Condition Upon Receipt	Document Revised: 14Oct2019 Page 1 of 1
	Document No.: F-MN-A-106-rev.19	Issuing Authority:

Air Sample Condition Upon Receipt

Client Name: RAMBOLL

Project #:

WO#: 10497292

PM: SCU **Due Date: 11/05/19**

CLIENT: ENVIRON

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial **See Exception** ☒

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Tin Can ☐ Other: **Temp Blank rec:** ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): X **Corrected Temp (°C):** X **Thermometer Used:** ☐ G87A9170600254 ☐ G87A9155100842

Temp should be above freezing to 6°C **Correction Factor:** X **Date & Initials of Person Examining Contents:** 10/29/19 CM

Type of ice Received ☐ Blue ☐ Wet ☒ None

			Comments:
Chain of Custody Present?	☒ Yes	☐ No	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No ☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	7.
Sufficient Volume?	☒ Yes	☐ No	8.
Correct Containers Used? -Pace Containers Used?	☒ Yes ☒ Yes	☐ No ☐ No	9.
Containers Intact?	☒ Yes	☐ No	10.
Media: (Air Can) Airbag Filter TDT Passive			11. Individually Certified Cans Y (N) (list which samples)
Is sufficient information available to reconcile samples to the COC?	☒ Yes	☐ No	12.
Do cans need to be pressurized? **(DO NOT PRESSURIZE 3C or ASTM 1946!!!)**	☒ Yes	☐ No	13.

Gauge # ☒ 10AIR26 ☐ 10AIR34 ☐ 10AIR35 ☐ 4097

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
Z3-1-1A	3363	1682	-19.5	-5	Z5-1	2048	1918	-1.5	-5
Z3-1-1A-DUP	2719	1867	-17	-5	Z5-2	1265	2009	-2	-5
Z1-1	2825	1876	-1	-5	Z5-DP	2814	0132	-6	-5
Z2-1	1249	0291	-1	-5	Z6-1	0523	1500	-2	-5
Z3-2	1064	1062	-6	-5	Z6-2	3451	1083	-2	-5
Z4-1	2721	1455	-6	-5	AA-2	2382	2020	-2	-5
Z4-2	2832	1275	-7	-5	Z5-2-SS	2467	0375	-4	-5
AA-1	1498	0317	-1	-5	Q4R-SS	3014	0049	-2	-5

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Nick Z Date/Time: 10/30/19

Comments/Resolution: Add helium to all TO-15 low level samples.

Report short Chlorinated list as per previous projects.

Project Manager Review: Susan C. Mungo **Date:** 10/30/19

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical®	Document Name: Air Sample Condition Upon Receipt	Document Revised: 14Oct2019 Page 1 of 1
	Document No.: F-MN-A-106-rev.19	Issuing Authority: Pace Minnesota Quality Office

Air Sample Condition Upon Receipt **Client Name:** **Project #:**

Courier: ☐Fed Ex ☐UPS ☐USPS ☐Client ☐Pace ☐SpeeDee ☐Commercial **See Exception** ☐

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☐Yes ☐No **Seals Intact?** ☐Yes ☐No

Packing Material: ☐Bubble Wrap ☐Bubble Bags ☐Foam ☐None ☐Tin Can ☐Other:_____ **Temp Blank rec:** ☐Yes ☐No

Temp. (TO17 and TO13 samples only) (°C): _____ **Corrected Temp (°C):** _____ **Thermometer Used:** ☐G87A9170600254 ☐G87A9155100842

Temp should be above freezing to 6°C **Correction Factor:** _____ **Date & Initials of Person Examining Contents:** _____

Type of ice Received ☐Blue ☐Wet ☐None

		Comments:
Chain of Custody Present?	☐Yes ☐No	1.
Chain of Custody Filled Out?	☐Yes ☐No	2.
Chain of Custody Relinquished?	☐Yes ☐No	3.
Sampler Name and/or Signature on COC?	☐Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time?	☐Yes ☐No	5.
Short Hold Time Analysis (<72 hr)?	☐Yes ☐No	6.
Rush Turn Around Time Requested?	☐Yes ☐No	7.
Sufficient Volume?	☐Yes ☐No	8.
Correct Containers Used? -Pace Containers Used?	☐Yes ☐No ☐Yes ☐No	9.
Containers Intact?	☐Yes ☐No	10.
Media: Air Can Airbag Filter TDT Passive		11. Individually Certified Cans Y N (list which samples)
Is sufficient information available to reconcile samples to the COC?	☐Yes ☐No	12.
Do cans need to be pressurized? **(DO NOT PRESSURIZE 3C or ASTM 1946!!!)**	☐Yes ☐No	13.

Gauge # ☒10AIR26 ☐10AIR34 ☐10AIR35 ☐4097

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
Z6-1-SS	3211	1372	-4	to	Z1-1-SS	2213	1810	-4	to
Z5-1-SS	2782	1770	-3	to	Z5-OF-SS	1324	0274	-4	to
Q3R-SS	2500	0211	-3	to	Z4-1-SS	2580	1773	-2	to
Z4-1-SS	3021	1778	-9	to	UNUSED	2450	0206	-27	—
Z4-2-SS	1167	1776	-9	to	UNUSED	2036	1095	-29	—
~~Z4~~	—	—	—	—	UNUSED	3370	1672	-29	—
Z2-1-SS	2649	1915	-5	to					
Z3-2-SS	3165	1914	-4	to					

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: _____ **Date:** _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical®	Document Name: SCUR Exception Form – Coolers Above 6°C	Document Revised: 08Apr2019 Page 1 of 1
	Document No.: F-MN-C-298-Rev.02	Issuing Authority: Pace Minnesota Quality Office

During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius

SCUR Exceptions: **Workorder #:**

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☐Yes ☐No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

Multiple Cooler Project? ☐Yes ☐No
If you answered yes, fill out information to the left.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp

Tracking Number/Temperature	
1083 0291 6212	
" 6175	
" 6223	
" 6186	
" 6201	
" 6197	

Other Issues		
Issue Type: Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	

INVOICE

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
Phone: (612)607-1700

www.pacelabs.com

Invoice Number: 19100276147
Date: 11/05/2019
Total Amount Due: $6,176.00

Sold To:

Haley Ahlers
Ramboll
1807 Park 270 Drive
Suite 320
Saint Louis, MO 63146
(314) 590-2956

Please Remit To:

Pace Analytical Services, LLC
P.O. Box 684056
Chicago, IL 60695-4056

Client Number/Client ID	*Purchase Order No*	*Pace Project Mgr*	*Terms***	*Page*
10-116291 / ENVIRON		Scott Unze	Net 30 Days	1

Client Project: 1690015112 Fort Smith
Client Name: Ramboll Environ
Pace Project No: 10497292
Sample Received: 10/29/2019
Report Sent To: Nick Zurweller, Ramboll
Comments:

ANALYTICAL CHARGES

Quantity	Unit	Description	Method	Matrix	Price	Total
3	Ea	EZ Canister Assembly	Miscellaneous Charges	Air	$60.00	$180.00
12	Ea	Meth3C,Fixed Gases, in Air	Method 3C Gases	Air	$43.00	$516.00
12	Ea	TO15 MSV AIR	TO-15	Air	$165.00	$1,980.00
14	Ea	TO15 MSV AIR SIM SCAN	TO-15	Air	$250.00	$3,500.00
					Analytical Subtotal	$6,176.00

Total Number of Charges 41 **Total Invoice Amount** **$6,176.00**

If you have any questions, please contact Scott Unze at Pace.
Phone: 1(612)607-6383 Email: scott.unze@pacelabs.com

****1.5% MONTHLY FINANCE CHARGE ASSESSED AFTER 30 DAYS OR TERMS OF CONTRACT.**
PLEASE REFERENCE THE INVOICE NUMBER ON ALL REMITTANCE ADVICE.

AN EQUAL OPPORTUNITY EMPLOYER

Please complete and return copy of invoice with your payment.

INVOICE TOTAL $6,176.00

Amount Paid: $ _____

Check No: _____

Customer No: 10-116291 Invoice No: 19100276147