VIA ELECTRONIC MAIL

August 21, 2019

Richelle Hanson, Project Manager
Voluntary Cleanup Program
Maryland Department of the Environment
Land and Materials Administration
1800 Washington Blvd., Suite 625
Baltimore, Maryland 21230

Subject: **Quarterly Status Report No. 11 - Offsite Area**
Former Kop-Flex Facility Site, Hanover, Maryland

Dear Richelle:

On behalf of EMERSUB 16 LLC, a subsidiary of Emerson Electric Co., WSP USA Inc. (WSP) is submitting this quarterly status report describing the investigation and remediation activities conducted in the second quarter 2019 in the offsite portion of the Former Kop-Flex Facility Site in Hanover, Maryland. The report also describes the activities planned for the third quarter of 2019. In addition to this electronic version, a hard copy of the status report is being submitted to the Maryland Department of Environment (MDE) under separate cover.

If you have any questions, please do not hesitate to contact us at 703-709-6500.

Kind regards,

Robert E. Johnson
Senior Technical Manager
Water & Environment

REJ:rlo
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Encl.

cc: Mr. Erich Weissbart, U.S. Environmental Protection Agency (EPA), Region III
Mr. Stephen Clarke, Emerson Electric Co.
Sheila Harvey, Esquire, Pillsbury Winthrop Shaw Pittman

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QUARTERLY STATUS REPORT NO. 11 – OFFSITE AREA

FORMER KOP-FLEX FACILITY SITE

April 2019 THROUGH June 2019

Site Name:	Former Kop-Flex Facility
Site Address:	7565 Harmans Road Hanover, Maryland 21076
Consultant:	WSP USA Inc.
Address:	13530 Dulles Technology Drive, Suite 300 Herndon, Virginia 20171
Phone No.:	(703) 709-6500
Project Coordinator:	Eric Johnson, WSP USA
Alternate:	Lisa Bryda**,** WSP USA

1.0 Offsite Activities Conducted During April 2019 through June 2019

1.1 Residential Well Sampling

- Pursuant to MDE's request, water samples were collected from the residential well at 1227 Old Camp Meade Road (Figure 1) on the following dates during the reporting period:
  - April 2, 2019
  - May 21, 2019
  - June 12, 2019

  Historical analytical results, including those for the second quarter 2019 samples, are summarized in Table 1. Copies of the certified laboratory analytical reports for the April 2019 through June 2019 sampling events are included in Enclosure A.

- As with samples collected in the first quarter 2019, site-related constituents of concern (COCs) were detected in both the untreated and treated water samples, with none of these chemicals present at levels above the applicable groundwater quality criteria (Table 1). In the pre-treatment samples, concentrations of 1,1-DCE ranged from 5.1 micrograms per liter (µg/l) to 6.4 µg/l, while 1,4-dioxane was present at levels between 1.6 µg/l and 2.6 µg/l. Over the past year of sampling (June 2018 through June 2019), concentrations of 1,1-DCE in the untreated water have typically ranged from 4 µg/l to 7 µg/l (Figure 2), and 1,4-dioxane has varied between 1 µg/l and 3 µg/l (Figure 3). The post-treatment water samples for the April 2019 through June 2019 events had concentrations of 1,1-DCE ranging from below the reporting limit of 0.5 µg/l to 0.76 µg/l, and 1,4-dioxane concentrations similar to the levels detected in the untreated water (1.7 µg/l to 2.6 µg/l). Trace levels (<0.5 µg/l) of 1,1,1-trichloroethane (TCA) were also detected in both the untreated and treated samples.

  EMERSUB 16 and WSP have communicated the analytical results for these water samples in writing to the homeowner and MDE.

1.2 Residential Water Service Connection for 1227 Old Camp Meade Road

- EMERSUB 16 and WSP continued with the planning work for connection of the residence at 1227 Old Camp Meade Road to the county water main on Reece Road. The activities completed during the reporting period included the following:
  - Communications with the Anne Arundel County (AAC) Department of Public Works (DPW) and owner of the adjoining property at 1229 Old Camp Meade Road regarding the location of the utility easement for the water line that will connect the home at 1227 Old Camp Meade Road to the water main.
  - Completion of a boundary survey of the 1229 Old Camp Meade Road property and utility easement on the property.

- Mark-out of the proposed water line location from the Reece Road right-of-way (ROW) to the 1227 Old Camp Meade Road house.

— In late June, representatives of EMERSUB 16 began preparation of an easement agreement that would be executed by the two residential property owners and recorded in the AAC Land Records Office. This document will include a description and survey plat of the easement area for the water line.

1.3 Quarterly Offsite Groundwater Sampling

— All offsite deep monitoring wells at the Site were sampled on May 21-May 22, 2019, using a disposable passive sampling device (HydraSleeve™) that had been deployed following the previous sampling of each well. After equilibration of the sampler, the Hydrasleeve™ was carefully removed from the well and the groundwater sample immediately collected in the appropriate containers. The sample retrieval depths for each monitoring well are consistent with those from the previous monitoring events. The shallow wells MW-25 and MW-28, which are screened in the unconfined portion of the Lower Patapsco aquifer in the offsite area, were not sampled because these wells are no longer part of the offsite monitoring program.

As part of the May 2019 sampling event, WSP also obtained water level measurements from the deep offsite monitoring wells. All sample depths, as well as depth to water in the deep offsite monitoring wells, are provided in the table below. Historical water level measurements are provided in Table 2. (No measurement is included for well MW-33D-295 below or in Table 2 due to an error in recording the depth to water reading in the field.)

Well ID	Hydrologic Unit	Depth to Water (ft BGS)	Well Depth (ft BGS)	Well Screen Interval (ft BGS)	Sample Interval (ft BGS)
MW-24D	Confined Lower Patapsco	49.67	128	118 – 128	122 – 124.5
MW-25D-130	Confined Lower Patapsco	56.23	130	120 – 130	125 – 127.5
MW-25D-192	Confined Lower Patapsco	55.45	192	182 – 192	185 – 187.5
MW-28D	Confined Lower Patapsco	86.96	210	200 – 210	205 – 207.5
MW-29D	Confined Lower Patapsco	62.36	151	141 – 151	146 – 148.5
MW-30D-273	Confined Lower Patapsco	95.74	273	263 – 273	267 – 269.5
MW-30D-413	Patuxent	137.25	413	403 – 413	407 – 409.5
MW-31D	Confined Lower Patapsco	104.91	280	270 – 280	275 – 277.5
MW-32D	Confined Lower Patapsco	97.02	236	226 – 236	233 – 235.5

Well ID	Hydrologic Unit	Depth to Water (ft BGS)	Well Depth (ft BGS)	Well Screen Interval (ft BGS)	Sample Interval (ft BGS)
MW-33D-235	Confined Lower Patapsco	121.72	235	225 – 235	230 – 232.5
MW-33D-295	Confined Lower Patapsco	---	295	285 – 295	290 – 292.5
MW-34D	Confined Lower Patapsco/Arundel Clay	129.93	385	375 – 385	379 – 381.5
MW-35D	Confined Lower Patapsco	121.65	298	288 – 298	293 – 295.5
MW-36D	Patuxent	141.30	360	350 – 360	357 – 359.5
MW-46D	Confined Lower Patapsco	35.47	90	80 – 90	84 – 86.5

FT BGS = feet below ground surface

- A potentiometric surface contour map for the confined portion of the Lower Patapsco aquifer is shown in Figure 4 using the water level data obtained during the sampling event. The general direction of groundwater flow in the confined portion of the Lower Patapsco aquifer is to the south-southeast from the former Kop-Flex facility.
- The May 2019 analytical results for samples from the offsite monitoring wells are summarized in Table 3. A copy of the certified laboratory analytical report for these samples is provided in Enclosure B. Historical groundwater sampling data for the offsite monitoring wells can be found in Table 4. Concentrations of the primary site-related VOCs in the May 2019 samples are indicated in Figure 5.
- For the confined Lower Patapsco aquifer, the concentrations of the site-related VOCs and 1,4-dioxane in the May 2019 groundwater samples are generally similar to the levels detected during the 2018 monitoring events, although levels in the MW-24D sample exhibited a noticeable increase compared to the November 2018 sampling round. Overall, the analytical data indicate the presence of site-related constituents just over one mile hydraulically downgradient of the onsite area (Figure 5). (It should be noted that site-related constituents were also detected in the sample collected from well MW-46D on the neighboring Verizon property to the north of the former Kop-Flex facility.) In the offsite area to the south, the sample from monitoring well MW-24D on the adjoining Williams-Scotsman property had the highest concentration of site-related COCs (1,633.2 µg/l). Further downgradient, a total concentration of site-related COCs of 142.5 µg/l was detected in the MW-25D-130 sample, which is higher than the concentrations in the sample (108.7 µg/l) and its duplicate (100.6 µg/l) from the deeper well (MW-25D-192) at this location. The concentrations of site-related VOCs, particularly 1,1-DCE and 1,4-dioxane, in the MW-25D-130 sample have exhibited a decreasing trend during the recent (2018 and 2019) sampling events (Table 4).

  Most of the sampling data for the confined Lower Patapsco monitoring wells located further downgradient indicate non-detect to very low concentrations of site-related COCs (Figure 5). The only exception is the sample from the well installed at the MW-30D location near the intersection of Old Camp Meade Road and Twin Oaks Road. The groundwater from MW-30D-273, which is screened from 263-273 ft BGS, had a 1,1-DCE concentration of 44.2 µg/l and 1,4-dioxane of 22.7 µg/l. Both of these levels exceed the comparative groundwater quality criteria for the

aquifer of 7 µg/l for 1,1-DCE and 4.6 µg/l for 1,4-dioxane. Additionally, the 1,4-dioxane concentration in the MW-33D-295 sample (6.1 µg/l) was above the comparative criterion.

The iso-concentration maps shown in Figures 6 and 7 depict the inferred horizontal extent of the 1,1 DCE and 1,4-dioxane plumes within the confined portion of the Lower Patapsco aquifer. These iso-concentration maps include data for the onsite monitoring wells to get a better sense of the constituent distribution within the aquifer. Overall, the inferred extents of these COCs within the aquifer are very similar to the distributions determined from the May 2018 monitoring data, with no apparent downgradient migration of the leading edge of plume areas.

— Monitoring well MW-36 in the eastern portion of the Harmans Woods neighborhood and the deeper (413-foot BGS) well at the MW-30D location are screened in the Patuxent aquifer, which underlies the Lower Patapsco. Consistent with previous sampling events, no site-related VOCs or 1,4-dioxane were detected in the samples from these wells, indicating COCs have not migrated downward through the Arundel Clay confining unit that hydraulically separates the Lower Patapsco and Patuxent aquifers.

2.0 Planned Offsite Activities for Next Reporting Period (July 2019 Through September 2019)

— Collect a synoptic round of water level measurements from the deep offsite monitoring wells in early August 2019.

— Abandon the shallow monitoring wells at the MW-25 and MW-28 locations in early August.

— Continue to conduct monthly monitoring of the untreated and treated water from the residential well at 1227 Old Camp Meade Road.

— Complete the recordation of the executed easement agreement for the water utility line on the 1229 Old Camp Meade Road property, and coordinate with the AAC DPW to begin work on tapping the Reece Road water main and setting the water meter vault box in the road ROW.

3.0 Key Personnel/Facility Changes

During the reporting period, there were no changes to either key project personnel or conditions relevant to the performance of the ongoing work at the site.

FIGURES

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LEGEND

- PROPERTY LINE
- WATER MAIN
- STREAM
- WATER BODY
- CONFINED LOWER PATAPSCO AQUIFER MONITORING WELL
- CONFINED LOWER PATAPSCO AQUIFER AND PATUXENT AQUIFER MONITORING WELLS
- PROPERTY WITH POTABLE WELL FOR SAMPLING
- 1229 STREET ADDRESS NUMBER

REFERENCE:
PARCEL INFORMATION OBTAINED FROM ANNE ARUNDEL COUNTY, DEPARTMENT OF PUBLIC WORKS http://gis-world2.aacounty.org/DPWcounter/countermap.html

0 250 500
SCALE IN FEET

Drawn By:	EGC
Checked:	CC 4/29/2019
Approved:	RG 5/2/2019
DWG Name:	314V1545.011-030

FORMER KOP-FLEX FACILITY
HANOVER, MARYLAND

PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

Figure 1

PROPERTY WITH RESIDENTIAL WELL IDENTIFIED FOR REGULAR MONITORING AND PUBLIC WATER CONNECTION

WSP USA Inc.
13530 DULLES TECHNOLOGY DR
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HERNDON, VA 20171
TEL: +1 703.709.6500

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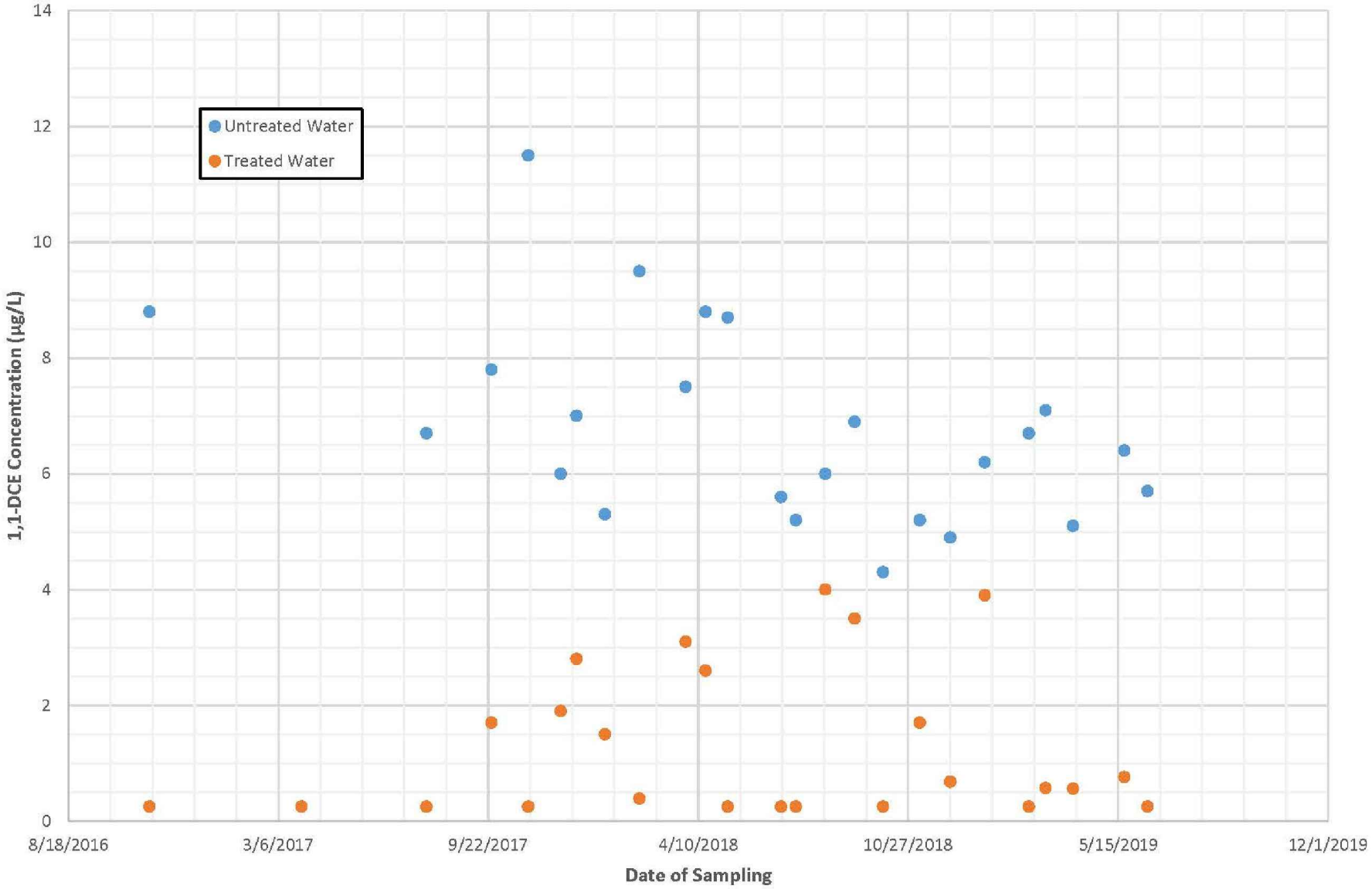

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Figure 2

1227 OLD CAMP MEADE ROAD
CONCENTRATION vs TIME PLOT
1,1-DCE

FORMER KOP-FLEX FACILITY
HANOVER, MARYLAND

PREPARED FOR
EMERSUB16 LLC
ST. LOUIS, MISSOURI

Drawn By: EGC
Checked: CC 8/7/2019
Approved: RKJ
DWG Name: 314V1545.011-038

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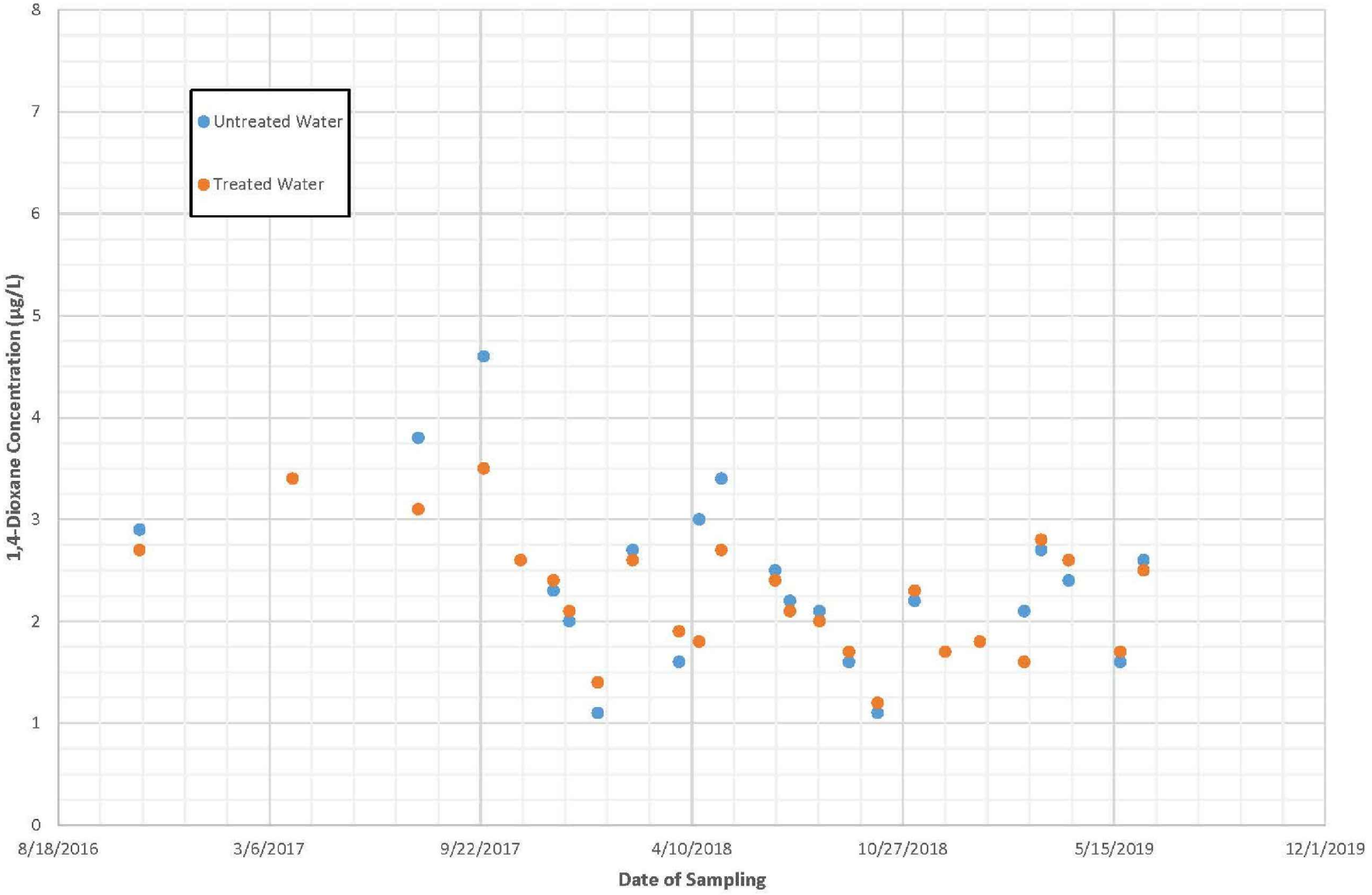

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Figure 3

1227 OLD CAMP MEADE ROAD
CONCENTRATION vs TIME PLOT
1,4-DIOXANE

FORMER KOP-FLEX FACILITY
HANOVER, MARYLAND

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REV	DESCRIPTION

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CHECKED: 8/7/2019
APPROVED: 8/7/2019

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POTENTIOMETRIC SURFACE CONTOUR MAP CONFINED PORTION OF THE LOWER PATAPSCO AQUIFER MAY 2019

FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND

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ST. LOUIS, MISSOURI

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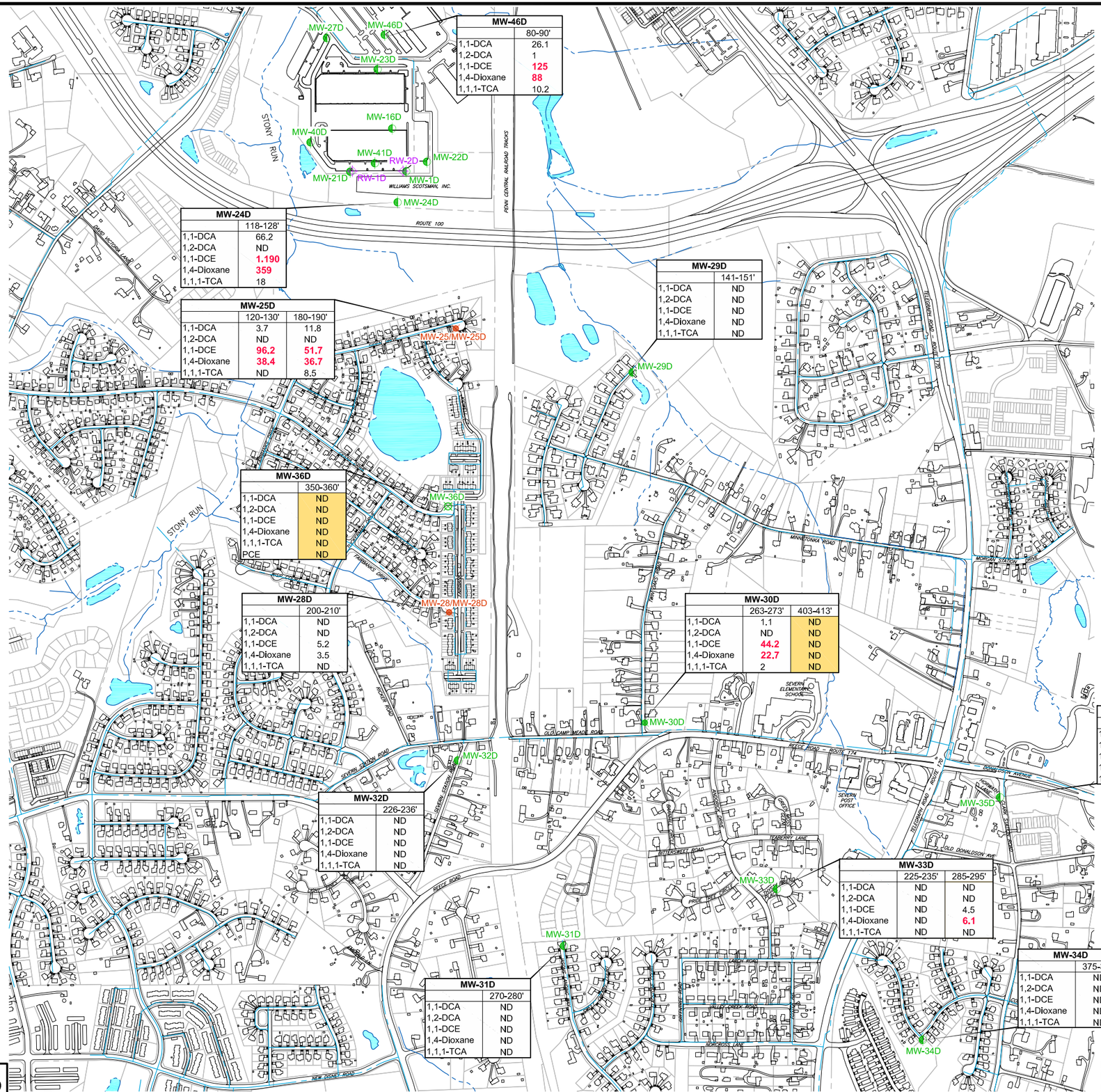
FIGURE 4

Drawing Number
314V1545.011-031



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LEGEND

- PROPERTY LINE
- WATER MAIN
- STREAM
- WATER BODY
- UNCONFINED AND CONFINED LOWER PATAPSCO AQUIFER MONITORING WELL
- CONFINED LOWER PATAPSCO AQUIFER MONITORING WELL
- PATUXENT AQUIFER MONITORING WELLS
- CONFINED LOWER PATAPSCO AQUIFER AND PATUXENT AQUIFER MONITORING WELLS
- RECOVERY WELL

WELL IDENTIFICATION

SCREENED INTERVAL (FT–BGS)

SAMPLE RESULTS IN ppb (RED INDICATES RESULTS ABOVE MDE CLEANUP STANDARDS)

CONSTITUENTS

- DCA DICHLOROETHANE
- DCE DICHLOROETHENE
- TCA TRICHLOROETHANE
- ND NOT DETECTED

WELL SCREENED IN THE PATUXENT AQUIFER

REFERENCE:
PARCEL INFORMATION OBTAINED FROM ANNE ARUNDEL COUNTY, DEPARTMENT OF PUBLIC WORKS http://gis-world2.aacounty.org/DPWcounter/countermap.html

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HANOVER, MARYLAND
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Figure 5

GROUNDWATER MONITORING RESULTS
LOWER PATAPSCO AQUIFER AND PATUXENT AQUIFER
OFFSITE MONITORING WELLS – MAY 2019

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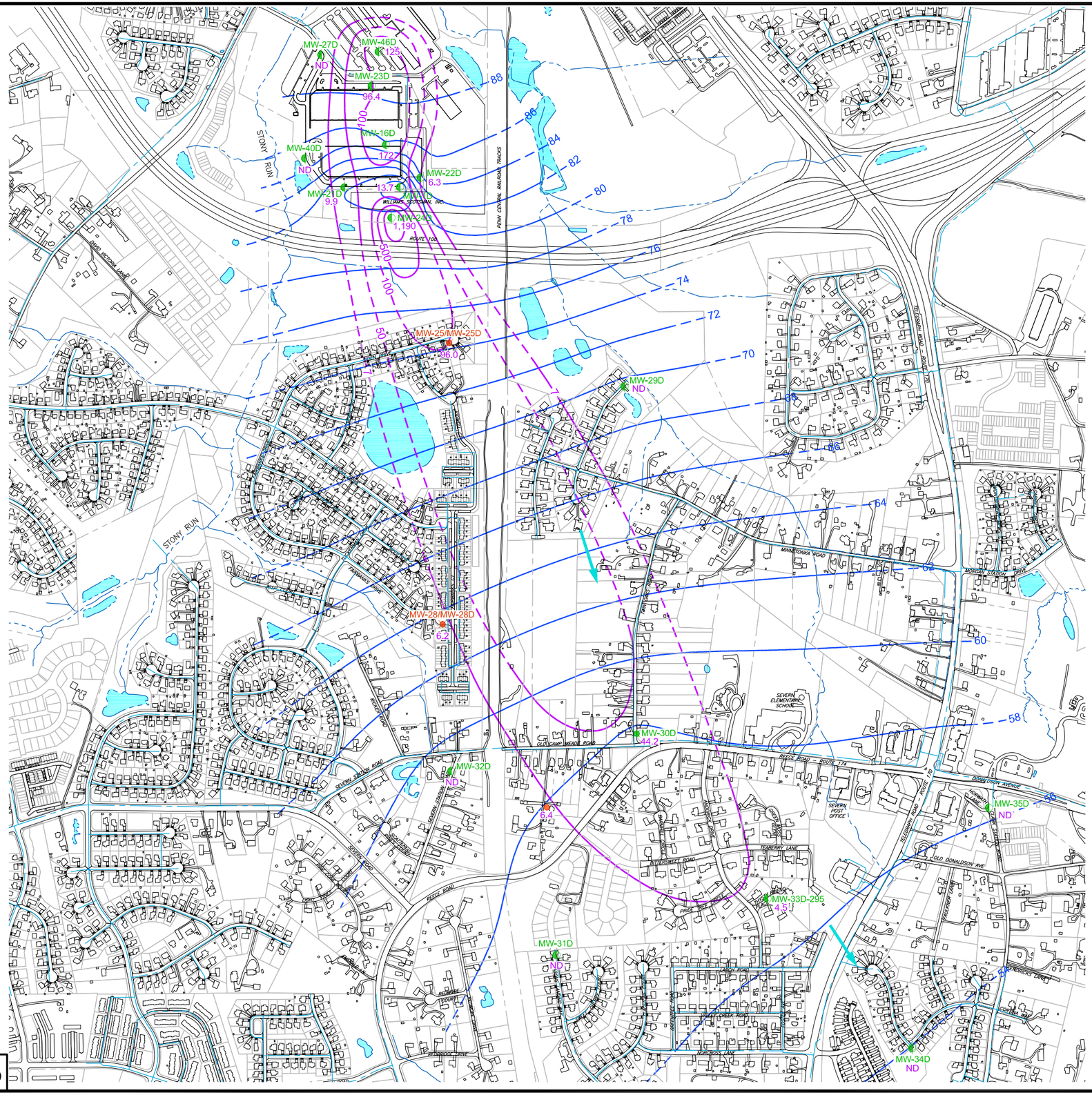
B



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- CONFINED LOWER PATAPSCO AQUIFER MONITORING WELL
- CONFINED LOWER PATAPSCO AQUIFER AND PATUXENT AQUIFER MONITORING WELLS
- RESIDENTIAL WELL
- ND NOT DETECTED
- 125 1,1-DCE CONCENTRATION (ppb)
- INFERRED 1,1-DCE ISO-CONCENTRATION CONTOUR (ppb)
- INFERRED 1,1-DCE ISO-CONCENTRATION CONTOUR (ppb) CHARACTERIZED BY HIGHER UNCERTAINTY GIVEN LOCATIONS OF SAMPLING POINTS
- POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- INFERRED GROUNDWATER FLOW

0 800 1600
SCALE IN FEET

REFERENCE:
PARCEL INFORMATION OBTAINED FROM ANNE ARUNDEL COUNTY, DEPARTMENT OF PUBLIC WORKS http://gis-world2.aacounty.org/DPWcounter/countermap.html

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FORMER KOP-FLEX FACILITY
HANOVER, MARYLAND
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Figure 6
INFERRED 1,1-DCE DISTRIBUTION IN CONFINED ZONE OF LOWER PATAPSCO AQUIFER (MAY 2019)

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- CONFINED LOWER PATAPSCO AQUIFER MONITORING WELL
- CONFINED LOWER PATAPSCO AQUIFER AND PATUXENT AQUIFER MONITORING WELLS
- RESIDENTIAL WELL
- ND NOT DETECTED
- 187 1,4-DIOXANE CONCENTRATION (ppb)
- INFERRED 1,4-DIOXANE ISO-CONCENTRATION CONTOUR (ppb)
- INFERRED 1,4-DIOXANE ISO-CONCENTRATION CONTOUR (ppb) CHARACTERIZED BY HIGHER UNCERTAINTY GIVEN LOCATIONS OF SAMPLING POINTS
- POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- INFERRED GROUNDWATER FLOW

REFERENCE:
PARCEL INFORMATION OBTAINED FROM ANNE ARUNDEL COUNTY, DEPARTMENT OF PUBLIC WORKS http://gis-world2.aacounty.org/DPWcounter/countermap.html

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Figure 7

INFERRED 1,4-DIOXANE DISTRIBUTION IN CONFINED ZONE OF LOWER PATAPSCO AQUIFER (MAY 2019)

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B

TABLES

Table 1

Historical Analytical Results for Private Well Samples
1227 Old Camp Meade Road
Former Kop-Flex Facility Site
Hanover, Maryland

		Parameter Units MCL	Acetone µg/l 550 (a)	Bromoform µg/l 80 (a)	Carbon Disulfide µg/l 100 (a)	Chloroform µg/l 80 (a)	1,1-Dichloroethane µg/l 90 (a)	1,1-Dichloroethylene µg/l 7	Methyl Tert Butyl Ether µg/l 20 (a)	Toluene µg/l 1,000	1,1,1-Trichloroethane µg/l 200	Tetrachloro-ethylene µg/l 5	Trichloro-ethylene µg/l 5	1,4-Dioxane µg/l 4.6 (b)
Address	**Sample Type**	**Date**												
1227 Old Camp	Pre-Treatment	2/13/2013	5 U	0.5 U	0.18 J	0.5 U	0.5 U	0.55	0.25 J	0.18 J	0.091 J	0.5 U	0.5 U	2.0 U
	Post-Treatment	2/13/2013	5 U	0.5 U	0.5 U	0.2 J	0.5 U	0.5 U	0.5 U	0.5 U	0.081 J	0.5 U	0.5 U	2.0 U
Meade Rd	Pre-Treatment	7/9/2013	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.11 J	0.5 U	0.5 U	2.3
Well Depth: 300 ft.	Pre-Treatment	2/12/2014	5 U	0.5 U	0.5 U	0.5 U	0.15 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.0 U
	Pre-Treatment	5/29/2014	5 U	0.5 U	0.5 U	0.5 U	0.051 J	1.3	0.5 U	0.5 U	0.15 J	0.5 U	0.5 U	2.0 U
	Post-Treatment	5/29/2014	5 U	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U	0.5 U	0.5 U	0.15 J	0.5 U	0.5 U	2.0 U
	Pre-Treatment	9/12/2014	5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.0	0.5 U	0.5 U	0.21 J	0.5 U	0.5 U	2.0 U
	Post-Treatment	9/12/2014	5 U	0.28 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.18 J	0.5 U	0.5 U	2.0 U
	Pre-Treatment	12/8/2014	0.99 J	0.5 U	0.5 U	0.5 U	0.5 U	0.43 J	0.5 U	0.5 U	0.20 J	0.5 U	0.5 U	2.0 U
	Post-Treatment	12/8/2014	5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.4	0.5 U	0.5 U	0.24 J	0.5 U	0.5 U	2.0 U
	Pre-Treatment	11/3/2016	5 U	0.5 U	0.5 U	0.5 U	0.19 J	8.8	0.5 U	0.5 U	0.48 J	0.5 U	0.5 U	2.9
	Post-Treatment	11/3/2016	5 U	0.5 U	0.5 U	0.095 J	0.16 J	0.5 U	0.5 U	0.5 U	0.42 J	0.5 U	0.5 U	2.7
	Post-Treatment	3/28/2017	5 U	0.5 U	0.5 U	0.5 U	0.17 J	0.5 U	0.5 U	0.5 U	0.41 J	0.5 U	0.5 U	3.4
	Pre-Treatment	7/25/2017	5 U	0.5 U	0.5 U	0.5 U	0.15 J	6.7	0.5 U	0.5 U	0.33 J	0.5 U	0.5 U	3.8
	Post-Treatment	7/25/2017	5 U	0.55	0.5 U	0.5 U	0.19 J	0.5 U	0.5 U	0.5 U	0.42 J	0.5 U	0.5 U	3.1
	Pre-Treatment	9/25/2017	5 U	0.5 U	0.5 U	0.5 U	0.18 J	7.8	0.5 U	0.5 U	0.41 J	0.5 U	0.5 U	4.6
	Post-Treatment	9/25/2017	5 U	0.5 U	0.5 U	0.5 U	0.15 J	1.7	0.5 U	0.5 U	0.37 J	0.5 U	0.5 U	3.5
	Pre-Treatment	10/30/2017	5 U	0.5 U	0.5 U	0.5 U	0.24 J	11.5	0.5 U	0.5 U	0.5	0.5 U	0.5 U	2.6
	Post-Treatment	10/30/2017	5 U	0.5 U	0.5 U	0.5 U	0.23 J	0.5 U	0.5 U	0.5 U	0.53	0.5 U	0.5 U	2.6
	Pre-Treatment	11/30/2017	5 U	0.5 U	0.5 U	0.5 U	0.16 J	6.0	0.5 U	0.5 U	0.3 J	0.5 U	0.5 U	2.3
	Post-Treatment	11/30/2017	5 U	0.5 U	0.5 U	0.5 U	0.17 J	1.9	0.5 U	0.5 U	0.34 J	0.5 U	0.5 U	2.4
	Pre-Treatment	12/15/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	7.0	0.5 U	0.5 U	0.36 J	0.5 U	0.5 U	2.0
	Post-Treatment	12/15/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.8	0.5 U	0.5 U	0.39 J	0.5 U	0.5 U	2.1
	Pre-Treatment	1/11/2018	5 U	0.5 U	0.5 U	0.5 U	0.15 J	5.3	0.5 U	0.5 U	0.27 J	0.5 U	0.5 U	1.1
	Post-Treatment	1/11/2018	5 U	0.5 U	0.5 U	0.5 U	0.14 J	1.5	0.5 U	0.5 U	0.32 J	0.5 U	0.5 U	1.4
	Pre-Treatment	2/13/2018	5 U	0.5 U	0.5 U	0.5 U	0.16 J	9.5	0.5 U	0.5 U	0.44 J	0.5 U	0.5 U	2.7
	Post-Treatment	2/13/2018	5 U	0.5 U	0.5 U	0.5 U	0.16 J	0.39 J	0.5 U	0.5 U	0.38 J	0.5 U	0.5 U	2.6
	Pre-Treatment	3/29/2018	5 U	0.5 U	0.5 U	0.5 U	0.14 J	7.5	0.5 U	0.5 U	0.35 J	0.5 U	0.5 U	1.6
	Post-Treatment	3/29/2018	5 U	0.5 U	0.5 U	0.5 U	0.14 J	3.1	0.5 U	0.5 U	0.34 J	0.5 U	0.5 U	1.9
	Pre-Treatment	4/17/2018	5 U	0.5 U	0.5 U	0.5 U	0.18 J	8.8	0.5 U	0.5 U	0.45 J	0.5 U	0.5 U	3.0
	Post-Treatment	4/17/2018	5 U	0.5 U	0.5 U	0.5 U	0.15 J	2.6	0.5 U	0.5 U	0.37 J	0.5 U	0.5 U	1.8
	Pre-Treatment	5/8/2018	5 U	0.5 U	0.5 U	0.5 U	0.18 J	8.7	0.5 U	0.5 U	0.48 J	0.5 U	0.5 U	3.4
	Post-Treatment	5/8/2018	5 U	0.5 U	0.5 U	0.5 U	0.17 J	0.5 U	0.5 U	0.5 U	0.42 J	0.5 U	0.5 U	2.7
	Pre-Treatment	6/28/2018	1.5 J	0.5 U	0.5 U	0.5 U	0.5 U	5.6	0.5 U	0.5 U	0.28 J	0.5 U	0.5 U	2.5
	Post-Treatment	6/28/2018	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.28 J	0.5 U	0.5 U	2.4
	Pre-Treatment	7/12/2018	5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.2
	Post-Treatment	7/12/2018	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.1
	Pre-Treatment	8/9/2018	5 U	0.5 U	0.5 U	0.5 U	0.5 U	6.0	0.5 U	0.5 U	0.26 J	0.5 U	0.5 U	2.1
	Post-Treatment	8/9/2018	5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.0	0.5 U	0.5 U	0.27 J	0.5 U	0.5 U	2.0
	Pre-Treatment	9/6/2018	5 U	0.5 U	0.5 U	0.5 U	0.5 U	6.9	0.5 U	0.5 U	0.28 J	0.5 U	0.5 U	1.6
	Post-Treatment	9/6/2018	2.8 J	0.5 U	0.5 U	0.5 U	0.5 U	3.5	0.5 U	0.5 U	0.33 J	0.5 U	0.5 U	1.7
	Pre-Treatment	10/3/2018	5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.3	0.5 U	0.5 U	0.50 U	0.5 U	0.5 U	1.1
	Post-Treatment	10/3/2018	5 U	0.51	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.50 U	0.5 U	0.5 U	1.2
	Pre-Treatment	11/7/2018	5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.2	0.5 U	0.5 U	0.24 J	0.5 U	0.5 U	2.2
	Post-Treatment	11/7/2018	5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.7	0.5 U	0.5 U	0.25 J	0.5 U	0.5 U	2.3
	Pre-Treatment	12/6/2018	5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.9	0.5 U	0.5 U	0.22 J	0.5 U	0.5 U	1.7
	Post-Treatment	12/6/2018	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.68	0.5 U	0.5 U	0.27 J	0.5 U	0.5 U	1.7

Table 1

Historical Analytical Results for Private Well Samples
1227 Old Camp Meade Road
Former Kop-Flex Facility Site
Hanover, Maryland

	Parameter	Acetone	Bromoform	Carbon Disulfide	Chloroform	1,1-Dichloroethane	1,1-Dichloroethylene	Methyl Tert Butyl Ether	Toluene	1,1,1-Trichloroethane	Tetrachloro-ethylene	Trichloro-ethylene	1,4-Dioxane
	Units	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
	MCL	550 (a)	80 (a)	100 (a)	80 (a)	90 (a)	7	20 (a)	1,000	200	5	5	4.6 (b)
Sample Type	**Date**												
Pre-Treatment	1/8/2019	--	0.5 U	0.5 U	0.5 U	0.5 U	6.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.8
Post-Treatment	1/8/2019	--	0.5 U	0.5 U	0.5 U	0.5 U	3.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.8
Pre-Treatment	2/19/2019	5 U	0.5 U	0.5 U	0.5 U	0.5 U	6.7	0.5 U	0.5 U	0.28 J	0.5 U	0.5 U	2.1
Post-Treatment	2/19/2019	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.32 J	0.5 U	0.5 U	1.6
Pre-Treatment	3/7/2019	5 U	0.5 U	0.5 U	0.5 U	0.5 U	7.1	0.5 U	0.5 U	0.28 J	0.5 U	0.5 U	2.7
Post-Treatment	3/7/2019	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.57	0.5 U	0.5 U	0.30 J	0.5 U	0.5 U	2.8
Pre-Treatment	4/2/2019	5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.1	0.5 U	0.5 U	0.23 J	0.5 U	0.5 U	2.4
Post-Treatment	4/2/2019	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.56	0.5 U	0.5 U	0.25 J	0.5 U	0.5 U	2.6
Pre-Treatment	5/21/2019	3.1 J	0.5 U	0.5 U	0.5 U	0.5 U	6.4	0.5 U	0.5 U	0.26 J	0.5 U	0.5 U	1.6
Post-Treatment	5/21/2019	2.5 J	0.5 U	0.5 U	0.5 U	0.5 U	0.76	0.5 U	0.5 U	0.14 J	0.5 U	0.5 U	1.7
Pre-Treatment	6/12/2019	5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.7	0.5 U	0.5 U	0.23 J	0.5 U	0.5 U	2.6
Post-Treatment	6/12/2019	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.25 J	0.5 U	0.5 U	2.5

(a) Maryland Department of Environment Action Level
(b) Maryland Risk Based Action Level

Notes:
MCL = US Environmental Protection Agency Maximum Contaminant Level
U = Undetected, value reported is the laboratory reporting limit
J = Indicates an estimated value between method detection limit and reporting limit
-- = Not analyzed

Table 2

Historical Groundwater Level Data (2017 to Present)
Offsite Area
Former Kop-Flex Facility Site
Hanover, Maryland

Well ID	Zone	TOC elevation (feet MSL)	5/1/2017		8/31/2017		11/14/2017		2/13/2018		5/31/2018	
			Depth to Water	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*
MW-25	Shallow	130.6	14.02	116.58	14.09	116.51	14.6	116.00	14.56	116.04	13.10	117.50
MW-28	Shallow	150.5	27.4	123.10	27.2	123.30	27.22	123.28	27.48	123.02	27.42	123.08
MW-45	Shallow	126.7	13.67	113.05	NM	--	NM	--	NM	--	12.98	113.74
MW-24D	Confined LPA	129.1	48.35	80.75	48.35	80.75	51.99	77.11	NM	--	50.94	78.16
MW-25D-130	Confined LPA	130.5	53.80	76.70	61.38	69.12	58.46	72.04	58.31	72.19	58.23	72.27
MW-25D-192	Confined LPA	130.5	53.11	77.39	60.36	70.14	58.71	71.79	57.49	73.01	57.40	73.10
MW-28D	Confined LPA	150.5	82.72	67.78	94.55	55.95	89.03	61.47	67.37	83.13	88.75	61.75
MW-29D	Confined LPA	131.9	NM	--	NM	--	NM	--	NM	--	64.94	66.98
MW-30D-273	Confined LPA	153.5	NM	--	NM	--	NM	--	NM	--	98.66	54.88
MW-31D	Confined LPA	162.5	100.24	62.26	115.67	46.83	107.21	55.29	106.29	56.21	106.80	55.70
MW-32D	Confined LPA	156.1	NM	--	NM	--	NM	--	NM	--	97.90	58.24
MW-33D-235	Confined LPA	178.6	117.26	61.34	133.39	45.21	124.55	54.05	123.79	54.81	124.00	54.60
MW-33D-295	Confined LPA	178.3	117.03	61.27	133.14	45.16	124.36	53.94	123.60	54.70	123.83	54.47
MW-34D	Confined LPA	183.9	NM	--	NM	--	NM	--	NM	--	132.70	51.21
MW-35D	Confined LPA	177.8	117.28	60.52	133.55	44.25	125.59	52.21	124.02	53.78	124.27	53.53
MW-46D	Confined LPA	124.8	NM	--	NM	--	NM	--	NM	--	37.37	87.43
MW-30D-413	Patuxent	153.1	NM	--	NM	--	NM	--	NM	--	138.10	15.03
MW-36D	Patuxent	158.7	NM	--	NM	--	NM	--	NM	--	141.75	16.96

Notes:

NM = no measurement taken at the well
TOC = top of casing
LPA = Lower Patapsco Aquifer
MSL = mean sea level

a/ Measurement is not included due to an error during recordation in the field.

Table 2

Historical Groundwater Level Data (2017 to Present)
Offsite Area
Former Kop-Flex Facility Site
Hanover, Maryland

Well ID	Zone	TOC elevation (feet MSL)	8/23/2018		11/8/2018		2/19/2019		5/22/2019	
			Depth to Water	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*	*Depth to Water*	*Groundwater Elevation*
MW-25	Shallow	130.6	NM	--	11.84	118.76	11.75	118.85	NM	--
MW-28	Shallow	150.5	NM	--	24.33	126.17	23.30	127.20	NM	--
MW-45	Shallow	126.7	NM	--	12.00	114.72	11.98	114.74	11.75	114.97
MW-24D	Confined LPA	129.1	NM	--	50.72	78.38	48.92	80.18	49.67	79.43
MW-25D-130	Confined LPA	130.5	59.53	70.97	58.75	71.75	54.96	75.54	56.23	74.27
MW-25D-192	Confined LPA	130.5	58.69	71.81	57.63	72.87	54.20	76.30	55.45	75.05
MW-28D	Confined LPA	150.5	90.98	59.52	88.30	62.20	84.78	65.72	86.96	63.54
MW-29D	Confined LPA	131.9	66.56	65.36	65.03	66.89	60.64	71.28	62.36	69.56
MW-30D-273	Confined LPA	153.5	100.70	52.84	98.14	55.40	93.10	60.44	95.74	57.80
MW-31D	Confined LPA	162.5	109.95	52.55	106.27	56.23	102.47	60.03	104.91	57.59
MW-32D	Confined LPA	156.1	100.65	55.49	98.97	57.17	93.79	62.35	97.02	59.12
MW-33D-235	Confined LPA	178.6	127.52	51.08	125.14	53.46	119.35	59.25	121.72	56.88
MW-33D-295	Confined LPA	178.3	127.34	50.96	125.69	52.61	119.10	59.20	-- (a)	--
MW-34D	Confined LPA	183.9	136.42	47.49	131.76	52.15	127.40	56.51	129.93	53.98
MW-35D	Confined LPA	177.8	128.19	49.61	123.64	54.16	119.28	58.52	121.65	56.15
MW-46D	Confined LPA	124.8	NM	--	32.68	92.12	NM	--	35.47	89.33
MW-30D-413	Patuxent	153.1	143.75	9.38	140.62	12.51	130.73	22.40	137.25	15.88
MW-36D	Patuxent	158.7	146.32	12.39	143.85	14.86	134.83	23.88	141.3	17.41

Notes:

NM = no measurement taken at the well
TOC = top of casing
LPA = Lower Patapsco Aquifer
MSL = mean sea level

a/ Measurement is not included due to an error during

Table 3

Offsite Monitoring Well Sample Results
Former Kop-Flex Facility Site
Hanover, Maryland
May 2019

Parameters (a)	Groundwater Quality Standards (µg/L) (b)	Well ID: / Sampling Date:	CONFINED LOWER PATAPSCO AQUIFER								
			MW-24D 22-May-19	**MW-25D-130** 22-May-19	**MW-25D-192** 22-May-19	**DUP 052219A (d)** 22-May-19	**MW-28D** 22-May-19	**MW-29D** 22-May-19	**MW-30D-273** 22-May-19	**MW-31D** 22-May-19	**MW-32D** 22-May-19
1,1-Dichloroethane	90		66.2	3.7	11.8	10.7	1.0 U	1.0 U	1.1	1.0 U	1.0 U
1,1-Dichloroethene	7		**1,190**	**96**	**51.7**	**45.7**	5.2	1.0 U	**44.2**	1.0 U	1.0 U
1,4-Dioxane	4.6 (c)		**359**	**38.4**	**36.7**	**36.8**	3.5	2.0 U	**22.7**	2.0 U	2.0 U
1,1,1-Trichloroethane	200		18.0	4.2	8.5	7.4	1.0 U	1.0 U	2.0	1.0 U	1.0 U
	Total CVOCs & 1,4-Dioxane	-	1,633.2	142.5	108.7	100.6	8.7	ND	70.0	ND	ND

a/ U = not detected above the method detection limit; CVOC = chlorinated volatile organic compound.

Bolded values indicate an exceedence of the Groundwater Quality Standards

All sample concentrations in micrograms per liter (µg/l)

b/ Source: http://www.mde.maryland.gov/assets/document/Final%20Update%20No%202.1%20dated%205-20-08(1).pdf

c/ Value represents the MDE risk-based action level.

d/ Field duplicate of sample from well MW-25-192.

Table 3

Offsite Monitoring Well Sample Results
Former Kop-Flex Facility Site
Hanover, Maryland
May 2019

Parameters (a)	Groundwater Quality Standards (µg/L) (b)	Well ID:	CONFINED LOWER PATAPSCO AQUIFER					PATUXENT AQUIFER	
			MW-33D-235	MW-33D-295	MW-34D	MW-35D	MW-46D	MW-30D-413	MW-36D
		Sampling Date:	22-May-19	22-May-19	22-May-19	22-May-19	21-May-19	22-May-19	22-May-19
1,1-Dichloroethane	90		1.0 U	1.0 U	1.0 U	1.0 U	26.1	1.0 U	1.0 U
1,1-Dichloroethene	7		1.0 U	4.5	1.0 U	1.0 U	**125**	1.0 U	1.0 U
1,4-Dioxane	4.6 (c)		2.0 U	**6.1**	2.0 U	2.0 U	**88.0**	2.0 U	2.0 U
1,1,1-Trichloroethane	200		1.0 U	1.0 U	1.0 U	1.0 U	10.2	1.0 U	1.0 U
Total CVOCs & 1,4-Dioxane			ND	10.6	ND	ND	249.3	ND	ND

a/ U = not detected above the method detection limit; CVOC = chlorinated volatile organic compound.

Bolded values indicate an exceedence of the Groundwater Quality Standards

All sample concentrations in micrograms per liter (µg/l)

b/ Source: http://www.mde.maryland.gov/assets/document/Final%20Update%20No%202.1%20dated%205-20-08(1).pdf

c/ Value represents the MDE risk-based action level.

d/ Field duplicate of sample from well MW-25-192.

Table 4

Historical Offsite Groundwater Sampling Results (2015 to Present)
Former Kop-Flex Facility Site
Hanover, Maryland

Well ID		Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
Groundwater Quality Standard (µg/L)		3.6	90	5	7	70	4.6	5	200	5	5	2
	Sample Date											
Unconfined Lower Patapsco Wells (b)												
MW-25	3/19/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/24/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/23/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1/6/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	3/23/2016	1.0 U	1.0 U	1.0 U	1.5	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	7/20/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	12/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/31/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2017	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	**11.7**	1.0 U	1.0 U	1.0 U	1.0 U
	2/13/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/30/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-28	3/17/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/23/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/22/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1/5/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	3/22/2016	1.0 U	1.0 U	1.0 U	6.2	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	7/19/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/7/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	12/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/31/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2017	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/14/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/30/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Confined Lower Patapsco Wells												
MW-24D	3/22/2016	12.5 U	88.0	15.7	**1,780**	12.5 U	**561**	39.4	38.6	12.5 U	12.5 U	12.5 U
	12/8/2016	5.0 U	36.1	5.2	**701**	5.0 U	**192**	10.0 U	9.0	5.0 U	5.0 U	5.0 U
	5/2/2017	5.0 U	40.4	5.6	**830**	5.0 U	**216**	10.0 U	10.2	5.0 U	5.0 U	5.0 U
	11/14/2017	5.0 U	28.1	3.4	**803**	2.3	**212**	11.7	10.5	0.5 J	5.9	1.0 U
	5/30/2018	4.0 U	26.6	4.0 U	**529**	4.0 U	**187**	8.0 U	5.5	4.0 U	4.0 U	4.0 U
	11/7/2018	5.0 U	29.8	5.0 U	**560**	5.0 U	2.0 U	10.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	5/22/2019	10.0 U	66.2	10.0 U	**1,190**	10.0 U	**359**	50.0 U	18	10.0 U	10.0 U	10.0 U
MW-25D-130	3/19/2015	10.0 U	38.6	**10.8**	**854**	10.0 U	**446**	200 U	**8,930**	100 U	100 U	100 U
	6/24/2015	1.0 U	37.1	**8.9**	**1,030**	4.6	**303**	2.0 U	46.3	1.2	**6.8**	1.0 U
	9/23/2015	10.0 U	29.7	10.0 U	**697**	10.0 U	**295**	20.0 U	32.3	10.0 U	**14.2**	10.0 U
	1/7/2016	5.0 U	33.4	**9.7**	**800**	5.0 U	**398**	10.0 U	5.0 U	5.0 U	**6.1**	5.0 U
	3/23/2016	5.0 U	24.5	**8.0**	**676**	5.0 U	**302**	10.0 U	26.2	5.0 U	**5.0**	5.0 U
	7/19/2016	10.0 U	39.3	**10.2**	**1,090**	4.9 J	**367**	14.3 J	37.0	10.0 U	**6.5** J	10.0 U
	9/9/2016	5.0 U	27.9	**6.4**	**661**	5.0 U	**241**	**12.0**	25.0	5.0 U	5.0 U	5.0 U
	12/8/2016	1.0 U	6.7	1.5	**171**	1.0 U	**13.6**	2.0 U	6.9	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	7.2	1.7	**194**	1.0 U	**69.1**	2.0 U	7.0	1.0 U	1.2	1.0 U
	5/2/2017	2.0 U	6.5	2.0 U	**174**	2.0 U	**61.0**	4.0 U	5.0	2.0 U	2.0 U	2.0 U
	8/31/2017	2.0 U	7.4	1.7	**193**	2.0 U	**57.9**	4.0 U	6.9	2.0 U	2.0 U	2.0 U
	11/14/2017	2.0 U	5.1	1.3	**151**	0.57 J	**58.5**	5.0 U	6.4	1.0 U	1.1	1.0 U
	2/13/2018	2.0 U	6.3	2.0 U	**154**	2.0 U	**67.1**	5.0 U	6.4	1.0 U	1.0 U	1.0 U
	5/30/2018	2.0 U	5.0	1.4	**144**	2.0 U	**53.9**	5.0 U	5.3	1.0 U	1.0 U	1.0 U
	11/8/2018	2.0 U	4.4	1.1	**109**	2.0 U	**40.2**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/22/2019	1.0 U	3.7	1.0 U	**96.2**	1.0 U	**38.4**	5.0 U	4.2	1.0 U	1.0 U	1.0 U

Table 4

Historical Offsite Groundwater Sampling Results (2015 to Present)
Former Kop-Flex Facility Site
Hanover, Maryland

Well ID		Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
Groundwater Quality Standard (µg/L)		3.6	90	5	7	70	4.6	5	200	5	5	2
MW-25D-192	3/19/2015	1.0 U	11.7	1.0 U	**53.0**	1.0 U	**49.4**	2.0 U	13.7	1.0 U	1.0 U	1.0 U
	6/25/2015	1.0 U	11.9	1.0 U	**59.4**	1.0 U	**39.8**	2.0 U	14.2	1.0 U	1.0 U	1.0 U
	9/22/2015	1.0 U	13.9	1.0 U	**51.4**	1.0 U	**45.0**	2.0 U	12.9	1.0 U	1.3	1.0 U
	1/7/2016	1.0 U	11.7	1.0 U	**47.2**	1.0 U	**41.7**	2.0 U	12.5	1.0 U	1.0 U	1.0 U
	3/23/2016	1.0 U	10.3	1.0 U	**43.3**	1.0 U	**42.2**	2.0 U	11.3	1.0 U	1.0 U	1.0 U
	7/20/2016	1.0 U	11.7	0.73 J	**54.9**	1.0 U	**54.4**	2.0 U	11.1	1.0 U	1.0 U	1.0 U
	9/8/2016	1.0 U	12.9	1.0 U	**56.8**	1.0 U	**39.3**	2.0 U	12.6	1.0 U	1.0 U	1.0 U
	12/8/2016	1.0 U	16.1	1.0 U	**64.6**	1.0 U	**51.3**	2.0 U	13.3	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	14.0	1.0 U	**63.3**	1.0 U	**52.1**	2.0 U	11.6	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	16.9	1.0 U	**81.0**	1.0 U	**53.1**	2.0 U	13.5	1.0 U	1.0 U	1.0 U
	8/31/2017	1.0 U	15.7	1.0 U	**62.5**	1.0 U	**44.3**	2.0 U	13.1	1.0 U	1.0 U	1.0 U
	11/14/2017	5.0 U	13.6	0.67 J	**67.2**	1.0 U	**56.7**	5.0 U	13.6	1.0 U	1.0 U	1.0 U
	2/13/2018	5.0 U	13.7	1.0 U	**69.2**	1.0 U	**42.7**	5.0 U	11.0	1.0 U	1.0 U	1.0 U
	5/30/2018	5.0 U	10.8	1.0 U	**58.3**	1.0 U	**50.8**	5.0 U	7.2	1.0 U	1.0 U	1.0 U
	11/8/2018	5.0 U	13.7	1.0 U	**61.0**	1.0 U	**49.3**	5.0 U	9.8	1.0 U	1.0 U	1.0 U
	5/22/2019	1.0 U	11.8	1.0 U	**51.7**	1.0 U	**36.7**	5.0 U	8.5	1.0 U	1.0 U	1.0 U
MW-28D	3/17/2015	1.0 U	1.0 U	1.0 U	**10.6**	1.0 U	**5.0**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/23/2015	1.0 U	1.0 U	1.0 U	**12.8**	1.0 U	4.5	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/22/2015	1.0 U	1.0 U	1.0 U	**14.3**	1.0 U	4.4	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1/5/2016	1.0 U	1.0 U	1.0 U	**11.5**	1.0 U	**5.5**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	3/23/2016	1.0 U	1.0 U	1.0 U	**9.1**	1.0 U	4.0	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	7/19/2016	1.0 U	1.0 U	0.25 J	**10.1**	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/7/2016	1.0 U	1.0 U	1.0 U	**12.0**	1.0 U	**5.0**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	12/8/2016	1.0 U	1.0 U	1.0 U	6.3	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	1.0 U	1.0 U	4.6	1.0 U	3.0	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	1.0 U	1.0 U	5.8	1.0 U	2.7	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/31/2017	1.0 U	1.0 U	1.0 U	5.0	1.0 U	2.7	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2017	5.0 U	1.0 U	1.0 U	5.5	1.0 U	3.5	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/14/2018	5.0 U	1.0 U	1.0 U	4.3	1.0 U	2.8	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/30/2018	5.0 U	1.0 U	1.0 U	6.1	1.0 U	2.4	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/8/2018	5.0 U	1.0 U	1.0 U	6.9	1.0 U	2.3	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/22/2019	1.0 U	1.0 U	1.0 U	5.2	1.0 U	3.5	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-29D	5/21/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/23/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/8/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/19/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/22/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-30D-273	5/31/2018	5.0 U	1.0 U	1.0 U	**27.4**	1.0 U	**16.4**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/23/2018	5.0 U	1.0	1.0 U	**40.7**	1.0 U	**24.5**	5.0 U	1.7	1.0 U	1.0 U	1.0 U
	11/8/2018	5.0 U	1.2	1.0 U	**44.0**	1.0 U	**22.2**	5.0 U	2.1	1.0 U	1.0 U	1.0 U
	2/19/2019	1.0 U	1.1	1.0 U	**47.2**	1.0 U	**23.1**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/22/2019	1.0 U	1.1	1.0 U	**44.2**	1.0 U	**22.7**	5.0 U	2.0	1.0 U	1.0 U	1.0 U

Table 4

Historical Offsite Groundwater Sampling Results (2015 to Present)
Former Kop-Flex Facility Site
Hanover, Maryland

Well ID		Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
Groundwater Quality Standard (µg/L)		3.6	90	5	7	70	4.6	5	200	5	5	2
MW-31D	3/17/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/24/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/22/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1/6/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	3/21/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	7/19/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/6/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	12/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/31/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2017	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/14/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/31/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/8/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/22/2019	1.0 U	1.0 U	1.0 U	1 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-32D	5/31/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/23/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/8/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/19/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/22/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-33D-235	3/18/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/23/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/21/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1/4/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	3/21/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	7/18/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/7/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	12/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/31/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2017	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.3	**12.0**	1.0 U	1.0 U	1.0 U	1.0 U
	2/13/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/31/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/8/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/22/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-33D-295	3/18/2015	1.0 U	1.0 U	1.0 U	4.6	1.0 U	**8.0**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/23/2015	1.0 U	1.0 U	1.0 U	3.3	1.0 U	**6.8**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/21/2015	1.0 U	1.0 U	1.0 U	4.8	1.0 U	**6.8**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1/4/2016	1.0 U	1.0 U	1.0 U	3.7	1.0 U	**7.6**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	3/21/2016	1.0 U	1.0 U	1.0 U	3.9	1.0 U	**7.8**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	7/18/2016	1.0 U	1.0 U	0.36 J	3.2	1.0 U	**5.1**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/7/2016	1.0 U	1.0 U	1.0 U	3.8	1.0 U	**7.4**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	12/8/2016	1.0 U	1.0 U	1.0 U	5.4	1.0 U	**7.4**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	1.0 U	1.0 U	4.0	1.0 U	**6.8**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	1.0 U	1.0 U	5.3	1.0 U	**7.4**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/31/2017	1.0 U	1.0 U	1.0 U	5.6	1.0 U	**6.3**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2017	5.0 U	1.0 U	1.0 U	3.4	1.0 U	**9.7**	**11.5**	0.49 J	1.0 U	1.0 U	1.0 U
	2/13/2018	5.0 U	1.0 U	1.0 U	4.6	1.0 U	**6.9**	2.0 U	0.49 J	1.0 U	1.0 U	1.0 U
	5/31/2018	5.0 U	1.0 U	1.0 U	4.6	1.0 U	**6.9**	2.0 U	0.49 J	1.0 U	1.0 U	1.0 U
	11/8/2018	5.0 U	1.0 U	1.0 U	4.2	1.0 U	**6.1**	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/22/2019	1.0 U	1.0 U	1.0 U	4.5	1.0 U	**6.1**	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 4

Historical Offsite Groundwater Sampling Results (2015 to Present)
Former Kop-Flex Facility Site
Hanover, Maryland

Well ID		Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
Groundwater Quality Standard (µg/L)		3.6	90	5	7	70	4.6	5	200	5	5	2
MW-34D	5/31/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/23/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/8/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/19/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/22/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-35D	3/18/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/22/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/21/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1/6/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	4/15/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	7/18/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/6/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	12/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/31/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/14/2017	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/14/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/31/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/8/2018	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/22/2019	1.0 U	1.0 U	1.0 U	1 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-46D	5/30/2018	1.0 U	13.7	1.0 U	**29.4**	1.0 U	**73.5**	2.0 U	1.2	1.0 U	1.0 U	1.0 U
	11/7/2018	1.0 U	22.1	1.2	**99.6**	1.0 U	**96.7**	2.0 U	7.7	1.0 U	1.0 U	1.0 U
	5/21/2019	1.0 U	26.1	1.0	**125**	1.0 U	**88.0**	5.0 U	10.2	1.0 U	1.0 U	1.0 U
Confined Patuxent Wells												
MW-30D-413	5/31/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/23/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/8/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/19/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/22/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-36D	5/30/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/23/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	11/8/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/19/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/22/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U

a/ U = not detected above the method detection limit; J = estimated concentration between the reporting limit and method detection limit.
Bolded values indicate an exceedence of the Groundwater Quality Standards
Dashed line marks change from quarterly to semi-annual sampling frequency at the well.
All sample concentrations in micrograms per liter (µg/l)
NS = well not sampled
b/ Wells screened in this portion of the Lower Patapsco aquifer were removed from the monitoring program after the May 2018 sampling event.

ENCLOSURE A – LABORATORY ANALYTICAL REPORTS FOR RESIDENTIAL WELL SAMPLES (1227 OLD CAMP MEADE ROAD)

APRIL 2019

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

WSP Environment & Energy

Kop-Flex, Hanover, VA

31401545.011-02

SGS Job Number: JC85682

Sampling Date: 04/02/19

Report to:

WSP
11190 Sunrise Valley Drive Suite 300
Reston, VA 20190
Eric.Johnson@WSPGroup.com; maria.kaplan@wsp.com

ATTN: Eric Johnson

Total number of pages in report: 40

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Brian McGuire
General Manager

Client Service contact: Rocus Peters 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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SGS North America Inc.

Sample Summary

WSP Environment & Energy

Job No: JC85682

Kop-Flex, Hanover, VA
Project No: 31401545.011-02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
JC85682-1	04/02/19	11:05	MK	04/03/19	DW	Drinking Water	RW-1227OCM-040219-F
JC85682-2	04/02/19	11:10	MK	04/03/19	DW	Drinking Water	RW-1227OCM-040219
JC85682-3	04/02/19	11:10	MK	04/03/19	DW	Drinking Water TB	TB-040219

Summary of Hits

Job Number: JC85682
Account: WSP Environment & Energy
Project: Kop-Flex, Hanover, VA
Collected: 04/02/19

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC85682-1	**RW-1227OCM-040219-F**					
1,1-Dichloroethylene		0.56	0.50	0.19	ug/l	EPA 524.2 REV 4.1
1,1,1-Trichloroethane		0.25 J	0.50	0.22	ug/l	EPA 524.2 REV 4.1
1,4-Dioxane		2.6	0.40	0.095	ug/l	SW846 8260C BY SIM
JC85682-2	**RW-1227OCM-040219**					
1,1-Dichloroethylene		5.1	0.50	0.19	ug/l	EPA 524.2 REV 4.1
1,1,1-Trichloroethane		0.23 J	0.50	0.22	ug/l	EPA 524.2 REV 4.1
1,4-Dioxane		2.4	0.40	0.095	ug/l	SW846 8260C BY SIM
JC85682-3	**TB-040219**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	RW-1227OCM-040219-F		
Lab Sample ID:	JC85682-1	**Date Sampled:**	04/02/19
Matrix:	DW - Drinking Water	**Date Received:**	04/03/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B118874.D	1	04/04/19 21:08	BK	n/a	n/a	V1B5737
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	2.5	ug/l	
78-93-3	2-Butanone	ND		5.0	0.43	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.16	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.12	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.13	ug/l	
75-25-2	Bromoform	ND		0.50	0.27	ug/l	
74-83-9	Bromomethane	ND		0.50	0.18	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.068	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.43	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.057	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND		0.50	0.080	ug/l	
67-66-3	Chloroform	ND		0.50	0.17	ug/l	
74-87-3	Chloromethane	ND		0.50	0.13	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.098	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.075	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	0.56	7.0	0.50	0.19	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.20	1.0	0.14	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.050	0.50	0.15	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.19	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.17	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.14	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.40	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.14	ug/l	

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-1227OCM-040219-F		
Lab Sample ID:	JC85682-1	**Date Sampled:**	04/02/19
Matrix:	DW - Drinking Water	**Date Received:**	04/03/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.14	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.10	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.076	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.13	ug/l	
591-78-6	2-Hexanone	ND		2.0	0.24	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.43	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.11	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	0.22	ug/l	
91-20-3	Naphthalene	ND		0.50	0.28	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.066	ug/l	
100-42-5	Styrene	ND	100	0.50	0.069	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	0.25	200	0.50	0.22	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.19	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.091	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.13	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.055	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.40	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.057	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.23	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.11	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.20	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.19	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.15	ug/l	
	m,p-Xylene	ND		0.50	0.14	ug/l	
95-47-6	o-Xylene	ND		0.50	0.076	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	105%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-1227OCM-040219-F		
Lab Sample ID:	JC85682-1	**Date Sampled:**	04/02/19
Matrix:	DW - Drinking Water	**Date Received:**	04/03/19
Method:	SW846 8260C BY SIM	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A161990.D	1	04/08/19 15:16	RS	n/a	n/a	V3A7011
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	2.6		0.40	0.095	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17647-74-4	1,4-Dioxane-d8	110%		25-195%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-1227OCM-040219		
Lab Sample ID:	JC85682-2	**Date Sampled:**	04/02/19
Matrix:	DW - Drinking Water	**Date Received:**	04/03/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B118875.D	1	04/04/19 21:38	BK	n/a	n/a	V1B5737
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	2.5	ug/l	
78-93-3	2-Butanone	ND		5.0	0.43	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.16	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.12	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.13	ug/l	
75-25-2	Bromoform	ND		0.50	0.27	ug/l	
74-83-9	Bromomethane	ND		0.50	0.18	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.068	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.43	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.057	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND		0.50	0.080	ug/l	
67-66-3	Chloroform	ND		0.50	0.17	ug/l	
74-87-3	Chloromethane	ND		0.50	0.13	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.098	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.075	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	5.1	7.0	0.50	0.19	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.20	1.0	0.14	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.050	0.50	0.15	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.19	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.17	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.14	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.40	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.14	ug/l	

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-1227OCM-040219		
Lab Sample ID:	JC85682-2	**Date Sampled:**	04/02/19
Matrix:	DW - Drinking Water	**Date Received:**	04/03/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.14	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.10	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.076	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.13	ug/l	
591-78-6	2-Hexanone	ND		2.0	0.24	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.43	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.11	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	0.22	ug/l	
91-20-3	Naphthalene	ND		0.50	0.28	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.066	ug/l	
100-42-5	Styrene	ND	100	0.50	0.069	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	0.23	200	0.50	0.22	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.19	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.091	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.13	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.055	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.40	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.057	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.23	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.11	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.20	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.19	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.15	ug/l	
	m,p-Xylene	ND		0.50	0.14	ug/l	
95-47-6	o-Xylene	ND		0.50	0.076	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	105%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-1227OCM-040219		
Lab Sample ID:	JC85682-2	**Date Sampled:**	04/02/19
Matrix:	DW - Drinking Water	**Date Received:**	04/03/19
Method:	SW846 8260C BY SIM	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A161991.D	1	04/08/19 15:45	RS	n/a	n/a	V3A7011
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	2.4		0.40	0.095	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17647-74-4	1,4-Dioxane-d8	101%		25-195%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-040219		
Lab Sample ID:	JC85682-3	**Date Sampled:**	04/02/19
Matrix:	DW - Drinking Water TB	**Date Received:**	04/03/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B118873.D	1	04/04/19 20:37	BK	n/a	n/a	V1B5737
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	2.5	ug/l	
78-93-3	2-Butanone	ND		5.0	0.43	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.16	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.12	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.13	ug/l	
75-25-2	Bromoform	ND		0.50	0.27	ug/l	
74-83-9	Bromomethane	ND		0.50	0.18	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.068	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.43	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.057	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND		0.50	0.080	ug/l	
67-66-3	Chloroform	ND		0.50	0.17	ug/l	
74-87-3	Chloromethane	ND		0.50	0.13	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.098	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.075	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	7.0	0.50	0.19	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.20	1.0	0.14	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.050	0.50	0.15	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.19	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.17	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.14	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.40	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.14	ug/l	

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-040219		
Lab Sample ID:	JC85682-3	**Date Sampled:**	04/02/19
Matrix:	DW - Drinking Water TB	**Date Received:**	04/03/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.14	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.10	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.076	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.13	ug/l	
591-78-6	2-Hexanone	ND		2.0	0.24	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.43	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.11	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	0.22	ug/l	
91-20-3	Naphthalene	ND		0.50	0.28	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.066	ug/l	
100-42-5	Styrene	ND	100	0.50	0.069	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.19	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.091	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.13	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.055	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.40	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.057	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.23	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.11	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.20	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.19	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.15	ug/l	
	m,p-Xylene	ND		0.50	0.14	ug/l	
95-47-6	o-Xylene	ND		0.50	0.076	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	107%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-040219		
Lab Sample ID:	JC85682-3	**Date Sampled:**	04/02/19
Matrix:	DW - Drinking Water TB	**Date Received:**	04/03/19
Method:	SW846 8260C BY SIM	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A161989.D	1	04/08/19 14:47	RS	n/a	n/a	V3A7011
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND		0.40	0.095	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17647-74-4	1,4-Dioxane-d8	111%		25-195%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

DW WTB

CHAIN-OF-CUSTODY RECORD

JC85682

Page 1 of 1

WSP | Parsons Brinckerhoff Office Address	13530 Dulles Technology Dr Ste 300 Herndon
Project Name	KapFlex
WSP | Parsons Brinckerhoff Contact Name	Maria Kaplan
Project Location	Hanover MD
WSP | Parsons Brinckerhoff Contact E-mail	maria.kaplan@wspgroup.com
Project Number & Task	31401545.011-02
WSP | Parsons Brinckerhoff Contact Phone	(703) 709-4500
Sampler(s) Name(s)	Maria Kaplan, Molly Long
Sampler(s) Signature(s)	

Requested Analyses & Preservatives

No. 004533

WSP | PARSONS BRINCKERHOFF

Laboratory Name & Location	SGS Accutest
Laboratory Project Manager	Rocus Peters
Requested Turn-Around-Time	[X] Standard [ ] 24 HR [ ] 48 HR [ ] 72 HR [ ] ___ HR

	Sample Identification	Matrix	Collection Start Date	Collection Start Time	Collection End Date	Collection End Time	Number of Containers	VOCs (524)	1,4 Dioxane (8260SIM)	Sample Comments
1	RW-12270CM-040219	DW	4/2/19			1105	6	X	X	
2	RW-12270CM-040219	DW	4/2/19			1110	6	X	X	
3	TB-040219	DW					4	X	X	Trip Blank

V193

INITIAL ASESSMENT

LABEL VERIFICATION

Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Shipment Method	Tracking Number(s)
	4/2/19	1500	Fedex	4/2/19			8127 8179 4230
Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Number of Packages	Custody Seal Number(s)
FX	4/3/19	10:20		4/3/19	1000		0806 3.4

*Use stop time/date for composite and/or air samples; use only start time/date for all other samples.

Matrix: AQ = Aqueous, S = Soil, SE = Sediment, A = Air, W = Wipe, B = Bulk, O = Other (detail in comments)

SGS Sample Receipt Summary

Job Number: JC85682 **Client:** _____ **Project:** _____

Date / Time Received: 4/3/2019 10:00:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.4);

Cooler Temps (Corrected) °C: Cooler 1: (2.4);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 206717 pH 12+: 208717 Other: (Specify) _____ _____

Comments

SM089-03
Rev. Date 12/7/17

JC85682: Chain of Custody
Page 2 of 2

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5737-MB	1B118856.D	1	04/04/19	BK	n/a	n/a	V1B5737

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC85682-1, JC85682-2, JC85682-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.12	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.068	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.43	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.057	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.098	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.075	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.14	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.15	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.17	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.40	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.14	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.14	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.10	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	

Method Blank Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5737-MB	1B118856.D	1	04/04/19	BK	n/a	n/a	V1B5737

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC85682-1, JC85682-2, JC85682-3

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.13	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.43	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.11	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
91-20-3	Naphthalene	ND	0.50	0.28	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.066	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.091	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.13	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.055	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.40	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.057	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.19	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries		Limits
2199-69-1	1,2-Dichlorobenzene-d4	97%	70-130%
460-00-4	4-Bromofluorobenzene	94%	70-130%

Method Blank Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5737-MB	1B118856.D	1	04/04/19	BK	n/a	n/a	V1B5737

The QC reported here applies to the following samples: **Method:**

JC85682-1, JC85682-2, JC85682-3

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A7011-MB	3A161979.D	1	04/08/19	RS	n/a	n/a	V3A7011

The QC reported here applies to the following samples: **Method:** SW846 8260C BY SIM

JC85682-1, JC85682-2, JC85682-3

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.095	ug/l	

CAS No.	Surrogate Recoveries		Limits
17647-74-4	1,4-Dioxane-d8	81%	25-195%

Blank Spike Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5737-BS	1B118855.D	1	04/04/19	BK	n/a	n/a	V1B5737

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC85682-1, JC85682-2, JC85682-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	20	21.1	106	70-130
78-93-3	2-Butanone	20	21.4	107	70-130
71-43-2	Benzene	5	5.2	104	70-130
108-86-1	Bromobenzene	5	5.9	118	70-130
74-97-5	Bromochloromethane	5	5.3	106	70-130
75-27-4	Bromodichloromethane	5	5.4	108	70-130
75-25-2	Bromoform	5	5.4	108	70-130
74-83-9	Bromomethane	5	4.5	90	70-130
104-51-8	n-Butylbenzene	5	5.5	110	70-130
135-98-8	sec-Butylbenzene	5	5.6	112	70-130
98-06-6	tert-Butylbenzene	5	5.6	112	70-130
75-15-0	Carbon disulfide	5	4.7	94	70-130
108-90-7	Chlorobenzene	5	5.7	114	70-130
75-00-3	Chloroethane	5	5.3	106	70-130
67-66-3	Chloroform	5	5.1	102	70-130
74-87-3	Chloromethane	5	4.5	90	70-130
95-49-8	o-Chlorotoluene	5	5.6	112	70-130
106-43-4	p-Chlorotoluene	5	5.8	116	70-130
56-23-5	Carbon tetrachloride	5	5.4	108	70-130
75-34-3	1,1-Dichloroethane	5	5.0	100	70-130
75-35-4	1,1-Dichloroethylene	5	4.7	94	70-130
563-58-6	1,1-Dichloropropene	5	5.0	100	70-130
96-12-8	1,2-Dibromo-3-chloropropane	5	5.2	104	70-130
106-93-4	1,2-Dibromoethane	5	5.7	114	70-130
107-06-2	1,2-Dichloroethane	5	5.4	108	70-130
78-87-5	1,2-Dichloropropane	5	5.4	108	70-130
142-28-9	1,3-Dichloropropane	5	5.6	112	70-130
594-20-7	2,2-Dichloropropane	5	6.0	120	70-130
124-48-1	Dibromochloromethane	5	5.6	112	70-130
74-95-3	Dibromomethane	5	5.4	108	70-130
75-71-8	Dichlorodifluoromethane	5	5.0	100	70-130
541-73-1	m-Dichlorobenzene	5	5.7	114	70-130
95-50-1	o-Dichlorobenzene	5	5.8	116	70-130
106-46-7	p-Dichlorobenzene	5	5.8	116	70-130
156-60-5	trans-1,2-Dichloroethylene	5	4.9	98	70-130
156-59-2	cis-1,2-Dichloroethylene	5	5.0	100	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5737-BS	1B118855.D	1	04/04/19	BK	n/a	n/a	V1B5737

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC85682-1, JC85682-2, JC85682-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	5	5.5	110	70-130
10061-02-6	trans-1,3-Dichloropropene	5	5.5	110	70-130
100-41-4	Ethylbenzene	5	5.7	114	70-130
87-68-3	Hexachlorobutadiene	5	5.9	118	70-130
591-78-6	2-Hexanone	20	22.6	113	70-130
98-82-8	Isopropylbenzene	5	5.6	112	70-130
99-87-6	p-Isopropyltoluene	5	5.6	112	70-130
75-09-2	Methylene chloride	5	4.9	98	70-130
1634-04-4	Methyl Tert Butyl Ether	5	5.1	102	70-130
108-10-1	4-Methyl-2-pentanone	20	22.5	113	70-130
91-20-3	Naphthalene	5	5.4	108	70-130
103-65-1	n-Propylbenzene	5	5.6	112	70-130
100-42-5	Styrene	5	5.4	108	70-130
630-20-6	1,1,1,2-Tetrachloroethane	5	5.8	116	70-130
71-55-6	1,1,1-Trichloroethane	5	5.3	106	70-130
79-34-5	1,1,2,2-Tetrachloroethane	5	5.6	112	70-130
79-00-5	1,1,2-Trichloroethane	5	5.6	112	70-130
87-61-6	1,2,3-Trichlorobenzene	5	5.5	110	70-130
96-18-4	1,2,3-Trichloropropane	5	5.7	114	70-130
120-82-1	1,2,4-Trichlorobenzene	5	5.5	110	70-130
95-63-6	1,2,4-Trimethylbenzene	5	5.7	114	70-130
108-67-8	1,3,5-Trimethylbenzene	5	5.7	114	70-130
127-18-4	Tetrachloroethylene	5	5.8	116	70-130
108-88-3	Toluene	5	5.6	112	70-130
79-01-6	Trichloroethylene	5	5.5	110	70-130
75-69-4	Trichlorofluoromethane	5	5.3	106	70-130
75-01-4	Vinyl chloride	5	4.3	86	70-130
	m,p-Xylene	10	11.3	113	70-130
95-47-6	o-Xylene	5	5.7	114	70-130
1330-20-7	Xylenes (total)	15	17.1	114	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2199-69-1	1,2-Dichlorobenzene-d4	108%	70-130%
460-00-4	4-Bromofluorobenzene	106%	70-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A7011-BS	3A161977.D	1	04/08/19	RS	n/a	n/a	V3A7011
V3A7011-BSD	3A161978.D	1	04/08/19	RS	n/a	n/a	V3A7011

The QC reported here applies to the following samples: **Method:** SW846 8260C BY SIM

JC85682-1, JC85682-2, JC85682-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
123-91-1	1,4-Dioxane	20	18.7	94	17.2	86	8	48-137/32

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
17647-74-4	1,4-Dioxane-d8	92%	82%	25-195%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC85484-19MS	1B118866.D	1	04/04/19	BK	n/a	n/a	V1B5737
JC85484-19 [a]	1B118860.D	1	04/04/19	BK	n/a	n/a	V1B5737

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC85682-1, JC85682-2, JC85682-3

CAS No.	Compound	JC85484-19 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
67-64-1	Acetone	7.3		20	26.3	95	41-142
78-93-3	2-Butanone	ND		20	21.4	107	55-129
71-43-2	Benzene	ND		5	4.2	84	53-138
108-86-1	Bromobenzene	ND		5	4.8	96	54-138
74-97-5	Bromochloromethane	ND		5	4.4	88	55-140
75-27-4	Bromodichloromethane	ND		5	4.6	92	57-147
75-25-2	Bromoform	ND		5	4.9	98	47-137
74-83-9	Bromomethane	ND		5	4.4	88	40-162
104-51-8	n-Butylbenzene	ND		5	4.3	86	45-144
135-98-8	sec-Butylbenzene	ND		5	4.5	90	46-145
98-06-6	tert-Butylbenzene	ND		5	4.5	90	48-141
75-15-0	Carbon disulfide	ND		5	4.0	80	35-127
108-90-7	Chlorobenzene	ND		5	4.7	94	54-135
75-00-3	Chloroethane	ND		5	4.6	92	38-153
67-66-3	Chloroform	ND		5	4.1	82	57-151
74-87-3	Chloromethane	ND		5	4.5	90	39-165
95-49-8	o-Chlorotoluene	ND		5	4.7	94	55-142
106-43-4	p-Chlorotoluene	ND		5	4.7	94	55-139
56-23-5	Carbon tetrachloride	ND		5	4.1	82	49-170
75-34-3	1,1-Dichloroethane	ND		5	4.0	80	55-149
75-35-4	1,1-Dichloroethylene	ND		5	3.8	76	42-142
563-58-6	1,1-Dichloropropene	ND		5	4.1	82	46-151
96-12-8	1,2-Dibromo-3-chloropropane	ND		5	5.4	108	48-141
106-93-4	1,2-Dibromoethane	ND		5	5.1	102	57-135
107-06-2	1,2-Dichloroethane	ND		5	4.5	90	59-166
78-87-5	1,2-Dichloropropane	ND		5	4.5	90	53-142
142-28-9	1,3-Dichloropropane	ND		5	5.1	102	58-143
594-20-7	2,2-Dichloropropane	ND		5	4.8	96	38-165
124-48-1	Dibromochloromethane	ND		5	4.8	96	55-138
74-95-3	Dibromomethane	ND		5	4.6	92	61-144
75-71-8	Dichlorodifluoromethane	ND		5	5.1	102	23-172
541-73-1	m-Dichlorobenzene	ND		5	4.7	94	53-138
95-50-1	o-Dichlorobenzene	ND		5	5.0	100	54-140
106-46-7	p-Dichlorobenzene	ND		5	4.8	96	53-137
156-60-5	trans-1,2-Dichloroethylene	ND		5	4.0	80	47-148
156-59-2	cis-1,2-Dichloroethylene	ND		5	4.2	84	51-146

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC85484-19MS	1B118866.D	1	04/04/19	BK	n/a	n/a	V1B5737
JC85484-19 [a]	1B118860.D	1	04/04/19	BK	n/a	n/a	V1B5737

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC85682-1, JC85682-2, JC85682-3

CAS No.	Compound	JC85484-19 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
10061-01-5	cis-1,3-Dichloropropene	ND		5	4.4	88	51-136
10061-02-6	trans-1,3-Dichloropropene	ND		5	4.5	90	54-142
100-41-4	Ethylbenzene	ND		5	4.6	92	51-138
87-68-3	Hexachlorobutadiene	ND		5	4.7	94	40-154
591-78-6	2-Hexanone	ND		20	23.6	118	53-128
98-82-8	Isopropylbenzene	ND		5	4.5	90	49-139
99-87-6	p-Isopropyltoluene	ND		5	4.4	88	45-141
75-09-2	Methylene chloride	ND		5	4.0	80	54-137
1634-04-4	Methyl Tert Butyl Ether	ND		5	4.5	90	53-143
108-10-1	4-Methyl-2-pentanone	ND		20	23.1	116	58-127
91-20-3	Naphthalene	ND		5	5.4	108	44-140
103-65-1	n-Propylbenzene	ND		5	4.5	90	50-142
100-42-5	Styrene	ND		5	4.5	90	23-130
630-20-6	1,1,1,2-Tetrachloroethane	ND		5	4.9	98	57-144
71-55-6	1,1,1-Trichloroethane	ND		5	4.2	84	52-164
79-34-5	1,1,2,2-Tetrachloroethane	ND		5	5.5	110	58-138
79-00-5	1,1,2-Trichloroethane	ND		5	5.0	100	59-139
87-61-6	1,2,3-Trichlorobenzene	ND		5	5.1	102	47-141
96-18-4	1,2,3-Trichloropropane	ND		5	5.6	112	56-148
120-82-1	1,2,4-Trichlorobenzene	ND		5	4.9	98	46-137
95-63-6	1,2,4-Trimethylbenzene	ND		5	4.6	92	41-138
108-67-8	1,3,5-Trimethylbenzene	ND		5	4.5	90	45-138
127-18-4	Tetrachloroethylene	ND		5	4.6	92	45-145
108-88-3	Toluene	ND		5	4.5	90	52-134
79-01-6	Trichloroethylene	ND		5	4.4	88	54-143
75-69-4	Trichlorofluoromethane	ND		5	5.3	106	36-167
75-01-4	Vinyl chloride	ND		5	4.4	88	35-162
	m,p-Xylene	ND		10	9.1	91	49-135
95-47-6	o-Xylene	ND		5	4.7	94	49-134
1330-20-7	Xylenes (total)	ND		15	13.8	92	50-134

CAS No.	Surrogate Recoveries	MS	JC85484-19	Limits
2199-69-1	1,2-Dichlorobenzene-d4	109%	95%	70-130%
460-00-4	4-Bromofluorobenzene	103%	90%	70-130%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC85484-19MS	1B118866.D	1	04/04/19	BK	n/a	n/a	V1B5737
JC85484-19 [a]	1B118860.D	1	04/04/19	BK	n/a	n/a	V1B5737

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC85682-1, JC85682-2, JC85682-3

(a) EPA 524.2 is not a certified method for non-potable water samples.

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC85817-1MS	3A161988.D	1	04/08/19	RS	n/a	n/a	V3A7011
JC85817-1	3A161980.D	1	04/08/19	RS	n/a	n/a	V3A7011

The QC reported here applies to the following samples: **Method:** SW846 8260C BY SIM

JC85682-1, JC85682-2, JC85682-3

CAS No.	Compound	JC85817-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
123-91-1	1,4-Dioxane	ND		20	22.9	115	28-162

CAS No.	Surrogate Recoveries	MS	JC85817-1	Limits
17647-74-4	1,4-Dioxane-d8	118%	83%	25-195%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC85484-10DUP	1B118864.D	1	04/04/19	BK	n/a	n/a	V1B5737
JC85484-10 [a]	1B118859.D	1	04/04/19	BK	n/a	n/a	V1B5737

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC85682-1, JC85682-2, JC85682-3

CAS No.	Compound	JC85484-10 ug/l	Q	DUP ug/l	Q	RPD	Limits
67-64-1	Acetone	2.6	J	ND		200* [b]	10
78-93-3	2-Butanone	ND		ND		nc	12
71-43-2	Benzene	ND		ND		nc	10
108-86-1	Bromobenzene	ND		ND		nc	10
74-97-5	Bromochloromethane	ND		ND		nc	10
75-27-4	Bromodichloromethane	ND		ND		nc	10
75-25-2	Bromoform	ND		ND		nc	10
74-83-9	Bromomethane	ND		ND		nc	10
104-51-8	n-Butylbenzene	ND		ND		nc	10
135-98-8	sec-Butylbenzene	ND		ND		nc	10
98-06-6	tert-Butylbenzene	ND		ND		nc	10
75-15-0	Carbon disulfide	ND		ND		nc	19
108-90-7	Chlorobenzene	ND		ND		nc	10
75-00-3	Chloroethane	ND		ND		nc	10
67-66-3	Chloroform	ND		ND		nc	12
74-87-3	Chloromethane	ND		ND		nc	10
95-49-8	o-Chlorotoluene	ND		ND		nc	10
106-43-4	p-Chlorotoluene	ND		ND		nc	10
56-23-5	Carbon tetrachloride	ND		ND		nc	10
75-34-3	1,1-Dichloroethane	ND		ND		nc	10
75-35-4	1,1-Dichloroethylene	ND		ND		nc	10
563-58-6	1,1-Dichloropropene	ND		ND		nc	10
96-12-8	1,2-Dibromo-3-chloropropane	ND		ND		nc	10
106-93-4	1,2-Dibromoethane	ND		ND		nc	10
107-06-2	1,2-Dichloroethane	ND		ND		nc	10
78-87-5	1,2-Dichloropropane	ND		ND		nc	10
142-28-9	1,3-Dichloropropane	ND		ND		nc	10
594-20-7	2,2-Dichloropropane	ND		ND		nc	10
124-48-1	Dibromochloromethane	ND		ND		nc	10
74-95-3	Dibromomethane	ND		ND		nc	10
75-71-8	Dichlorodifluoromethane	ND		ND		nc	10
541-73-1	m-Dichlorobenzene	ND		ND		nc	10
95-50-1	o-Dichlorobenzene	ND		ND		nc	10
106-46-7	p-Dichlorobenzene	ND		ND		nc	10
156-60-5	trans-1,2-Dichloroethylene	ND		ND		nc	10
156-59-2	cis-1,2-Dichloroethylene	ND		ND		nc	10

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC85484-10DUP	1B118864.D	1	04/04/19	BK	n/a	n/a	V1B5737
JC85484-10 [a]	1B118859.D	1	04/04/19	BK	n/a	n/a	V1B5737

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC85682-1, JC85682-2, JC85682-3

CAS No.	Compound	JC85484-10 ug/l	Q	DUP ug/l	Q	RPD	Limits
10061-01-5	cis-1,3-Dichloropropene	ND		ND		nc	10
10061-02-6	trans-1,3-Dichloropropene	ND		ND		nc	10
100-41-4	Ethylbenzene	ND		ND		nc	10
87-68-3	Hexachlorobutadiene	ND		ND		nc	10
591-78-6	2-Hexanone	ND		ND		nc	10
98-82-8	Isopropylbenzene	ND		ND		nc	10
99-87-6	p-Isopropyltoluene	ND		ND		nc	10
75-09-2	Methylene chloride	ND		ND		nc	10
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	10
108-10-1	4-Methyl-2-pentanone	ND		ND		nc	10
91-20-3	Naphthalene	ND		ND		nc	10
103-65-1	n-Propylbenzene	ND		ND		nc	10
100-42-5	Styrene	ND		ND		nc	10
630-20-6	1,1,1,2-Tetrachloroethane	ND		ND		nc	10
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	10
79-34-5	1,1,2,2-Tetrachloroethane	ND		ND		nc	10
79-00-5	1,1,2-Trichloroethane	ND		ND		nc	10
87-61-6	1,2,3-Trichlorobenzene	ND		ND		nc	10
96-18-4	1,2,3-Trichloropropane	ND		ND		nc	10
120-82-1	1,2,4-Trichlorobenzene	ND		ND		nc	10
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	10
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	10
127-18-4	Tetrachloroethylene	ND		ND		nc	10
108-88-3	Toluene	ND		ND		nc	10
79-01-6	Trichloroethylene	ND		ND		nc	10
75-69-4	Trichlorofluoromethane	ND		ND		nc	10
75-01-4	Vinyl chloride	ND		ND		nc	10
	m,p-Xylene	ND		ND		nc	10
95-47-6	o-Xylene	ND		ND		nc	10
1330-20-7	Xylenes (total)	ND		ND		nc	10

CAS No.	Surrogate Recoveries	DUP	JC85484-10	Limits
2199-69-1	1,2-Dichlorobenzene-d4	102%	97%	70-130%
460-00-4	4-Bromofluorobenzene	96%	91%	70-130%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC85484-10DUP	1B118864.D	1	04/04/19	BK	n/a	n/a	V1B5737
JC85484-10 [a]	1B118859.D	1	04/04/19	BK	n/a	n/a	V1B5737

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC85682-1, JC85682-2, JC85682-3

(a) EPA 524.2 is not a certified method for non-potable water samples.
(b) RPD acceptable due to low DUP and sample concentrations.

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC85817-2DUP	3A161987.D	1	04/08/19	RS	n/a	n/a	V3A7011
JC85817-2	3A161981.D	1	04/08/19	RS	n/a	n/a	V3A7011

The QC reported here applies to the following samples: **Method:** SW846 8260C BY SIM

JC85682-1, JC85682-2, JC85682-3

CAS No.	Compound	JC85817-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
123-91-1	1,4-Dioxane	26.3		27.2		3	48

CAS No.	Surrogate Recoveries	DUP	JC85817-2	Limits
17647-74-4	1,4-Dioxane-d8	158%	151%	25-195%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample:	V1B5728-BFB	**Injection Date:**	03/23/19
Lab File ID:	1B118637.D	**Injection Time:**	14:48
Instrument ID:	GCMS1B		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.99 - 40.0% of mass 95	4448	21.3		Pass
75	30.0 - 80.0% of mass 95	10345	49.6		Pass
95	Base peak, 100% relative abundance	20843	100.0		Pass
96	5.0 - 9.0% of mass 95	1430	6.86		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	14640	70.2		Pass
175	5.0 - 9.0% of mass 174	1045	5.01	(7.14) [a]	Pass
176	95.0 - 101.0% of mass 174	14253	68.4	(97.4) [a]	Pass
177	5.0 - 9.0% of mass 176	990	4.75	(6.95) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5728-IC5728	1B118638.D	03/23/19	15:32	00:44	Initial cal 0.2
V1B5728-IC5728	1B118639.D	03/23/19	16:03	01:15	Initial cal 0.5
V1B5728-IC5728	1B118640.D	03/23/19	16:34	01:46	Initial cal 1
V1B5728-IC5728	1B118641.D	03/23/19	17:05	02:17	Initial cal 2
V1B5728-IC5728	1B118642.D	03/23/19	17:36	02:48	Initial cal 5
V1B5728-ICC5728	1B118643.D	03/23/19	18:08	03:20	Initial cal 10
V1B5728-IC5728	1B118644.D	03/23/19	18:39	03:51	Initial cal 20
V1B5728-IC5728	1B118645.D	03/23/19	19:10	04:22	Initial cal 40
V1B5728-IC5728	1B118646.D	03/23/19	19:41	04:53	Initial cal 80
V1B5728-ICV5728	1B118649.D	03/23/19	21:13	06:25	Initial cal verification 10

Instrument Performance Check (BFB)

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample:	V1B5728-BFB2	**Injection Date:**	03/25/19
Lab File ID:	1B118654.D	**Injection Time:**	11:11
Instrument ID:	GCMS1B		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.99 - 40.0% of mass 95	4350	20.2		Pass
75	30.0 - 80.0% of mass 95	10757	49.9		Pass
95	Base peak, 100% relative abundance	21568	100.0		Pass
96	5.0 - 9.0% of mass 95	1490	6.91		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	14837	68.8		Pass
175	5.0 - 9.0% of mass 174	1021	4.73	(6.88) [a]	Pass
176	95.0 - 101.0% of mass 174	14355	66.6	(96.8) [a]	Pass
177	5.0 - 9.0% of mass 176	911	4.22	(6.35) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5728-ICV5728	1B118655.D	03/25/19	11:49	00:38	Initial cal verification 10

Instrument Performance Check (BFB)

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample:	V1B5737-BFB	**Injection Date:**	04/04/19
Lab File ID:	1B118854.D	**Injection Time:**	10:40
Instrument ID:	GCMS1B		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.99 - 40.0% of mass 95	3824	19.4		Pass
75	30.0 - 80.0% of mass 95	9589	48.7		Pass
95	Base peak, 100% relative abundance	19693	100.0		Pass
96	5.0 - 9.0% of mass 95	1313	6.67		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	13091	66.5		Pass
175	5.0 - 9.0% of mass 174	950	4.82	(7.26) [a]	Pass
176	95.0 - 101.0% of mass 174	12528	63.6	(95.7) [a]	Pass
177	5.0 - 9.0% of mass 176	790	4.01	(6.31) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5737-CC5728	1B118855.D	04/04/19	11:22	00:42	Continuing cal 5
V1B5737-BS	1B118855.D	04/04/19	11:22	00:42	Blank Spike
V1B5737-MB	1B118856.D	04/04/19	11:53	01:13	Method Blank
ZZZZZZ	1B118857.D	04/04/19	12:24	01:44	(unrelated sample)
JC85484-9	1B118858.D	04/04/19	12:55	02:15	(used for QC only; not part of job JC85682)
JC85484-10	1B118859.D	04/04/19	13:26	02:46	(used for QC only; not part of job JC85682)
JC85484-19	1B118860.D	04/04/19	13:56	03:16	(used for QC only; not part of job JC85682)
ZZZZZZ	1B118861.D	04/04/19	14:28	03:48	(unrelated sample)
JC85484-10DUP	1B118864.D	04/04/19	16:00	05:20	Duplicate
ZZZZZZ	1B118865.D	04/04/19	16:31	05:51	(unrelated sample)
JC85484-19MS	1B118866.D	04/04/19	17:02	06:22	Matrix Spike
ZZZZZZ	1B118867.D	04/04/19	17:32	06:52	(unrelated sample)
ZZZZZZ	1B118868.D	04/04/19	18:03	07:23	(unrelated sample)
JC85682-3	1B118873.D	04/04/19	20:37	09:57	TB-040219
JC85682-1	1B118874.D	04/04/19	21:08	10:28	RW-1227OCM-040219-F
JC85682-2	1B118875.D	04/04/19	21:38	10:58	RW-1227OCM-040219

Instrument Performance Check (BFB)

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample:	V3A6923-BFB	**Injection Date:**	07/18/18
Lab File ID:	3A160428.D	**Injection Time:**	16:55
Instrument ID:	GCMS3A		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	25408	20.8		Pass
75	30.0 - 60.0% of mass 95	62880	51.6		Pass
95	Base peak, 100% relative abundance	121864	100.0		Pass
96	5.0 - 9.0% of mass 95	8101	6.65		Pass
173	Less than 2.0% of mass 174	826	0.68	(0.81) [a]	Pass
174	50.0 - 120.0% of mass 95	102317	84.0		Pass
175	5.0 - 9.0% of mass 174	8168	6.70	(7.98) [a]	Pass
176	95.0 - 101.0% of mass 174	100370	82.4	(98.1) [a]	Pass
177	5.0 - 9.0% of mass 176	6691	5.49	(6.67) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A6923-IC6923	3A160429.D	07/18/18	17:26	00:31	Initial cal 0.25
V3A6923-IC6923	3A160430.D	07/18/18	17:52	00:57	Initial cal 0.4
V3A6923-IC6923	3A160431.D	07/18/18	18:18	01:23	Initial cal 1
V3A6923-IC6923	3A160432.D	07/18/18	18:43	01:48	Initial cal 2
V3A6923-IC6923	3A160433.D	07/18/18	19:09	02:14	Initial cal 5
V3A6923-ICC6923	3A160434.D	07/18/18	19:35	02:40	Initial cal 20
V3A6923-IC6923	3A160435.D	07/18/18	20:00	03:05	Initial cal 50
V3A6923-IC6923	3A160436.D	07/18/18	20:26	03:31	Initial cal 100
V3A6923-IC6923	3A160437.D	07/18/18	20:52	03:57	Initial cal 200
V3A6923-ICV6923	3A160443.D	07/18/18	23:25	06:30	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample:	V3A7011-BFB	**Injection Date:**	04/08/19
Lab File ID:	3A161975.D	**Injection Time:**	07:45
Instrument ID:	GCMS3A		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	6724	21.2		Pass
75	30.0 - 60.0% of mass 95	16153	51.0		Pass
95	Base peak, 100% relative abundance	31693	100.0		Pass
96	5.0 - 9.0% of mass 95	2037	6.43		Pass
173	Less than 2.0% of mass 174	134	0.42	(0.59) [a]	Pass
174	50.0 - 120.0% of mass 95	22560	71.2		Pass
175	5.0 - 9.0% of mass 174	1830	5.77	(8.11) [a]	Pass
176	95.0 - 101.0% of mass 174	22322	70.4	(98.9) [a]	Pass
177	5.0 - 9.0% of mass 176	1435	4.53	(6.43) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A7011-CC6923	3A161976.D	04/08/19	08:14	00:29	Continuing cal 5
V3A7011-BS	3A161977.D	04/08/19	08:45	01:00	Blank Spike
V3A7011-BSD	3A161978.D	04/08/19	09:13	01:28	Blank Spike Duplicate
V3A7011-MB	3A161979.D	04/08/19	09:42	01:57	Method Blank
JC85817-1	3A161980.D	04/08/19	10:27	02:42	(used for QC only; not part of job JC85682)
JC85817-2	3A161981.D	04/08/19	10:57	03:12	(used for QC only; not part of job JC85682)
ZZZZZZ	3A161982.D	04/08/19	11:25	03:40	(unrelated sample)
ZZZZZZ	3A161983.D	04/08/19	11:54	04:09	(unrelated sample)
ZZZZZZ	3A161984.D	04/08/19	12:23	04:38	(unrelated sample)
ZZZZZZ	3A161985.D	04/08/19	12:51	05:06	(unrelated sample)
ZZZZZZ	3A161986.D	04/08/19	13:20	05:35	(unrelated sample)
JC85817-2DUP	3A161987.D	04/08/19	13:48	06:03	Duplicate
JC85817-1MS	3A161988.D	04/08/19	14:18	06:33	Matrix Spike
JC85682-3	3A161989.D	04/08/19	14:47	07:02	TB-040219
JC85682-1	3A161990.D	04/08/19	15:16	07:31	RW-1227OCM-040219-F
JC85682-2	3A161991.D	04/08/19	15:45	08:00	RW-1227OCM-040219
ZZZZZZ	3A161992.D	04/08/19	16:14	08:29	(unrelated sample)
ZZZZZZ	3A161993.D	04/08/19	16:43	08:58	(unrelated sample)
ZZZZZZ	3A161994.D	04/08/19	17:11	09:26	(unrelated sample)
ZZZZZZ	3A161996.D	04/08/19	18:09	10:24	(unrelated sample)
ZZZZZZ	3A161997.D	04/08/19	18:38	10:53	(unrelated sample)
ZZZZZZ	3A161998.D	04/08/19	19:06	11:21	(unrelated sample)

Surrogate Recovery Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Method: EPA 524.2 REV 4.1 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2
JC85682-1	1B118874.D	105	96
JC85682-2	1B118875.D	105	96
JC85682-3	1B118873.D	107	100
JC85484-10DUP	1B118864.D	102	96
JC85484-19MS	1B118866.D	109	103
V1B5737-BS	1B118855.D	108	106
V1B5737-MB	1B118856.D	97	94

Surrogate Compounds	Recovery Limits
S1 = 1,2-Dichlorobenzene-d4	70-130%
S2 = 4-Bromofluorobenzene	70-130%

Surrogate Recovery Summary

Job Number: JC85682
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Method: SW846 8260C BY SIM **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
JC85682-1	3A161990.D	110
JC85682-2	3A161991.D	101
JC85682-3	3A161989.D	111
JC85817-1MS	3A161988.D	118
JC85817-2DUP	3A161987.D	158
V3A7011-BS	3A161977.D	92
V3A7011-BSD	3A161978.D	82
V3A7011-MB	3A161979.D	81

Surrogate Compounds	Recovery Limits
S1 = 1,4-Dioxane-d8	25-195%

MAY 2019

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

WSP Environment & Energy

Kop-Flex, Hanover, VA

31401545.001

SGS Job Number: JC88720

Sampling Date: 05/21/19

Report to:

WSP
11190 Sunrise Valley Drive Suite 300
Reston, VA 20190
Eric.Johnson@WSPGroup.com; maria.kaplan@wsp.com

ATTN: Eric Johnson

Total number of pages in report: 53

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Brian McGuire
General Manager

Client Service contact: Rocus Peters 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

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SGS North America Inc.

Sample Summary

WSP Environment & Energy

Job No: JC88720

Kop-Flex, Hanover, VA
Project No: 31401545.001

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC88720-1	05/21/19	14:25	CC	05/24/19	AQ	Water	RW-12270CM-052119
JC88720-2	05/21/19	14:20	CC	05/24/19	AQ	Water	RW-12270CM-052119-F
JC88720-3	05/21/19	14:20	CC	05/24/19	AQ	Trip Blank Water	TRIP BLANK

Summary of Hits

Job Number: JC88720
Account: WSP Environment & Energy
Project: Kop-Flex, Hanover, VA
Collected: 05/21/19

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC88720-1	**RW-12270CM-052119**					
Acetone [a]		3.1 J	5.0	2.5	ug/l	EPA 524.2 REV 4.1
1,1-Dichloroethylene [a]		6.4	0.50	0.19	ug/l	EPA 524.2 REV 4.1
Methylene chloride [a]		4.0	0.50	0.37	ug/l	EPA 524.2 REV 4.1
1,1,1-Trichloroethane [a]		0.26 J	0.50	0.22	ug/l	EPA 524.2 REV 4.1
1,4-Dioxane		1.6	0.40	0.095	ug/l	SW846 8260C BY SIM
JC88720-2	**RW-12270CM-052119-F**					
Acetone [a]		2.5 J	5.0	2.5	ug/l	EPA 524.2 REV 4.1
1,1-Dichloroethylene [a]		0.76	0.50	0.19	ug/l	EPA 524.2 REV 4.1
1,1,1-Trichloroethane [a]		0.23 J	0.50	0.22	ug/l	EPA 524.2 REV 4.1
1,4-Dioxane		1.7	0.40	0.095	ug/l	SW846 8260C BY SIM
JC88720-3	**TRIP BLANK**					
Acetone [a]		5.8	5.0	2.5	ug/l	EPA 524.2 REV 4.1
Methylene chloride [a]		1.0	0.50	0.37	ug/l	EPA 524.2 REV 4.1
Toluene [a]		0.14 J	0.50	0.11	ug/l	EPA 524.2 REV 4.1

(a) EPA 524.2 is not a certified method for non-potable water samples.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	RW-12270CM-052119		
Lab Sample ID:	JC88720-1	**Date Sampled:**	05/21/19
Matrix:	AQ - Water	**Date Received:**	05/24/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	4D94349.D	1	05/29/19 13:02	RS	n/a	n/a	V4D4162
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	3.1	5.0	2.5	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.12	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.068	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.43	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.057	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.098	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.075	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	6.4	0.50	0.19	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.14	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.15	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.17	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.40	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.14	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-12270CM-052119		
Lab Sample ID:	JC88720-1	**Date Sampled:**	05/21/19
Matrix:	AQ - Water	**Date Received:**	05/24/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.14	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.10	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.13	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.43	ug/l	
75-09-2	Methylene chloride	4.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.11	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
91-20-3	Naphthalene	ND	0.50	0.28	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.066	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	0.26	0.50	0.22	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.091	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.13	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.055	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.40	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.057	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.19	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	88%		70-130%
460-00-4	4-Bromofluorobenzene	81%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-12270CM-052119		
Lab Sample ID:	JC88720-1	**Date Sampled:**	05/21/19
Matrix:	AQ - Water	**Date Received:**	05/24/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-12270CM-052119		
Lab Sample ID:	JC88720-1	**Date Sampled:**	05/21/19
Matrix:	AQ - Water	**Date Received:**	05/24/19
Method:	SW846 8260C BY SIM	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A162332.D	1	05/29/19 12:22	RS	n/a	n/a	V3A7029
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	1.6	0.40	0.095	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17647-74-4	1,4-Dioxane-d8	80%		25-195%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-12270CM-052119-F		
Lab Sample ID:	JC88720-2	**Date Sampled:**	05/21/19
Matrix:	AQ - Water	**Date Received:**	05/24/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	1B119713.D	1	05/31/19 12:56	BK	n/a	n/a	V1B5781
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	2.5	5.0	2.5	ug/l	J
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.12	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.068	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.43	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.057	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.098	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.075	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	0.76	0.50	0.19	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.14	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.15	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.17	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.40	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.14	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-12270CM-052119-F		
Lab Sample ID:	JC88720-2	**Date Sampled:**	05/21/19
Matrix:	AQ - Water	**Date Received:**	05/24/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.14	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.10	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.13	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.43	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.11	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
91-20-3	Naphthalene	ND	0.50	0.28	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.066	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	0.23	0.50	0.22	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.091	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.13	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.055	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.40	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.057	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.19	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	93%		70-130%
460-00-4	4-Bromofluorobenzene	91%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-12270CM-052119-F		
Lab Sample ID:	JC88720-2	**Date Sampled:**	05/21/19
Matrix:	AQ - Water	**Date Received:**	05/24/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-12270CM-052119-F		
Lab Sample ID:	JC88720-2	**Date Sampled:**	05/21/19
Matrix:	AQ - Water	**Date Received:**	05/24/19
Method:	SW846 8260C BY SIM	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A162333.D	1	05/29/19 12:51	RS	n/a	n/a	V3A7029
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	1.7	0.40	0.095	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17647-74-4	1,4-Dioxane-d8	81%		25-195%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	JC88720-3	**Date Sampled:**	05/21/19
Matrix:	AQ - Trip Blank Water	**Date Received:**	05/24/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	4D94357.D	1	05/29/19 17:21	RS	n/a	n/a	V4D4162
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.8	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.12	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.068	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.43	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.057	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.098	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.075	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.14	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.15	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.17	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.40	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.14	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	JC88720-3	**Date Sampled:**	05/21/19
Matrix:	AQ - Trip Blank Water	**Date Received:**	05/24/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.14	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.10	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.13	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.43	ug/l	
75-09-2	Methylene chloride	1.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.11	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
91-20-3	Naphthalene	ND	0.50	0.28	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.066	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.091	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.13	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.055	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.40	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.057	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	0.14	0.50	0.11	ug/l	J
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.19	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	88%		70-130%
460-00-4	4-Bromofluorobenzene	81%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	JC88720-3	**Date Sampled:**	05/21/19
Matrix:	AQ - Trip Blank Water	**Date Received:**	05/24/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q

(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	JC88720-3	**Date Sampled:**	05/21/19
Matrix:	AQ - Trip Blank Water	**Date Received:**	05/24/19
Method:	SW846 8260C BY SIM	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A162327.D	1	05/29/19 09:59	RS	n/a	n/a	V3A7029
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.095	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17647-74-4	1,4-Dioxane-d8	77%		25-195%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

WW

CHAIN-OF-CUSTODY RECORD FX# 8127 8179 4663

JC88720 Page 1 of 1

WSP USA Office Address: Herndon, VA

Project Name: Korflex

WSP USA Contact Name: Eric Johnson

Project Location: Hanover, MD

WSP USA Contact E-mail: eric.johnson@wsp.com

Project Number & Task: 31401545.011/3

WSP USA Contact Phone: 703 709 6500

Sampler(s) Name(s): CC

Sampler(s) Signature(s):

Requested Analyses & Preservatives

No. 008154

Laboratory Name & Location: SGS, NJ

Laboratory Project Manager: Ross

Requested Turn-Around-Time: [X] Standard [ ] 24 HR [ ] 48 HR [ ] 72 HR [ ] ___ HR

	Sample Identification	Matrix	Collection Start Date	Collection Start Time	Collection Stop Date	Collection Stop Time	Number of Containers	VOC 8260	1,4-dioxane 8260 SIM	Sample Comments
	[redacted]									
1	RW-12270cm-052119		5/21/19	14	25		6	X	X	
2	RW-12270cm-052119-F		5/21/19	14	20		6	X	X	
3	Trip Blank		Lab provided				4	X	X	

USS

INITIAL ASESSMENT 3A

LABEL VERIFICATION

Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Shipment Method	Tracking Number(s)
	5/23/19	1430	Fedex			Fedex	8127 8179 4663
Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Number of Packages	Custody Seal Number(s)
FX	5/24/19	9:45		5/24/19	945	1	

*Use stop time/date for composite and/or air samples; use only start time/date for all other samples.

Matrix: AQ = Aqueous, S = Soil, SE = Sediment, A = Air, W = Wipe, B = Bulk, O = Other (detail in comments)

ICEV 2.1°C TP FR278

SGS Sample Receipt Summary

Job Number: JC88720 **Client:** _____ **Project:** _____

Date / Time Received: 5/24/2019 9:45:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.1);

Cooler Temps (Corrected) °C: Cooler 1: (1.1);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 206717 pH 12+: 208717 Other: (Specify) _____ _____

Comments

SM089-03
Rev. Date 12/7/17

JC88720: Chain of Custody
Page 2 of 2

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D4162-MB	4D94345.D	1	05/29/19	RS	n/a	n/a	V4D4162

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-1, JC88720-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.12	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.068	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.43	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.057	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	0.23	0.50	0.13	ug/l	J
95-49-8	o-Chlorotoluene	ND	0.50	0.098	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.075	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.14	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.15	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.17	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.40	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.14	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.14	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.10	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	

Method Blank Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D4162-MB	4D94345.D	1	05/29/19	RS	n/a	n/a	V4D4162

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-1, JC88720-3

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.13	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.43	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.11	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
91-20-3	Naphthalene	ND	0.50	0.28	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.066	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.091	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.13	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.055	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.40	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.057	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.19	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries		Limits
2199-69-1	1,2-Dichlorobenzene-d4	87%	70-130%
460-00-4	4-Bromofluorobenzene	82%	70-130%

Method Blank Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D4162-MB	4D94345.D	1	05/29/19	RS	n/a	n/a	V4D4162

The QC reported here applies to the following samples: **Method:**

JC88720-1, JC88720-3

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
1825-61-2	Silane, methoxytrimethyl-	7.84	2.6	ug/l	JN
1066-40-6	Silanol, trimethyl-	9.29	1.6	ug/l	JN
	Total TIC, Volatile		4.2	ug/l	J

Method Blank Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5781-MB	1B119707.D	1	05/31/19	BK	n/a	n/a	V1B5781

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.12	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.068	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.43	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.057	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.098	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.075	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.14	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.15	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.17	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.40	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.14	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.14	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.10	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	

Method Blank Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5781-MB	1B119707.D	1	05/31/19	BK	n/a	n/a	V1B5781

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-2

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.13	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.43	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.11	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
91-20-3	Naphthalene	ND	0.50	0.28	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.066	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.091	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.13	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.055	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.40	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.057	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.19	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries		Limits
2199-69-1	1,2-Dichlorobenzene-d4	94%	70-130%
460-00-4	4-Bromofluorobenzene	95%	70-130%

Method Blank Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5781-MB	1B119707.D	1	05/31/19	BK	n/a	n/a	V1B5781

The QC reported here applies to the following samples: **Method:**

JC88720-2

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.69	2.1	ug/l	J
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A7029-MB	3A162325.D	1	05/29/19	RS	n/a	n/a	V3A7029

The QC reported here applies to the following samples: **Method:** SW846 8260C BY SIM

JC88720-1, JC88720-2, JC88720-3

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.095	ug/l	

CAS No.	Surrogate Recoveries		Limits
17647-74-4	1,4-Dioxane-d8	80%	25-195%

Blank Spike Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5781-BS	1B119706.D	1	05/31/19	BK	n/a	n/a	V1B5781

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	20	21.0	105	70-130
78-93-3	2-Butanone	20	18.5	93	70-130
71-43-2	Benzene	5	4.3	86	70-130
108-86-1	Bromobenzene	5	4.3	86	70-130
74-97-5	Bromochloromethane	5	4.4	88	70-130
75-27-4	Bromodichloromethane	5	4.3	86	70-130
75-25-2	Bromoform	5	5.0	100	70-130
74-83-9	Bromomethane	5	4.3	86	70-130
104-51-8	n-Butylbenzene	5	4.1	82	70-130
135-98-8	sec-Butylbenzene	5	4.3	86	70-130
98-06-6	tert-Butylbenzene	5	4.1	82	70-130
75-15-0	Carbon disulfide	5	4.5	90	70-130
108-90-7	Chlorobenzene	5	4.2	84	70-130
75-00-3	Chloroethane	5	4.5	90	70-130
67-66-3	Chloroform	5	4.4	88	70-130
74-87-3	Chloromethane	5	4.4	88	70-130
95-49-8	o-Chlorotoluene	5	4.3	86	70-130
106-43-4	p-Chlorotoluene	5	4.4	88	70-130
56-23-5	Carbon tetrachloride	5	4.5	90	70-130
75-34-3	1,1-Dichloroethane	5	4.5	90	70-130
75-35-4	1,1-Dichloroethylene	5	4.4	88	70-130
563-58-6	1,1-Dichloropropene	5	4.4	88	70-130
96-12-8	1,2-Dibromo-3-chloropropane	5	4.4	88	70-130
106-93-4	1,2-Dibromoethane	5	4.7	94	70-130
107-06-2	1,2-Dichloroethane	5	4.5	90	70-130
78-87-5	1,2-Dichloropropane	5	4.2	84	70-130
142-28-9	1,3-Dichloropropane	5	4.3	86	70-130
594-20-7	2,2-Dichloropropane	5	4.7	94	70-130
124-48-1	Dibromochloromethane	5	4.6	92	70-130
74-95-3	Dibromomethane	5	4.3	86	70-130
75-71-8	Dichlorodifluoromethane	5	5.4	108	70-130
541-73-1	m-Dichlorobenzene	5	4.3	86	70-130
95-50-1	o-Dichlorobenzene	5	4.2	84	70-130
106-46-7	p-Dichlorobenzene	5	4.3	86	70-130
156-60-5	trans-1,2-Dichloroethylene	5	4.2	84	70-130
156-59-2	cis-1,2-Dichloroethylene	5	4.3	86	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5781-BS	1B119706.D	1	05/31/19	BK	n/a	n/a	V1B5781

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	5	4.4	88	70-130
10061-02-6	trans-1,3-Dichloropropene	5	4.4	88	70-130
100-41-4	Ethylbenzene	5	4.3	86	70-130
87-68-3	Hexachlorobutadiene	5	4.5	90	70-130
591-78-6	2-Hexanone	20	18.3	92	70-130
98-82-8	Isopropylbenzene	5	4.2	84	70-130
99-87-6	p-Isopropyltoluene	5	4.2	84	70-130
75-09-2	Methylene chloride	5	4.5	90	70-130
1634-04-4	Methyl Tert Butyl Ether	5	4.4	88	70-130
108-10-1	4-Methyl-2-pentanone	20	17.7	89	70-130
91-20-3	Naphthalene	5	4.4	88	70-130
103-65-1	n-Propylbenzene	5	4.3	86	70-130
100-42-5	Styrene	5	4.2	84	70-130
630-20-6	1,1,1,2-Tetrachloroethane	5	4.3	86	70-130
71-55-6	1,1,1-Trichloroethane	5	4.3	86	70-130
79-34-5	1,1,2,2-Tetrachloroethane	5	4.3	86	70-130
79-00-5	1,1,2-Trichloroethane	5	4.2	84	70-130
87-61-6	1,2,3-Trichlorobenzene	5	4.3	86	70-130
96-18-4	1,2,3-Trichloropropane	5	4.4	88	70-130
120-82-1	1,2,4-Trichlorobenzene	5	4.2	84	70-130
95-63-6	1,2,4-Trimethylbenzene	5	4.4	88	70-130
108-67-8	1,3,5-Trimethylbenzene	5	4.3	86	70-130
127-18-4	Tetrachloroethylene	5	4.2	84	70-130
108-88-3	Toluene	5	4.2	84	70-130
79-01-6	Trichloroethylene	5	4.2	84	70-130
75-69-4	Trichlorofluoromethane	5	4.9	98	70-130
75-01-4	Vinyl chloride	5	4.3	86	70-130
	m,p-Xylene	10	8.8	88	70-130
95-47-6	o-Xylene	5	4.3	86	70-130
1330-20-7	Xylenes (total)	15	13.1	87	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2199-69-1	1,2-Dichlorobenzene-d4	104%	70-130%
460-00-4	4-Bromofluorobenzene	101%	70-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A7029-BS	3A162324.D	1	05/29/19	RS	n/a	n/a	V3A7029

The QC reported here applies to the following samples: **Method:** SW846 8260C BY SIM

JC88720-1, JC88720-2, JC88720-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	20	15.2	76	48-137

CAS No.	Surrogate Recoveries	BSP	Limits
17647-74-4	1,4-Dioxane-d8	84%	25-195%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D4162-BS	4D94342.D	1	05/29/19	RS	n/a	n/a	V4D4162
V4D4162-BSD	4D94343.D	1	05/29/19	RS	n/a	n/a	V4D4162

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-1, JC88720-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	20	21.3	107	19.2	96	10	70-130/30
78-93-3	2-Butanone	20	21.2	106	21.1	106	0	70-130/30
71-43-2	Benzene	5	5.4	108	5.1	102	6	70-130/30
108-86-1	Bromobenzene	5	5.0	100	4.9	98	2	70-130/30
74-97-5	Bromochloromethane	5	5.5	110	5.7	114	4	70-130/30
75-27-4	Bromodichloromethane	5	5.1	102	4.8	96	6	70-130/30
75-25-2	Bromoform	5	5.1	102	4.5	90	13	70-130/30
74-83-9	Bromomethane	5	5.5	110	5.3	106	4	70-130/30
104-51-8	n-Butylbenzene	5	4.7	94	4.8	96	2	70-130/30
135-98-8	sec-Butylbenzene	5	4.4	88	4.5	90	2	70-130/30
98-06-6	tert-Butylbenzene	5	4.2	84	4.2	84	0	70-130/30
75-15-0	Carbon disulfide	5	5.7	114	5.4	108	5	70-130/30
108-90-7	Chlorobenzene	5	5.3	106	5.1	102	4	70-130/30
75-00-3	Chloroethane	5	6.2	124	5.7	114	8	70-130/30
67-66-3	Chloroform	5	5.0	100	4.9	98	2	70-130/30
74-87-3	Chloromethane	5	5.7	114	5.7	114	0	70-130/30
95-49-8	o-Chlorotoluene	5	4.6	92	4.8	96	4	70-130/30
106-43-4	p-Chlorotoluene	5	4.6	92	4.7	94	2	70-130/30
56-23-5	Carbon tetrachloride	5	4.4	88	4.5	90	2	70-130/30
75-34-3	1,1-Dichloroethane	5	5.3	106	5.2	104	2	70-130/30
75-35-4	1,1-Dichloroethylene	5	5.2	104	4.8	96	8	70-130/30
563-58-6	1,1-Dichloropropene	5	4.9	98	4.6	92	6	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	5	4.1	82	4.5	90	9	70-130/30
106-93-4	1,2-Dibromoethane	5	5.0	100	4.9	98	2	70-130/30
107-06-2	1,2-Dichloroethane	5	4.6	92	4.5	90	2	70-130/30
78-87-5	1,2-Dichloropropane	5	5.7	114	5.3	106	7	70-130/30
142-28-9	1,3-Dichloropropane	5	4.9	98	4.7	94	4	70-130/30
594-20-7	2,2-Dichloropropane	5	4.8	96	4.6	92	4	70-130/30
124-48-1	Dibromochloromethane	5	4.9	98	4.8	96	2	70-130/30
74-95-3	Dibromomethane	5	5.2	104	5.1	102	2	70-130/30
75-71-8	Dichlorodifluoromethane	5	4.5	90	4.6	92	2	70-130/30
541-73-1	m-Dichlorobenzene	5	5.0	100	5.0	100	0	70-130/30
95-50-1	o-Dichlorobenzene	5	5.0	100	4.7	94	6	70-130/30
106-46-7	p-Dichlorobenzene	5	5.1	102	5.0	100	2	70-130/30
156-60-5	trans-1,2-Dichloroethylene	5	4.7	94	5.1	102	8	70-130/30
156-59-2	cis-1,2-Dichloroethylene	5	5.3	106	5.2	104	2	70-130/30

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D4162-BS	4D94342.D	1	05/29/19	RS	n/a	n/a	V4D4162
V4D4162-BSD	4D94343.D	1	05/29/19	RS	n/a	n/a	V4D4162

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-1, JC88720-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	5	4.6	92	4.4	88	4	70-130/30
10061-02-6	trans-1,3-Dichloropropene	5	4.7	94	4.4	88	7	70-130/30
100-41-4	Ethylbenzene	5	4.8	96	4.8	96	0	70-130/30
87-68-3	Hexachlorobutadiene	5	4.6	92	4.5	90	2	70-130/30
591-78-6	2-Hexanone	20	20.8	104	20.1	101	3	70-130/30
98-82-8	Isopropylbenzene	5	4.4	88	4.3	86	2	70-130/30
99-87-6	p-Isopropyltoluene	5	4.5	90	4.5	90	0	70-130/30
75-09-2	Methylene chloride	5	5.2	104	4.9	98	6	70-130/30
1634-04-4	Methyl Tert Butyl Ether	5	4.6	92	4.5	90	2	70-130/30
108-10-1	4-Methyl-2-pentanone	20	21.0	105	20.6	103	2	70-130/30
91-20-3	Naphthalene	5	4.5	90	4.7	94	4	70-130/30
103-65-1	n-Propylbenzene	5	4.6	92	4.6	92	0	70-130/30
100-42-5	Styrene	5	4.9	98	4.7	94	4	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	5	4.9	98	4.5	90	9	70-130/30
71-55-6	1,1,1-Trichloroethane	5	4.8	96	4.5	90	6	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	5	5.0	100	4.8	96	4	70-130/30
79-00-5	1,1,2-Trichloroethane	5	5.3	106	5.2	104	2	70-130/30
87-61-6	1,2,3-Trichlorobenzene	5	4.6	92	4.6	92	0	70-130/30
96-18-4	1,2,3-Trichloropropane	5	4.8	96	4.6	92	4	70-130/30
120-82-1	1,2,4-Trichlorobenzene	5	4.7	94	4.5	90	4	70-130/30
95-63-6	1,2,4-Trimethylbenzene	5	4.5	90	4.7	94	4	70-130/30
108-67-8	1,3,5-Trimethylbenzene	5	4.7	94	4.6	92	2	70-130/30
127-18-4	Tetrachloroethylene	5	5.9	118	6.0	120	2	70-130/30
108-88-3	Toluene	5	4.8	96	4.9	98	2	70-130/30
79-01-6	Trichloroethylene	5	5.1	102	5.1	102	0	70-130/30
75-69-4	Trichlorofluoromethane	5	4.9	98	4.9	98	0	70-130/30
75-01-4	Vinyl chloride	5	5.0	100	4.9	98	2	70-130/30
	m,p-Xylene	10	10.0	100	9.7	97	3	70-130/30
95-47-6	o-Xylene	5	4.9	98	4.6	92	6	70-130/30
1330-20-7	Xylenes (total)	15	14.9	99	14.4	96	3	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
2199-69-1	1,2-Dichlorobenzene-d4	99%	98%	70-130%
460-00-4	4-Bromofluorobenzene	91%	88%	70-130%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC88468-1MS	4D94354.D	1	05/29/19	RS	n/a	n/a	V4D4162
JC88468-1	4D94353.D	1	05/29/19	RS	n/a	n/a	V4D4162

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-1, JC88720-3

CAS No.	Compound	JC88468-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
67-64-1	Acetone	ND		20	19.4	97	41-142
78-93-3	2-Butanone	ND		20	21.7	109	55-129
71-43-2	Benzene	ND		5	3.5	70	53-138
108-86-1	Bromobenzene	ND		5	4.1	82	54-138
74-97-5	Bromochloromethane	ND		5	3.7	74	55-140
75-27-4	Bromodichloromethane	ND		5	3.9	78	57-147
75-25-2	Bromoform	ND		5	4.7	94	47-137
74-83-9	Bromomethane	ND		5	4.1	82	40-162
104-51-8	n-Butylbenzene	ND		5	3.3	66	45-144
135-98-8	sec-Butylbenzene	ND		5	3.2	64	46-145
98-06-6	tert-Butylbenzene	ND		5	2.9	58	48-141
75-15-0	Carbon disulfide	ND		5	3.6	72	35-127
108-90-7	Chlorobenzene	ND		5	3.9	78	54-135
75-00-3	Chloroethane	ND		5	5.4	108	38-153
67-66-3	Chloroform	ND		5	3.4	68	57-151
74-87-3	Chloromethane	ND		5	4.8	96	39-165
95-49-8	o-Chlorotoluene	ND		5	3.5	70	55-142
106-43-4	p-Chlorotoluene	ND		5	3.6	72	55-139
56-23-5	Carbon tetrachloride	ND		5	2.9	58	49-170
75-34-3	1,1-Dichloroethane	ND		5	3.5	70	55-149
75-35-4	1,1-Dichloroethylene	ND		5	3.6	72	42-142
563-58-6	1,1-Dichloropropene	ND		5	3.1	62	46-151
96-12-8	1,2-Dibromo-3-chloropropane	ND		5	4.6	92	48-141
106-93-4	1,2-Dibromoethane	ND		5	4.3	86	57-135
107-06-2	1,2-Dichloroethane	ND		5	3.3	66	59-166
78-87-5	1,2-Dichloropropane	ND		5	3.8	76	53-142
142-28-9	1,3-Dichloropropane	ND		5	4.2	84	58-143
594-20-7	2,2-Dichloropropane	ND		5	3.3	66	38-165
124-48-1	Dibromochloromethane	ND		5	4.4	88	55-138
74-95-3	Dibromomethane	ND		5	3.9	78	61-144
75-71-8	Dichlorodifluoromethane	ND		5	4.2	84	23-172
541-73-1	m-Dichlorobenzene	ND		5	4.1	82	53-138
95-50-1	o-Dichlorobenzene	ND		5	4.2	84	54-140
106-46-7	p-Dichlorobenzene	ND		5	4.1	82	53-137
156-60-5	trans-1,2-Dichloroethylene	ND		5	3.1	62	47-148
156-59-2	cis-1,2-Dichloroethylene	ND		5	3.6	72	51-146

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC88468-1MS	4D94354.D	1	05/29/19	RS	n/a	n/a	V4D4162
JC88468-1	4D94353.D	1	05/29/19	RS	n/a	n/a	V4D4162

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-1, JC88720-3

CAS No.	Compound	JC88468-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
10061-01-5	cis-1,3-Dichloropropene	ND		5	3.5	70	51-136
10061-02-6	trans-1,3-Dichloropropene	ND		5	3.7	74	54-142
100-41-4	Ethylbenzene	ND		5	3.5	70	51-138
87-68-3	Hexachlorobutadiene	ND		5	3.5	70	40-154
591-78-6	2-Hexanone	ND		20	24.2	121	53-128
98-82-8	Isopropylbenzene	ND		5	3.1	62	49-139
99-87-6	p-Isopropyltoluene	ND		5	3.2	64	45-141
75-09-2	Methylene chloride	ND		5	3.4	68	54-137
1634-04-4	Methyl Tert Butyl Ether	ND		5	3.3	66	53-143
108-10-1	4-Methyl-2-pentanone	ND		20	23.0	115	58-127
91-20-3	Naphthalene	ND		5	4.2	84	44-140
103-65-1	n-Propylbenzene	ND		5	3.3	66	50-142
100-42-5	Styrene	0.32	J	5	4.3	80	23-130
630-20-6	1,1,1,2-Tetrachloroethane	ND		5	4.1	82	57-144
71-55-6	1,1,1-Trichloroethane	ND		5	3.0	60	52-164
79-34-5	1,1,2,2-Tetrachloroethane	ND		5	5.4	108	58-138
79-00-5	1,1,2-Trichloroethane	ND		5	4.8	96	59-139
87-61-6	1,2,3-Trichlorobenzene	ND		5	4.1	82	47-141
96-18-4	1,2,3-Trichloropropane	ND		5	5.4	108	56-148
120-82-1	1,2,4-Trichlorobenzene	ND		5	3.8	76	46-137
95-63-6	1,2,4-Trimethylbenzene	ND		5	3.3	66	41-138
108-67-8	1,3,5-Trimethylbenzene	ND		5	3.2	64	45-138
127-18-4	Tetrachloroethylene	ND		5	4.2	84	45-145
108-88-3	Toluene	ND		5	3.5	70	52-134
79-01-6	Trichloroethylene	ND		5	3.6	72	54-143
75-69-4	Trichlorofluoromethane	ND		5	4.7	94	36-167
75-01-4	Vinyl chloride	ND		5	4.3	86	35-162
	m,p-Xylene	ND		10	6.9	69	49-135
95-47-6	o-Xylene	ND		5	3.6	72	49-134
1330-20-7	Xylenes (total)	ND		15	10.5	70	50-134

CAS No.	Surrogate Recoveries	MS	JC88468-1	Limits
2199-69-1	1,2-Dichlorobenzene-d4	105%	91%	70-130%
460-00-4	4-Bromofluorobenzene	91%	74%	70-130%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC88720-2MS	1B119718.D	1	05/31/19	BK	n/a	n/a	V1B5781
JC88720-2 [a]	1B119713.D	1	05/31/19	BK	n/a	n/a	V1B5781

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-2

CAS No.	Compound	JC88720-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
67-64-1	Acetone	2.5	J	20	29.0	133	41-142
78-93-3	2-Butanone	ND		20	25.3	127	55-129
71-43-2	Benzene	ND		5	4.7	94	53-138
108-86-1	Bromobenzene	ND		5	5.1	102	54-138
74-97-5	Bromochloromethane	ND		5	4.7	94	55-140
75-27-4	Bromodichloromethane	ND		5	4.8	96	57-147
75-25-2	Bromoform	ND		5	5.9	118	47-137
74-83-9	Bromomethane	ND		5	4.5	90	40-162
104-51-8	n-Butylbenzene	ND		5	4.7	94	45-144
135-98-8	sec-Butylbenzene	ND		5	4.8	96	46-145
98-06-6	tert-Butylbenzene	ND		5	4.5	90	48-141
75-15-0	Carbon disulfide	ND		5	4.7	94	35-127
108-90-7	Chlorobenzene	ND		5	4.7	94	54-135
75-00-3	Chloroethane	ND		5	4.7	94	38-153
67-66-3	Chloroform	ND		5	4.7	94	57-151
74-87-3	Chloromethane	ND		5	5.4	108	39-165
95-49-8	o-Chlorotoluene	ND		5	4.8	96	55-142
106-43-4	p-Chlorotoluene	ND		5	4.8	96	55-139
56-23-5	Carbon tetrachloride	ND		5	4.7	94	49-170
75-34-3	1,1-Dichloroethane	ND		5	4.9	98	55-149
75-35-4	1,1-Dichloroethylene	0.76		5	6.9	123	42-142
563-58-6	1,1-Dichloropropene	ND		5	4.8	96	46-151
96-12-8	1,2-Dibromo-3-chloropropane	ND		5	6.3	126	48-141
106-93-4	1,2-Dibromoethane	ND		5	5.6	112	57-135
107-06-2	1,2-Dichloroethane	ND		5	5.0	100	59-166
78-87-5	1,2-Dichloropropane	ND		5	4.7	94	53-142
142-28-9	1,3-Dichloropropane	ND		5	5.3	106	58-143
594-20-7	2,2-Dichloropropane	ND		5	5.0	100	38-165
124-48-1	Dibromochloromethane	ND		5	5.4	108	55-138
74-95-3	Dibromomethane	ND		5	5.0	100	61-144
75-71-8	Dichlorodifluoromethane	ND		5	5.6	112	23-172
541-73-1	m-Dichlorobenzene	ND		5	4.9	98	53-138
95-50-1	o-Dichlorobenzene	ND		5	5.0	100	54-140
106-46-7	p-Dichlorobenzene	ND		5	4.9	98	53-137
156-60-5	trans-1,2-Dichloroethylene	ND		5	4.6	92	47-148
156-59-2	cis-1,2-Dichloroethylene	ND		5	4.7	94	51-146

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC88720-2MS	1B119718.D	1	05/31/19	BK	n/a	n/a	V1B5781
JC88720-2 [a]	1B119713.D	1	05/31/19	BK	n/a	n/a	V1B5781

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-2

CAS No.	Compound	JC88720-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
10061-01-5	cis-1,3-Dichloropropene	ND		5	4.8	96	51-136
10061-02-6	trans-1,3-Dichloropropene	ND		5	5.2	104	54-142
100-41-4	Ethylbenzene	ND		5	4.6	92	51-138
87-68-3	Hexachlorobutadiene	ND		5	5.1	102	40-154
591-78-6	2-Hexanone	ND		20	27.5	138* [b]	53-128
98-82-8	Isopropylbenzene	ND		5	4.5	90	49-139
99-87-6	p-Isopropyltoluene	ND		5	4.5	90	45-141
75-09-2	Methylene chloride	ND		5	4.8	96	54-137
1634-04-4	Methyl Tert Butyl Ether	ND		5	4.9	98	53-143
108-10-1	4-Methyl-2-pentanone	ND		20	25.6	128* [b]	58-127
91-20-3	Naphthalene	ND		5	5.7	114	44-140
103-65-1	n-Propylbenzene	ND		5	4.7	94	50-142
100-42-5	Styrene	ND		5	0.17	3* [b]	23-130
630-20-6	1,1,1,2-Tetrachloroethane	ND		5	4.9	98	57-144
71-55-6	1,1,1-Trichloroethane	0.23	J	5	5.0	95	52-164
79-34-5	1,1,2,2-Tetrachloroethane	ND		5	6.0	120	58-138
79-00-5	1,1,2-Trichloroethane	ND		5	5.3	106	59-139
87-61-6	1,2,3-Trichlorobenzene	ND		5	5.1	102	47-141
96-18-4	1,2,3-Trichloropropane	ND		5	6.1	122	56-148
120-82-1	1,2,4-Trichlorobenzene	ND		5	5.1	102	46-137
95-63-6	1,2,4-Trimethylbenzene	ND		5	4.5	90	41-138
108-67-8	1,3,5-Trimethylbenzene	ND		5	0.78	16* [b]	45-138
127-18-4	Tetrachloroethylene	ND		5	4.5	90	45-145
108-88-3	Toluene	ND		5	4.5	90	52-134
79-01-6	Trichloroethylene	ND		5	4.6	92	54-143
75-69-4	Trichlorofluoromethane	ND		5	5.2	104	36-167
75-01-4	Vinyl chloride	ND		5	4.8	96	35-162
	m,p-Xylene	ND		10	9.1	91	49-135
95-47-6	o-Xylene	ND		5	4.6	92	49-134
1330-20-7	Xylenes (total)	ND		15	13.8	92	50-134

CAS No.	Surrogate Recoveries	MS	JC88720-2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	100%	93%	70-130%
460-00-4	4-Bromofluorobenzene	100%	91%	70-130%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC88720-2MS	1B119718.D	1	05/31/19	BK	n/a	n/a	V1B5781
JC88720-2 [a]	1B119713.D	1	05/31/19	BK	n/a	n/a	V1B5781

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-2

(a) EPA 524.2 is not a certified method for non-potable water samples.
(b) Outside control limits due to matrix interference.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC88711-1MS	3A162335.D	1	05/29/19	RS	n/a	n/a	V3A7029
JC88711-1MSD	3A162336.D	1	05/29/19	RS	n/a	n/a	V3A7029
JC88711-1	3A162329.D	1	05/29/19	RS	n/a	n/a	V3A7029

The QC reported here applies to the following samples: **Method:** SW846 8260C BY SIM

JC88720-1, JC88720-2, JC88720-3

CAS No.	Compound	JC88711-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
123-91-1	1,4-Dioxane	1.4		20	17.5	81	20	14.9	68	16	28-162/64

CAS No.	Surrogate Recoveries	MS	MSD	JC88711-1	Limits
17647-74-4	1,4-Dioxane-d8	81%	72%	74%	25-195%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC88799-1DUP	4D94356.D	1	05/29/19	RS	n/a	n/a	V4D4162
JC88799-1	4D94348.D	1	05/29/19	RS	n/a	n/a	V4D4162

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-1, JC88720-3

CAS No.	Compound	JC88799-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
67-64-1	Acetone	ND		ND		nc	10
78-93-3	2-Butanone	ND		ND		nc	12
71-43-2	Benzene	ND		ND		nc	10
108-86-1	Bromobenzene	ND		ND		nc	10
74-97-5	Bromochloromethane	ND		ND		nc	10
75-27-4	Bromodichloromethane	ND		ND		nc	10
75-25-2	Bromoform	0.35		ND		200* [a]	10
74-83-9	Bromomethane	ND		ND		nc	10
104-51-8	n-Butylbenzene	ND		ND		nc	10
135-98-8	sec-Butylbenzene	ND		ND		nc	10
98-06-6	tert-Butylbenzene	ND		ND		nc	10
75-15-0	Carbon disulfide	ND		ND		nc	19
108-90-7	Chlorobenzene	ND		ND		nc	10
75-00-3	Chloroethane	ND		ND		nc	10
67-66-3	Chloroform	ND		ND		nc	12
74-87-3	Chloromethane	ND		ND		nc	10
95-49-8	o-Chlorotoluene	ND		ND		nc	10
106-43-4	p-Chlorotoluene	ND		ND		nc	10
56-23-5	Carbon tetrachloride	ND		ND		nc	10
75-34-3	1,1-Dichloroethane	ND		ND		nc	10
75-35-4	1,1-Dichloroethylene	ND		ND		nc	10
563-58-6	1,1-Dichloropropene	ND		ND		nc	10
96-12-8	1,2-Dibromo-3-chloropropane	ND		ND		nc	10
106-93-4	1,2-Dibromoethane	ND		ND		nc	10
107-06-2	1,2-Dichloroethane	ND		ND		nc	10
78-87-5	1,2-Dichloropropane	ND		ND		nc	10
142-28-9	1,3-Dichloropropane	ND		ND		nc	10
594-20-7	2,2-Dichloropropane	ND		ND		nc	10
124-48-1	Dibromochloromethane	ND		ND		nc	10
74-95-3	Dibromomethane	ND		ND		nc	10
75-71-8	Dichlorodifluoromethane	ND		ND		nc	10
541-73-1	m-Dichlorobenzene	ND		ND		nc	10
95-50-1	o-Dichlorobenzene	ND		ND		nc	10
106-46-7	p-Dichlorobenzene	ND		ND		nc	10
156-60-5	trans-1,2-Dichloroethylene	ND		ND		nc	10
156-59-2	cis-1,2-Dichloroethylene	ND		ND		nc	10

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC88799-1DUP	4D94356.D	1	05/29/19	RS	n/a	n/a	V4D4162
JC88799-1	4D94348.D	1	05/29/19	RS	n/a	n/a	V4D4162

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-1, JC88720-3

CAS No.	Compound	JC88799-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
10061-01-5	cis-1,3-Dichloropropene	ND		ND		nc	10
10061-02-6	trans-1,3-Dichloropropene	ND		ND		nc	10
100-41-4	Ethylbenzene	ND		ND		nc	10
87-68-3	Hexachlorobutadiene	ND		ND		nc	10
591-78-6	2-Hexanone	ND		ND		nc	10
98-82-8	Isopropylbenzene	ND		ND		nc	10
99-87-6	p-Isopropyltoluene	ND		ND		nc	10
75-09-2	Methylene chloride	ND		ND		nc	10
1634-04-4	Methyl Tert Butyl Ether	0.80		0.74		8	10
108-10-1	4-Methyl-2-pentanone	ND		ND		nc	10
91-20-3	Naphthalene	ND		ND		nc	10
103-65-1	n-Propylbenzene	ND		ND		nc	10
100-42-5	Styrene	ND		ND		nc	10
630-20-6	1,1,1,2-Tetrachloroethane	ND		ND		nc	10
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	10
79-34-5	1,1,2,2-Tetrachloroethane	ND		ND		nc	10
79-00-5	1,1,2-Trichloroethane	ND		ND		nc	10
87-61-6	1,2,3-Trichlorobenzene	ND		ND		nc	10
96-18-4	1,2,3-Trichloropropane	ND		ND		nc	10
120-82-1	1,2,4-Trichlorobenzene	ND		ND		nc	10
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	10
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	10
127-18-4	Tetrachloroethylene	ND		ND		nc	10
108-88-3	Toluene	ND		ND		nc	10
79-01-6	Trichloroethylene	ND		ND		nc	10
75-69-4	Trichlorofluoromethane	ND		ND		nc	10
75-01-4	Vinyl chloride	ND		ND		nc	10
	m,p-Xylene	ND		ND		nc	10
95-47-6	o-Xylene	ND		ND		nc	10
1330-20-7	Xylenes (total)	ND		ND		nc	10

CAS No.	Surrogate Recoveries	DUP	JC88799-1	Limits
2199-69-1	1,2-Dichlorobenzene-d4	86%	90%	70-130%
460-00-4	4-Bromofluorobenzene	79%	82%	70-130%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC88799-1DUP	4D94356.D	1	05/29/19	RS	n/a	n/a	V4D4162
JC88799-1	4D94348.D	1	05/29/19	RS	n/a	n/a	V4D4162

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-1, JC88720-3

(a) RPD acceptable due to low DUP and sample concentrations.

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC88904-1DUP	1B119715.D	1	05/31/19	BK	n/a	n/a	V1B5781
JC88904-1 [a]	1B119709.D	1	05/31/19	BK	n/a	n/a	V1B5781

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-2

CAS No.	Compound	JC88904-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
67-64-1	Acetone	ND		ND		nc	10
78-93-3	2-Butanone	ND		ND		nc	12
71-43-2	Benzene	ND		ND		nc	10
108-86-1	Bromobenzene	ND		ND		nc	10
74-97-5	Bromochloromethane	ND		ND		nc	10
75-27-4	Bromodichloromethane	ND		ND		nc	10
75-25-2	Bromoform	ND		ND		nc	10
74-83-9	Bromomethane	ND		ND		nc	10
104-51-8	n-Butylbenzene	ND		ND		nc	10
135-98-8	sec-Butylbenzene	ND		ND		nc	10
98-06-6	tert-Butylbenzene	ND		ND		nc	10
75-15-0	Carbon disulfide	ND		ND		nc	19
108-90-7	Chlorobenzene	ND		ND		nc	10
75-00-3	Chloroethane	ND		ND		nc	10
67-66-3	Chloroform	0.58		0.53		9	12
74-87-3	Chloromethane	ND		ND		nc	10
95-49-8	o-Chlorotoluene	ND		ND		nc	10
106-43-4	p-Chlorotoluene	ND		ND		nc	10
56-23-5	Carbon tetrachloride	ND		ND		nc	10
75-34-3	1,1-Dichloroethane	ND		ND		nc	10
75-35-4	1,1-Dichloroethylene	0.75		0.69		8	10
563-58-6	1,1-Dichloropropene	ND		ND		nc	10
96-12-8	1,2-Dibromo-3-chloropropane	ND		ND		nc	10
106-93-4	1,2-Dibromoethane	ND		ND		nc	10
107-06-2	1,2-Dichloroethane	ND		ND		nc	10
78-87-5	1,2-Dichloropropane	ND		ND		nc	10
142-28-9	1,3-Dichloropropane	ND		ND		nc	10
594-20-7	2,2-Dichloropropane	ND		ND		nc	10
124-48-1	Dibromochloromethane	ND		ND		nc	10
74-95-3	Dibromomethane	ND		ND		nc	10
75-71-8	Dichlorodifluoromethane	ND		ND		nc	10
541-73-1	m-Dichlorobenzene	ND		ND		nc	10
95-50-1	o-Dichlorobenzene	ND		ND		nc	10
106-46-7	p-Dichlorobenzene	ND		ND		nc	10
156-60-5	trans-1,2-Dichloroethylene	ND		ND		nc	10
156-59-2	cis-1,2-Dichloroethylene	0.24	J	0.25	J	4	10

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC88904-1DUP	1B119715.D	1	05/31/19	BK	n/a	n/a	V1B5781
JC88904-1 [a]	1B119709.D	1	05/31/19	BK	n/a	n/a	V1B5781

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-2

CAS No.	Compound	JC88904-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
10061-01-5	cis-1,3-Dichloropropene	ND		ND		nc	10
10061-02-6	trans-1,3-Dichloropropene	ND		ND		nc	10
100-41-4	Ethylbenzene	ND		ND		nc	10
87-68-3	Hexachlorobutadiene	ND		ND		nc	10
591-78-6	2-Hexanone	ND		ND		nc	10
98-82-8	Isopropylbenzene	ND		ND		nc	10
99-87-6	p-Isopropyltoluene	ND		ND		nc	10
75-09-2	Methylene chloride	ND		ND		nc	10
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	10
108-10-1	4-Methyl-2-pentanone	ND		ND		nc	10
91-20-3	Naphthalene	ND		ND		nc	10
103-65-1	n-Propylbenzene	ND		ND		nc	10
100-42-5	Styrene	ND		ND		nc	10
630-20-6	1,1,1,2-Tetrachloroethane	ND		ND		nc	10
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	10
79-34-5	1,1,2,2-Tetrachloroethane	ND		ND		nc	10
79-00-5	1,1,2-Trichloroethane	ND		ND		nc	10
87-61-6	1,2,3-Trichlorobenzene	ND		ND		nc	10
96-18-4	1,2,3-Trichloropropane	ND		ND		nc	10
120-82-1	1,2,4-Trichlorobenzene	ND		ND		nc	10
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	10
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	10
127-18-4	Tetrachloroethylene	ND		ND		nc	10
108-88-3	Toluene	ND		ND		nc	10
79-01-6	Trichloroethylene	0.62		0.59		5	10
75-69-4	Trichlorofluoromethane	ND		ND		nc	10
75-01-4	Vinyl chloride	ND		ND		nc	10
	m,p-Xylene	ND		ND		nc	10
95-47-6	o-Xylene	ND		ND		nc	10
1330-20-7	Xylenes (total)	ND		ND		nc	10

CAS No.	Surrogate Recoveries	DUP	JC88904-1	Limits
2199-69-1	1,2-Dichlorobenzene-d4	92%	91%	70-130%
460-00-4	4-Bromofluorobenzene	91%	90%	70-130%

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC88904-1DUP	1B119715.D	1	05/31/19	BK	n/a	n/a	V1B5781
JC88904-1 [a]	1B119709.D	1	05/31/19	BK	n/a	n/a	V1B5781

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC88720-2

(a) EPA 524.2 is not a certified method for non-potable water samples.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample: V1B5774-BFB
Lab File ID: 1B119565.D
Instrument ID: GCMS1B
Injection Date: 05/22/19
Injection Time: 09:31

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.99 - 40.0% of mass 95	2716	17.5		Pass
75	30.0 - 80.0% of mass 95	7338	47.2		Pass
95	Base peak, 100% relative abundance	15558	100.0		Pass
96	5.0 - 9.0% of mass 95	1141	7.33		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	12892	82.9		Pass
175	5.0 - 9.0% of mass 174	1054	6.77	(8.18) [a]	Pass
176	95.0 - 101.0% of mass 174	12308	79.1	(95.5) [a]	Pass
177	5.0 - 9.0% of mass 176	811	5.21	(6.59) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5774-IC5774	1B119566.D	05/22/19	10:04	00:33	Initial cal 0.2
V1B5774-IC5774	1B119567.D	05/22/19	10:37	01:06	Initial cal 0.5
V1B5774-IC5774	1B119568.D	05/22/19	11:07	01:36	Initial cal 1
V1B5774-IC5774	1B119569.D	05/22/19	11:38	02:07	Initial cal 2
V1B5774-IC5774	1B119570.D	05/22/19	12:09	02:38	Initial cal 5
V1B5774-ICC5774	1B119571.D	05/22/19	12:41	03:10	Initial cal 10
V1B5774-IC5774	1B119572.D	05/22/19	13:12	03:41	Initial cal 20
V1B5774-IC5774	1B119573.D	05/22/19	13:43	04:12	Initial cal 40
V1B5774-IC5774	1B119574.D	05/22/19	14:14	04:43	Initial cal 80
V1B5774-ICV5774	1B119577.D	05/22/19	15:47	06:16	Initial cal verification 10

Instrument Performance Check (BFB)

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample: V1B5781-BFB
Lab File ID: 1B119705.D
Instrument ID: GCMS1B
Injection Date: 05/31/19
Injection Time: 08:04

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.99 - 40.0% of mass 95	3181	19.8		Pass
75	30.0 - 80.0% of mass 95	8394	52.2		Pass
95	Base peak, 100% relative abundance	16077	100.0		Pass
96	5.0 - 9.0% of mass 95	1129	7.02		Pass
173	Less than 2.0% of mass 174	63	0.39	(0.45) [a]	Pass
174	50.0 - 120.0% of mass 95	13989	87.0		Pass
175	5.0 - 9.0% of mass 174	891	5.54	(6.37) [a]	Pass
176	95.0 - 101.0% of mass 174	13290	82.7	(95.0) [a]	Pass
177	5.0 - 9.0% of mass 176	856	5.32	(6.44) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5781-BS	1B119706.D	05/31/19	08:53	00:49	Blank Spike
V1B5781-CC5774	1B119706.D	05/31/19	08:53	00:49	Continuing cal 5
V1B5781-MB	1B119707.D	05/31/19	09:32	01:28	Method Blank
ZZZZZZ	1B119708.D	05/31/19	10:19	02:15	(unrelated sample)
JC88904-1	1B119709.D	05/31/19	10:50	02:46	(used for QC only; not part of job JC88720)
JC88867-1	1B119710.D	05/31/19	11:23	03:19	(used for QC only; not part of job JC88720)
ZZZZZZ	1B119711.D	05/31/19	11:54	03:50	(unrelated sample)
ZZZZZZ	1B119712.D	05/31/19	12:25	04:21	(unrelated sample)
JC88720-2	1B119713.D	05/31/19	12:56	04:52	RW-12270CM-052119-F
JC88904-1DUP	1B119715.D	05/31/19	13:58	05:54	Duplicate
JC88720-2MS	1B119718.D	05/31/19	15:32	07:28	Matrix Spike
ZZZZZZ	1B119720.D	05/31/19	16:34	08:30	(unrelated sample)
ZZZZZZ	1B119721.D	05/31/19	17:05	09:01	(unrelated sample)
ZZZZZZ	1B119722.D	05/31/19	17:36	09:32	(unrelated sample)
ZZZZZZ	1B119723.D	05/31/19	18:07	10:03	(unrelated sample)
ZZZZZZ	1B119724.D	05/31/19	18:38	10:34	(unrelated sample)
ZZZZZZ	1B119725.D	05/31/19	19:10	11:06	(unrelated sample)
ZZZZZZ	1B119726.D	05/31/19	19:41	11:37	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample:	V3A6923-BFB	**Injection Date:**	07/18/18
Lab File ID:	3A160428.D	**Injection Time:**	16:55
Instrument ID:	GCMS3A		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	25408	20.8		Pass
75	30.0 - 60.0% of mass 95	62880	51.6		Pass
95	Base peak, 100% relative abundance	121864	100.0		Pass
96	5.0 - 9.0% of mass 95	8101	6.65		Pass
173	Less than 2.0% of mass 174	826	0.68	(0.81) [a]	Pass
174	50.0 - 120.0% of mass 95	102317	84.0		Pass
175	5.0 - 9.0% of mass 174	8168	6.70	(7.98) [a]	Pass
176	95.0 - 101.0% of mass 174	100370	82.4	(98.1) [a]	Pass
177	5.0 - 9.0% of mass 176	6691	5.49	(6.67) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A6923-IC6923	3A160429.D	07/18/18	17:26	00:31	Initial cal 0.25
V3A6923-IC6923	3A160430.D	07/18/18	17:52	00:57	Initial cal 0.4
V3A6923-IC6923	3A160431.D	07/18/18	18:18	01:23	Initial cal 1
V3A6923-IC6923	3A160432.D	07/18/18	18:43	01:48	Initial cal 2
V3A6923-IC6923	3A160433.D	07/18/18	19:09	02:14	Initial cal 5
V3A6923-ICC6923	3A160434.D	07/18/18	19:35	02:40	Initial cal 20
V3A6923-IC6923	3A160435.D	07/18/18	20:00	03:05	Initial cal 50
V3A6923-IC6923	3A160436.D	07/18/18	20:26	03:31	Initial cal 100
V3A6923-IC6923	3A160437.D	07/18/18	20:52	03:57	Initial cal 200
V3A6923-ICV6923	3A160443.D	07/18/18	23:25	06:30	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample:	V3A7029-BFB	**Injection Date:**	05/29/19
Lab File ID:	3A162322.D	**Injection Time:**	07:33
Instrument ID:	GCMS3A		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	4051	20.5		Pass
75	30.0 - 60.0% of mass 95	10346	52.2		Pass
95	Base peak, 100% relative abundance	19809	100.0		Pass
96	5.0 - 9.0% of mass 95	1533	7.74		Pass
173	Less than 2.0% of mass 174	51	0.26	(0.36) [a]	Pass
174	50.0 - 120.0% of mass 95	14346	72.4		Pass
175	5.0 - 9.0% of mass 174	1210	6.11	(8.43) [a]	Pass
176	95.0 - 101.0% of mass 174	14445	72.9	(100.7) [a]	Pass
177	5.0 - 9.0% of mass 176	1094	5.52	(7.57) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A7029-CC6923	3A162323.D	05/29/19	08:02	00:29	Continuing cal 5
V3A7029-BS	3A162324.D	05/29/19	08:32	00:59	Blank Spike
V3A7029-MB	3A162325.D	05/29/19	09:01	01:28	Method Blank
ZZZZZZ	3A162326.D	05/29/19	09:30	01:57	(unrelated sample)
JC88720-3	3A162327.D	05/29/19	09:59	02:26	TRIP BLANK
ZZZZZZ	3A162328.D	05/29/19	10:28	02:55	(unrelated sample)
JC88711-1	3A162329.D	05/29/19	10:56	03:23	(used for QC only; not part of job JC88720)
ZZZZZZ	3A162330.D	05/29/19	11:25	03:52	(unrelated sample)
ZZZZZZ	3A162331.D	05/29/19	11:53	04:20	(unrelated sample)
JC88720-1	3A162332.D	05/29/19	12:22	04:49	RW-12270CM-052119
JC88720-2	3A162333.D	05/29/19	12:51	05:18	RW-12270CM-052119-F
ZZZZZZ	3A162334.D	05/29/19	13:19	05:46	(unrelated sample)
JC88711-1MS	3A162335.D	05/29/19	13:48	06:15	Matrix Spike
JC88711-1MSD	3A162336.D	05/29/19	14:16	06:43	Matrix Spike Duplicate

Instrument Performance Check (BFB)

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample:	V4D4157-BFB	**Injection Date:**	05/22/19
Lab File ID:	4D94258.D	**Injection Time:**	09:09
Instrument ID:	GCMS4D		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	3367	20.4		Pass
75	30.0 - 80.0% of mass 95	8045	48.8		Pass
95	Base peak, 100% relative abundance	16469	100.0		Pass
96	5.0 - 9.0% of mass 95	1121	6.81		Pass
173	Less than 2.0% of mass 174	115	0.70	(0.71) [a]	Pass
174	50.0 - 120.0% of mass 95	16217	98.5		Pass
175	5.0 - 9.0% of mass 174	1330	8.08	(8.20) [a]	Pass
176	95.01 - 101.0% of mass 174	16148	98.1	(99.6) [a]	Pass
177	5.0 - 9.0% of mass 176	1096	6.65	(6.79) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V4D4157-IC4157	4D94259.D	05/22/19	10:33	01:24	Initial cal 0.2
V4D4157-IC4157	4D94260.D	05/22/19	11:05	01:56	Initial cal 0.5
V4D4157-IC4157	4D94261.D	05/22/19	11:37	02:28	Initial cal 1
V4D4157-IC4157	4D94262.D	05/22/19	12:09	03:00	Initial cal 2
V4D4157-IC4157	4D94263.D	05/22/19	12:41	03:32	Initial cal 5
V4D4157-ICC4157	4D94264.D	05/22/19	13:13	04:04	Initial cal 10
V4D4157-IC4157	4D94265.D	05/22/19	13:45	04:36	Initial cal 20
V4D4157-IC4157	4D94266.D	05/22/19	14:17	05:08	Initial cal 40
V4D4157-IC4157	4D94267.D	05/22/19	14:49	05:40	Initial cal 80
V4D4157-ICV4157	4D94270.D	05/22/19	16:25	07:16	Initial cal verification 10

Instrument Performance Check (BFB)

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample: V4D4162-BFB
Lab File ID: 4D94341.D
Instrument ID: GCMS4D
Injection Date: 05/29/19
Injection Time: 08:04

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	1923	15.7		Pass
75	30.0 - 80.0% of mass 95	5374	43.8		Pass
95	Base peak, 100% relative abundance	12273	100.0		Pass
96	5.0 - 9.0% of mass 95	920	7.50		Pass
173	Less than 2.0% of mass 174	201	1.64	(1.51) [a]	Pass
174	50.0 - 120.0% of mass 95	13312	108.5		Pass
175	5.0 - 9.0% of mass 174	1096	8.93	(8.23) [a]	Pass
176	95.01 - 101.0% of mass 174	13289	108.3	(99.8) [a]	Pass
177	5.0 - 9.0% of mass 176	750	6.11	(5.64) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V4D4162-BS	4D94342.D	05/29/19	08:38	00:34	Blank Spike
V4D4162-CC4157	4D94342.D	05/29/19	08:38	00:34	Continuing cal 5
V4D4162-BSD	4D94343.D	05/29/19	09:30	01:26	Blank Spike Duplicate
V4D4162-MB	4D94345.D	05/29/19	10:58	02:54	Method Blank
JC88799-1	4D94348.D	05/29/19	12:29	04:25	(used for QC only; not part of job JC88720)
JC88720-1	4D94349.D	05/29/19	13:02	04:58	RW-12270CM-052119
ZZZZZZ	4D94351.D	05/29/19	14:06	06:02	(unrelated sample)
ZZZZZZ	4D94352.D	05/29/19	14:38	06:34	(unrelated sample)
JC88468-1	4D94353.D	05/29/19	15:10	07:06	(used for QC only; not part of job JC88720)
JC88468-1MS	4D94354.D	05/29/19	15:44	07:40	Matrix Spike
JC88799-1DUP	4D94356.D	05/29/19	16:49	08:45	Duplicate
ZZZZZZ	4D94356A.D	05/29/19	16:49	08:45	(unrelated sample)
JC88720-3	4D94357.D	05/29/19	17:21	09:17	TRIP BLANK
ZZZZZZ	4D94358.D	05/29/19	17:53	09:49	(unrelated sample)
ZZZZZZ	4D94359.D	05/29/19	18:25	10:21	(unrelated sample)
ZZZZZZ	4D94360.D	05/29/19	18:57	10:53	(unrelated sample)

Surrogate Recovery Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Method: EPA 524.2 REV 4.1 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2
JC88720-1	4D94349.D	88	81
JC88720-2	1B119713.D	93	91
JC88720-3	4D94357.D	88	81
JC88468-1MS	4D94354.D	105	91
JC88720-2MS	1B119718.D	100	100
JC88799-1DUP	4D94356.D	86	79
JC88904-1DUP	1B119715.D	92	91
V1B5781-BS	1B119706.D	104	101
V1B5781-MB	1B119707.D	94	95
V4D4162-BS	4D94342.D	99	91
V4D4162-BSD	4D94343.D	98	88
V4D4162-MB	4D94345.D	87	82

Surrogate Compounds	Recovery Limits
S1 = 1,2-Dichlorobenzene-d4	70-130%
S2 = 4-Bromofluorobenzene	70-130%

Surrogate Recovery Summary

Job Number: JC88720
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Method: SW846 8260C BY SIM **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
JC88720-1	3A162332.D	80
JC88720-2	3A162333.D	81
JC88720-3	3A162327.D	77
JC88711-1MS	3A162335.D	81
JC88711-1MSD	3A162336.D	72
V3A7029-BS	3A162324.D	84
V3A7029-MB	3A162325.D	80

Surrogate Compounds	Recovery Limits
S1 = 1,4-Dioxane-d8	25-195%

JUNE 2019

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

WSP Environment & Energy

Kop-Flex, Hanover, VA

31401545.011-03

SGS Job Number: JC89937

Sampling Date: 06/12/19

Report to:

WSP
11190 Sunrise Valley Drive Suite 300
Reston, VA 20190
Eric.Johnson@WSPGroup.com; maria.kaplan@wsp.com

ATTN: Eric Johnson

Total number of pages in report: 38

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Brian McGuire
General Manager

Client Service contact: Rocus Peters 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

Sections: 1 2 3 4 5

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SGS North America Inc.

Sample Summary

WSP Environment & Energy

Job No: JC89937

Kop-Flex, Hanover, VA
Project No: 31401545.011-03

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC89937-1	06/12/19	11:00	CC	06/13/19	DW	Drinking Water	RW-12270CM-061219
JC89937-2	06/12/19	10:55	CC	06/13/19	DW	Drinking Water	RW-12270CM-061219-F
JC89937-3	06/12/19	11:55	CC	06/13/19	DW	Drinking Water TB	TB-061219

Summary of Hits

Job Number: JC89937
Account: WSP Environment & Energy
Project: Kop-Flex, Hanover, VA
Collected: 06/12/19

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC89937-1	**RW-12270CM-061219**					
1,1-Dichloroethylene		5.7	0.50	0.19	ug/l	EPA 524.2 REV 4.1
1,1,1-Trichloroethane		0.23 J	0.50	0.22	ug/l	EPA 524.2 REV 4.1
1,4-Dioxane		2.6	0.40	0.095	ug/l	SW846 8260C BY SIM
JC89937-2	**RW-12270CM-061219-F**					
1,1,1-Trichloroethane		0.25 J	0.50	0.22	ug/l	EPA 524.2 REV 4.1
1,4-Dioxane		2.5	0.40	0.095	ug/l	SW846 8260C BY SIM
JC89937-3	**TB-061219**					
Acetone		2.8 J	5.0	2.5	ug/l	EPA 524.2 REV 4.1

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	RW-12270CM-061219		
Lab Sample ID:	JC89937-1	**Date Sampled:**	06/12/19
Matrix:	DW - Drinking Water	**Date Received:**	06/13/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B119936.D	1	06/20/19 20:11	BK	n/a	n/a	V1B5791
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	2.5	ug/l	
78-93-3	2-Butanone	ND		5.0	0.43	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.16	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.12	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.13	ug/l	
75-25-2	Bromoform	ND		0.50	0.27	ug/l	
74-83-9	Bromomethane	ND		0.50	0.18	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.068	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.43	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.057	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND		0.50	0.080	ug/l	
67-66-3	Chloroform	ND		0.50	0.17	ug/l	
74-87-3	Chloromethane	ND		0.50	0.13	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.098	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.075	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	5.7	7.0	0.50	0.19	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.20	1.0	0.14	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.050	0.50	0.15	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.19	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.17	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.14	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.40	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.14	ug/l	

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-12270CM-061219		
Lab Sample ID:	JC89937-1	**Date Sampled:**	06/12/19
Matrix:	DW - Drinking Water	**Date Received:**	06/13/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.14	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.10	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.076	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.13	ug/l	
591-78-6	2-Hexanone	ND		2.0	0.24	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.43	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.11	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	0.22	ug/l	
91-20-3	Naphthalene	ND		0.50	0.28	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.066	ug/l	
100-42-5	Styrene	ND	100	0.50	0.069	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	0.23	200	0.50	0.22	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.19	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.091	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.13	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.055	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.40	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.057	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.23	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.11	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.20	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.19	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.15	ug/l	
	m,p-Xylene	ND		0.50	0.14	ug/l	
95-47-6	o-Xylene	ND		0.50	0.076	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	79%		70-130%
460-00-4	4-Bromofluorobenzene	84%		70-130%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-12270CM-061219		
Lab Sample ID:	JC89937-1	**Date Sampled:**	06/12/19
Matrix:	DW - Drinking Water	**Date Received:**	06/13/19
Method:	SW846 8260C BY SIM	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A162480.D	1	06/18/19 17:14	RS	n/a	n/a	V3A7037
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	2.6		0.40	0.095	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17647-74-4	1,4-Dioxane-d8	108%		25-195%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-12270CM-061219-F		
Lab Sample ID:	JC89937-2	**Date Sampled:**	06/12/19
Matrix:	DW - Drinking Water	**Date Received:**	06/13/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B119937.D	1	06/20/19 20:42	BK	n/a	n/a	V1B5791
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	2.5	ug/l	
78-93-3	2-Butanone	ND		5.0	0.43	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.16	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.12	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.13	ug/l	
75-25-2	Bromoform	ND		0.50	0.27	ug/l	
74-83-9	Bromomethane	ND		0.50	0.18	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.068	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.43	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.057	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND		0.50	0.080	ug/l	
67-66-3	Chloroform	ND		0.50	0.17	ug/l	
74-87-3	Chloromethane	ND		0.50	0.13	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.098	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.075	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	7.0	0.50	0.19	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.20	1.0	0.14	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.050	0.50	0.15	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.19	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.17	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.14	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.40	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.14	ug/l	

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-12270CM-061219-F		
Lab Sample ID:	JC89937-2	**Date Sampled:**	06/12/19
Matrix:	DW - Drinking Water	**Date Received:**	06/13/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.14	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.10	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.076	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.13	ug/l	
591-78-6	2-Hexanone	ND		2.0	0.24	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.43	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.11	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	0.22	ug/l	
91-20-3	Naphthalene	ND		0.50	0.28	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.066	ug/l	
100-42-5	Styrene	ND	100	0.50	0.069	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	0.25	200	0.50	0.22	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.19	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.091	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.13	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.055	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.40	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.057	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.23	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.11	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.20	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.19	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.15	ug/l	
	m,p-Xylene	ND		0.50	0.14	ug/l	
95-47-6	o-Xylene	ND		0.50	0.076	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	80%		70-130%
460-00-4	4-Bromofluorobenzene	84%		70-130%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-12270CM-061219-F		
Lab Sample ID:	JC89937-2	**Date Sampled:**	06/12/19
Matrix:	DW - Drinking Water	**Date Received:**	06/13/19
Method:	SW846 8260C BY SIM	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A162481.D	1	06/18/19 17:43	RS	n/a	n/a	V3A7037
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	2.5		0.40	0.095	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17647-74-4	1,4-Dioxane-d8	112%		25-195%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-061219		
Lab Sample ID:	JC89937-3	**Date Sampled:**	06/12/19
Matrix:	DW - Drinking Water TB	**Date Received:**	06/13/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B119935.D	1	06/20/19 19:40	BK	n/a	n/a	V1B5791
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	2.8		5.0	2.5	ug/l	J
78-93-3	2-Butanone	ND		5.0	0.43	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.16	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.12	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.13	ug/l	
75-25-2	Bromoform	ND		0.50	0.27	ug/l	
74-83-9	Bromomethane	ND		0.50	0.18	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.068	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.43	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.057	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND		0.50	0.080	ug/l	
67-66-3	Chloroform	ND		0.50	0.17	ug/l	
74-87-3	Chloromethane	ND		0.50	0.13	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.098	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.075	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	7.0	0.50	0.19	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.20	1.0	0.14	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.050	0.50	0.15	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.19	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.17	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.14	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.40	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.14	ug/l	

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-061219		
Lab Sample ID:	JC89937-3	**Date Sampled:**	06/12/19
Matrix:	DW - Drinking Water TB	**Date Received:**	06/13/19
Method:	EPA 524.2 REV 4.1	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.14	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.10	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.14	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.18	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.076	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.13	ug/l	
591-78-6	2-Hexanone	ND		2.0	0.24	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.43	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.11	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	0.22	ug/l	
91-20-3	Naphthalene	ND		0.50	0.28	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.066	ug/l	
100-42-5	Styrene	ND	100	0.50	0.069	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.19	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.091	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.13	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.055	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.40	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.057	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.23	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.11	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.20	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.19	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.15	ug/l	
	m,p-Xylene	ND		0.50	0.14	ug/l	
95-47-6	o-Xylene	ND		0.50	0.076	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	80%		70-130%
460-00-4	4-Bromofluorobenzene	85%		70-130%

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-061219		
Lab Sample ID:	JC89937-3	**Date Sampled:**	06/12/19
Matrix:	DW - Drinking Water TB	**Date Received:**	06/13/19
Method:	SW846 8260C BY SIM	**Percent Solids:**	n/a
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A162482.D	1	06/18/19 18:12	RS	n/a	n/a	V3A7037
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND		0.40	0.095	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17647-74-4	1,4-Dioxane-d8	109%		25-195%

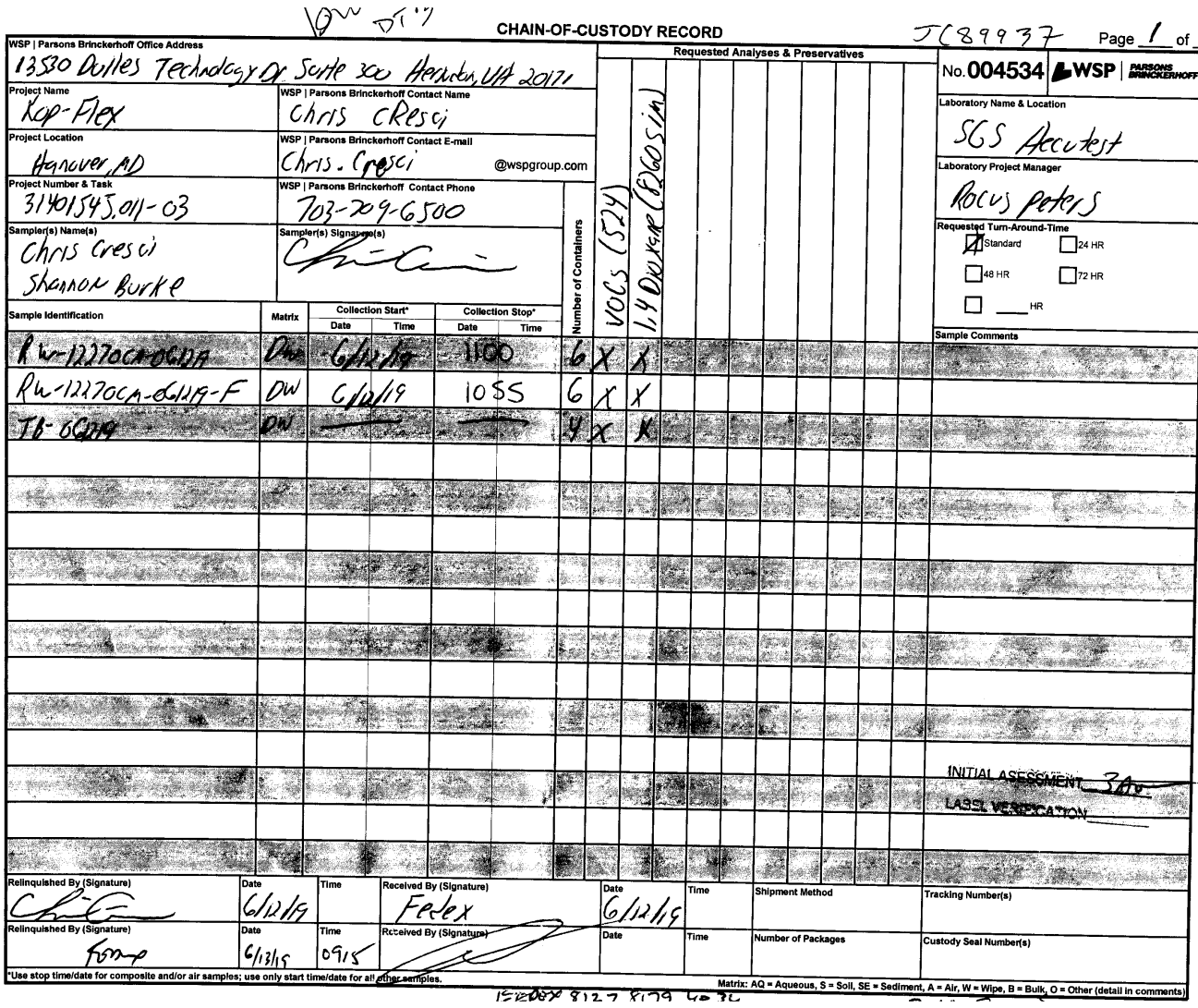
ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN-OF-CUSTODY RECORD

JC89937 Page 1 of 1

WSP | Parsons Brinckerhoff Office Address: 13530 Dulles Technology Dr Suite 300 Herndon, VA 20171

Project Name: Kop-Flex

WSP | Parsons Brinckerhoff Contact Name: Chris Cresci

Project Location: Hanover, MD

WSP | Parsons Brinckerhoff Contact E-mail: Chris.Cresci@wspgroup.com

Project Number & Task: 31401543.011-03

WSP | Parsons Brinckerhoff Contact Phone: 703-209-6500

Sampler(s) Name(s): Chris Cresci, Shannon Burke

Sampler(s) Signature(s):

Requested Analyses & Preservatives

No. 004534 WSP | PARSONS BRINCKERHOFF

Laboratory Name & Location: SGS Accutest

Laboratory Project Manager: Rocus Peters

Requested Turn-Around-Time: [X] Standard [ ] 24 HR [ ] 48 HR [ ] 72 HR [ ] ___ HR

	Sample Identification	Matrix	Collection Start* Date	Collection Start* Time	Collection Stop* Date	Collection Stop* Time	Number of Containers	VOCs (524)	1,4 Dioxane (8260sim)	Sample Comments
1	RW-12270CA-060119-A	DW	6/12/19	1100			6	X	X	
2	RW-12270CA-060119-F	DW	6/12/19	1055			6	X	X	
3	TB-060119	DW					4	X	X	

INITIAL ASSESSMENT JAO

LASSL VERIFICATION

Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Shipment Method	Tracking Number(s)
	6/12/19		Fedex	6/12/19			
Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Number of Packages	Custody Seal Number(s)
	6/13/19	0915					

*Use stop time/date for composite and/or air samples; use only start time/date for all other samples.

Matrix: AQ = Aqueous, S = Soil, SE = Sediment, A = Air, W = Wipe, B = Bulk, O = Other (detail in comments)

SGS Sample Receipt Summary

Job Number: JC89937 **Client:** _____ **Project:** _____

Date / Time Received: 6/13/2019 9:15:00 AM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.1);

Cooler Temps (Corrected) °C: Cooler 1: (2.2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 206717 pH 12+: 208717 Other: (Specify) _____ _____

Comments

SM089-02 Rev. Date 12/1/16

JC89937: Chain of Custody
Page 3 of 5

SGS Sample Receipt Summary

Job Number: JC89937 **Client:** WSP **Project:** 004534

Date / Time Received: 6/13/2019 **Delivery Method:** FedEx **Airbill #'s:**

Cooler Temps (Raw Measured) °C:

Cooler Temps (Corrected) °C:

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:			
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	☐
2. Trip Blank listed on COC:	☐		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 206717 pH 12+: 208717 Other: (Specify)

Comments: -3: Recevied 1 of 4, 40mL HCL Trip Blank vials broken. All other vials have macrobubbles greater than 6mm in diameter.

SM089-02 Rev. Date 12/1/16

Responded to by: Rocus Peters Response Date: 6/18

-3 proceed as stated.

Note >6mm bubbles and proceed with analysis.

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5791-MB	1B119920.D	1	06/20/19	BK	n/a	n/a	V1B5791

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC89937-1, JC89937-2, JC89937-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	2.5	ug/l	
78-93-3	2-Butanone	ND	5.0	0.43	ug/l	
71-43-2	Benzene	ND	0.50	0.16	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.12	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.17	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.13	ug/l	
75-25-2	Bromoform	ND	0.50	0.27	ug/l	
74-83-9	Bromomethane	ND	0.50	0.18	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.068	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.43	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.057	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.18	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.093	ug/l	
75-00-3	Chloroethane	ND	0.50	0.080	ug/l	
67-66-3	Chloroform	ND	0.50	0.17	ug/l	
74-87-3	Chloromethane	ND	0.50	0.13	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.098	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.075	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.24	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.22	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.19	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.14	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.14	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.15	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.18	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.19	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.17	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.31	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.14	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.23	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.40	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.14	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.14	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.10	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.21	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.14	ug/l	

Method Blank Summary

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5791-MB	1B119920.D	1	06/20/19	BK	n/a	n/a	V1B5791

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC89937-1, JC89937-2, JC89937-3

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.18	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.076	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.13	ug/l	
591-78-6	2-Hexanone	ND	2.0	0.24	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.054	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.43	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.11	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	0.22	ug/l	
91-20-3	Naphthalene	ND	0.50	0.28	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.066	ug/l	
100-42-5	Styrene	ND	0.50	0.069	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.20	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.22	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.19	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.091	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.13	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.055	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.40	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.057	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.23	ug/l	
108-88-3	Toluene	ND	0.50	0.11	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.20	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.19	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.15	ug/l	
	m,p-Xylene	ND	0.50	0.14	ug/l	
95-47-6	o-Xylene	ND	0.50	0.076	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.076	ug/l	

CAS No.	Surrogate Recoveries		Limits
2199-69-1	1,2-Dichlorobenzene-d4	81%	70-130%
460-00-4	4-Bromofluorobenzene	90%	70-130%

Method Blank Summary

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5791-MB	1B119920.D	1	06/20/19	BK	n/a	n/a	V1B5791

The QC reported here applies to the following samples: **Method:**

JC89937-1, JC89937-2, JC89937-3

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	3.70	.75	ug/l	J
1066-40-6	Silanol, trimethyl-	9.53	.84	ug/l	JN
	Total TIC, Volatile		.84	ug/l	J

Method Blank Summary

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A7037-MB	3A162465.D	1	06/18/19	RS	n/a	n/a	V3A7037

The QC reported here applies to the following samples: **Method:** SW846 8260C BY SIM

JC89937-1, JC89937-2, JC89937-3

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.095	ug/l	

CAS No.	Surrogate Recoveries		Limits
17647-74-4	1,4-Dioxane-d8	106%	25-195%

Blank Spike Summary

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5791-BS	1B119919.D	1	06/20/19	BK	n/a	n/a	V1B5791

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC89937-1, JC89937-2, JC89937-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	20	22.0	110	70-130
78-93-3	2-Butanone	20	21.0	105	70-130
71-43-2	Benzene	5	4.4	88	70-130
108-86-1	Bromobenzene	5	4.0	80	70-130
74-97-5	Bromochloromethane	5	4.1	82	70-130
75-27-4	Bromodichloromethane	5	4.3	86	70-130
75-25-2	Bromoform	5	4.3	86	70-130
74-83-9	Bromomethane	5	4.7	94	70-130
104-51-8	n-Butylbenzene	5	4.2	84	70-130
135-98-8	sec-Butylbenzene	5	4.2	84	70-130
98-06-6	tert-Butylbenzene	5	4.1	82	70-130
75-15-0	Carbon disulfide	5	4.4	88	70-130
108-90-7	Chlorobenzene	5	4.2	84	70-130
75-00-3	Chloroethane	5	5.7	114	70-130
67-66-3	Chloroform	5	4.2	84	70-130
74-87-3	Chloromethane	5	4.5	90	70-130
95-49-8	o-Chlorotoluene	5	4.1	82	70-130
106-43-4	p-Chlorotoluene	5	4.4	88	70-130
56-23-5	Carbon tetrachloride	5	4.2	84	70-130
75-34-3	1,1-Dichloroethane	5	4.4	88	70-130
75-35-4	1,1-Dichloroethylene	5	4.5	90	70-130
563-58-6	1,1-Dichloropropene	5	4.6	92	70-130
96-12-8	1,2-Dibromo-3-chloropropane	5	4.5	90	70-130
106-93-4	1,2-Dibromoethane	5	5.1	102	70-130
107-06-2	1,2-Dichloroethane	5	4.6	92	70-130
78-87-5	1,2-Dichloropropane	5	4.5	90	70-130
142-28-9	1,3-Dichloropropane	5	4.6	92	70-130
594-20-7	2,2-Dichloropropane	5	4.6	92	70-130
124-48-1	Dibromochloromethane	5	4.2	84	70-130
74-95-3	Dibromomethane	5	4.3	86	70-130
75-71-8	Dichlorodifluoromethane	5	6.1	122	70-130
541-73-1	m-Dichlorobenzene	5	3.9	78	70-130
95-50-1	o-Dichlorobenzene	5	3.8	76	70-130
106-46-7	p-Dichlorobenzene	5	4.0	80	70-130
156-60-5	trans-1,2-Dichloroethylene	5	4.1	82	70-130
156-59-2	cis-1,2-Dichloroethylene	5	4.2	84	70-130

* = Outside of Control Limits.

Blank Spike Summary

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5791-BS	1B119919.D	1	06/20/19	BK	n/a	n/a	V1B5791

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC89937-1, JC89937-2, JC89937-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	5	4.7	94	70-130
10061-02-6	trans-1,3-Dichloropropene	5	4.7	94	70-130
100-41-4	Ethylbenzene	5	4.5	90	70-130
87-68-3	Hexachlorobutadiene	5	3.8	76	70-130
591-78-6	2-Hexanone	20	21.3	107	70-130
98-82-8	Isopropylbenzene	5	4.2	84	70-130
99-87-6	p-Isopropyltoluene	5	4.0	80	70-130
75-09-2	Methylene chloride	5	4.3	86	70-130
1634-04-4	Methyl Tert Butyl Ether	5	4.5	90	70-130
108-10-1	4-Methyl-2-pentanone	20	20.5	103	70-130
91-20-3	Naphthalene	5	4.2	84	70-130
103-65-1	n-Propylbenzene	5	4.3	86	70-130
100-42-5	Styrene	5	4.2	84	70-130
630-20-6	1,1,1,2-Tetrachloroethane	5	4.0	80	70-130
71-55-6	1,1,1-Trichloroethane	5	4.2	84	70-130
79-34-5	1,1,2,2-Tetrachloroethane	5	4.3	86	70-130
79-00-5	1,1,2-Trichloroethane	5	4.5	90	70-130
87-61-6	1,2,3-Trichlorobenzene	5	3.8	76	70-130
96-18-4	1,2,3-Trichloropropane	5	4.2	84	70-130
120-82-1	1,2,4-Trichlorobenzene	5	3.7	74	70-130
95-63-6	1,2,4-Trimethylbenzene	5	4.3	86	70-130
108-67-8	1,3,5-Trimethylbenzene	5	4.2	84	70-130
127-18-4	Tetrachloroethylene	5	4.0	80	70-130
108-88-3	Toluene	5	4.4	88	70-130
79-01-6	Trichloroethylene	5	4.2	84	70-130
75-69-4	Trichlorofluoromethane	5	6.3	126	70-130
75-01-4	Vinyl chloride	5	4.7	94	70-130
	m,p-Xylene	10	8.8	88	70-130
95-47-6	o-Xylene	5	4.4	88	70-130
1330-20-7	Xylenes (total)	15	13.2	88	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2199-69-1	1,2-Dichlorobenzene-d4	88%	70-130%
460-00-4	4-Bromofluorobenzene	97%	70-130%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A7037-BS	3A162463.D	1	06/18/19	RS	n/a	n/a	V3A7037
V3A7037-BSD	3A162464.D	1	06/18/19	RS	n/a	n/a	V3A7037

The QC reported here applies to the following samples: **Method:** SW846 8260C BY SIM

JC89937-1, JC89937-2, JC89937-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
123-91-1	1,4-Dioxane	20	22.9	115	22.2	111	3	48-137/32

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
17647-74-4	1,4-Dioxane-d8	111%	104%	25-195%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC89792-1MS	1B119925.D	1	06/20/19	BK	n/a	n/a	V1B5791
JC89792-1MSD	1B119930.D	1	06/20/19	BK	n/a	n/a	V1B5791
JC89792-1 [a]	1B119922.D	1	06/20/19	BK	n/a	n/a	V1B5791

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC89937-1, JC89937-2, JC89937-3

CAS No.	Compound	JC89792-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		20	28.6	143* [b]	20	21.2	106	30* [b]	41-142/24
78-93-3	2-Butanone	ND		20	29.2	146* [b]	20	21.0	105	33* [b]	55-129/31
71-43-2	Benzene	ND		5	4.7	94	5	4.3	86	9	53-138/16
108-86-1	Bromobenzene	ND		5	5.0	100	5	4.0	80	22* [b]	54-138/17
74-97-5	Bromochloromethane	ND		5	4.3	86	5	3.8	76	12	55-140/13
75-27-4	Bromodichloromethane	ND		5	4.9	98	5	4.1	82	18* [b]	57-147/11
75-25-2	Bromoform	ND		5	5.7	114	5	4.3	86	28* [b]	47-137/13
74-83-9	Bromomethane	ND		5	3.4	68	5	3.5	70	3	40-162/27
104-51-8	n-Butylbenzene	ND		5	4.8	96	5	4.1	82	16	45-144/19
135-98-8	sec-Butylbenzene	ND		5	4.9	98	5	4.1	82	18	46-145/20
98-06-6	tert-Butylbenzene	ND		5	4.6	92	5	3.9	78	16	48-141/17
75-15-0	Carbon disulfide	ND		5	5.4	108	5	5.2	104	4	35-127/32
108-90-7	Chlorobenzene	ND		5	4.7	94	5	4.1	82	14	54-135/15
75-00-3	Chloroethane	ND		5	4.4	88	5	4.2	84	5	38-153/43
67-66-3	Chloroform	ND		5	4.4	88	5	4.0	80	10	57-151/13
74-87-3	Chloromethane	ND		5	2.8	56	5	2.8	56	0	39-165/35
95-49-8	o-Chlorotoluene	ND		5	4.7	94	5	4.0	80	16* [c]	55-142/15
106-43-4	p-Chlorotoluene	ND		5	5.2	104	5	4.3	86	19	55-139/20
56-23-5	Carbon tetrachloride	ND		5	4.6	92	5	4.2	84	9	49-170/24
75-34-3	1,1-Dichloroethane	ND		5	4.5	90	5	4.3	86	5	55-149/13
75-35-4	1,1-Dichloroethylene	ND		5	4.8	96	5	4.4	88	9	42-142/20
563-58-6	1,1-Dichloropropene	ND		5	4.9	98	5	4.6	92	6	46-151/21
96-12-8	1,2-Dibromo-3-chloropropane	ND		5	6.6	132	5	5.5	110	18	48-141/27
106-93-4	1,2-Dibromoethane	ND		5	5.6	112	5	4.6	92	20* [b]	57-135/10
107-06-2	1,2-Dichloroethane	ND		5	4.8	96	5	4.4	88	9	59-166/15
78-87-5	1,2-Dichloropropane	ND		5	4.8	96	5	4.3	86	11	53-142/11
142-28-9	1,3-Dichloropropane	ND		5	5.4	108	5	4.4	88	20* [b]	58-143/13
594-20-7	2,2-Dichloropropane	ND		5	4.9	98	5	4.5	90	9	38-165/19
124-48-1	Dibromochloromethane	ND		5	5.4	108	5	4.2	84	25* [b]	55-138/15
74-95-3	Dibromomethane	ND		5	4.8	96	5	4.1	82	16* [b]	61-144/10
75-71-8	Dichlorodifluoromethane	ND		5	4.8	96	5	4.7	94	2	23-172/30
541-73-1	m-Dichlorobenzene	ND		5	4.8	96	5	3.9	78	21* [b]	53-138/17
95-50-1	o-Dichlorobenzene	ND		5	5.0	100	5	4.0	80	22* [b]	54-140/11
106-46-7	p-Dichlorobenzene	ND		5	4.9	98	5	3.9	78	23* [b]	53-137/14
156-60-5	trans-1,2-Dichloroethylene	ND		5	4.4	88	5	3.9	78	12	47-148/22
156-59-2	cis-1,2-Dichloroethylene	ND		5	4.5	90	5	4.0	80	12	51-146/14

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC89792-1MS	1B119925.D	1	06/20/19	BK	n/a	n/a	V1B5791
JC89792-1MSD	1B119930.D	1	06/20/19	BK	n/a	n/a	V1B5791
JC89792-1 [a]	1B119922.D	1	06/20/19	BK	n/a	n/a	V1B5791

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC89937-1, JC89937-2, JC89937-3

CAS No.	Compound	JC89792-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND		5	5.2	104	5	4.3	86	19* [b]	51-136/11
10061-02-6	trans-1,3-Dichloropropene	ND		5	5.5	110	5	4.4	88	22* [b]	54-142/10
100-41-4	Ethylbenzene	ND		5	4.8	96	5	4.2	84	13	51-138/18
87-68-3	Hexachlorobutadiene	ND		5	4.6	92	5	3.8	76	19	40-154/21
591-78-6	2-Hexanone	ND		20	32.3	162* [b]	20	24.3	122	28	53-128/29
98-82-8	Isopropylbenzene	ND		5	4.7	94	5	4.0	80	16	49-139/16
99-87-6	p-Isopropyltoluene	ND		5	4.6	92	5	4.0	80	14	45-141/17
75-09-2	Methylene chloride	ND		5	4.3	86	5	4.0	80	7	54-137/14
1634-04-4	Methyl Tert Butyl Ether	ND		5	4.9	98	5	4.1	82	18* [b]	53-143/10
108-10-1	4-Methyl-2-pentanone	ND		20	30.1	151* [b]	20	22.4	112	29	58-127/32
91-20-3	Naphthalene	ND		5	5.8	116	5	4.4	88	27* [b]	44-140/14
103-65-1	n-Propylbenzene	ND		5	4.9	98	5	4.3	86	13	50-142/20
100-42-5	Styrene	ND		5	4.8	96	5	4.0	80	18	23-130/20
630-20-6	1,1,1,2-Tetrachloroethane	ND		5	4.8	96	5	3.9	78	21* [b]	57-144/11
71-55-6	1,1,1-Trichloroethane	ND		5	4.6	92	5	4.2	84	9	52-164/13
79-34-5	1,1,2,2-Tetrachloroethane	ND		5	6.3	126	5	4.9	98	25* [b]	58-138/10
79-00-5	1,1,2-Trichloroethane	ND		5	5.5	110	5	4.4	88	22* [b]	59-139/11
87-61-6	1,2,3-Trichlorobenzene	ND		5	4.8	96	5	3.7	74	26* [b]	47-141/17
96-18-4	1,2,3-Trichloropropane	ND		5	6.1	122	5	4.7	94	26* [b]	56-148/15
120-82-1	1,2,4-Trichlorobenzene	ND		5	4.8	96	5	3.7	74	26* [b]	46-137/17
95-63-6	1,2,4-Trimethylbenzene	ND		5	4.9	98	5	4.0	80	20* [b]	41-138/16
108-67-8	1,3,5-Trimethylbenzene	ND		5	4.8	96	5	4.0	80	18* [b]	45-138/16
127-18-4	Tetrachloroethylene	ND		5	4.4	88	5	3.9	78	12	45-145/19
108-88-3	Toluene	ND		5	4.7	94	5	4.3	86	9	52-134/19
79-01-6	Trichloroethylene	ND		5	4.6	92	5	4.1	82	11	54-143/15
75-69-4	Trichlorofluoromethane	ND		5	4.9	98	5	4.7	94	4	36-167/28
75-01-4	Vinyl chloride	ND		5	3.7	74	5	3.7	74	0	35-162/30
	m,p-Xylene	ND		10	9.6	96	10	8.4	84	13	49-135/18
95-47-6	o-Xylene	ND		5	4.9	98	5	4.1	82	18	49-134/19
1330-20-7	Xylenes (total)	ND		15	14.5	97	15	12.6	84	14	50-134/18

CAS No.	Surrogate Recoveries	MS	MSD	JC89792-1	Limits
2199-69-1	1,2-Dichlorobenzene-d4	86%	85%	79%	70-130%
460-00-4	4-Bromofluorobenzene	95%	94%	87%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC89792-1MS	1B119925.D	1	06/20/19	BK	n/a	n/a	V1B5791
JC89792-1MSD	1B119930.D	1	06/20/19	BK	n/a	n/a	V1B5791
JC89792-1 [a]	1B119922.D	1	06/20/19	BK	n/a	n/a	V1B5791

The QC reported here applies to the following samples: **Method:** EPA 524.2 REV 4.1

JC89937-1, JC89937-2, JC89937-3

(a) EPA 524.2 is not a certified method for non-potable water samples.
(b) Outside control limits due to matrix interference.
(c) Outside in house control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC89866-1MS	3A162471.D	1	06/18/19	RS	n/a	n/a	V3A7037
JC89866-1MSD	3A162472.D	1	06/18/19	RS	n/a	n/a	V3A7037
JC89866-1	3A162468.D	1	06/18/19	RS	n/a	n/a	V3A7037

The QC reported here applies to the following samples: **Method:** SW846 8260C BY SIM

JC89937-1, JC89937-2, JC89937-3

CAS No.	Compound	JC89866-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
123-91-1	1,4-Dioxane	19.3		20	39.1	99	20	41.0	109	5	28-162/64

CAS No.	Surrogate Recoveries	MS	MSD	JC89866-1	Limits
17647-74-4	1,4-Dioxane-d8	114%	118%	152%	25-195%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample:	V1B5774-BFB	**Injection Date:**	05/22/19
Lab File ID:	1B119565.D	**Injection Time:**	09:31
Instrument ID:	GCMS1B		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.99 - 40.0% of mass 95	2716	17.5		Pass
75	30.0 - 80.0% of mass 95	7338	47.2		Pass
95	Base peak, 100% relative abundance	15558	100.0		Pass
96	5.0 - 9.0% of mass 95	1141	7.33		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	12892	82.9		Pass
175	5.0 - 9.0% of mass 174	1054	6.77	(8.18) [a]	Pass
176	95.0 - 101.0% of mass 174	12308	79.1	(95.5) [a]	Pass
177	5.0 - 9.0% of mass 176	811	5.21	(6.59) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5774-IC5774	1B119566.D	05/22/19	10:04	00:33	Initial cal 0.2
V1B5774-IC5774	1B119567.D	05/22/19	10:37	01:06	Initial cal 0.5
V1B5774-IC5774	1B119568.D	05/22/19	11:07	01:36	Initial cal 1
V1B5774-IC5774	1B119569.D	05/22/19	11:38	02:07	Initial cal 2
V1B5774-IC5774	1B119570.D	05/22/19	12:09	02:38	Initial cal 5
V1B5774-ICC5774	1B119571.D	05/22/19	12:41	03:10	Initial cal 10
V1B5774-IC5774	1B119572.D	05/22/19	13:12	03:41	Initial cal 20
V1B5774-IC5774	1B119573.D	05/22/19	13:43	04:12	Initial cal 40
V1B5774-IC5774	1B119574.D	05/22/19	14:14	04:43	Initial cal 80
V1B5774-ICV5774	1B119577.D	05/22/19	15:47	06:16	Initial cal verification 10

Instrument Performance Check (BFB)

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample: V1B5791-BFB
Lab File ID: 1B119918.D
Instrument ID: GCMS1B
Injection Date: 06/20/19
Injection Time: 11:22

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	14.99 - 40.0% of mass 95	4121	20.3		Pass
75	30.0 - 80.0% of mass 95	10167	50.0		Pass
95	Base peak, 100% relative abundance	20325	100.0		Pass
96	5.0 - 9.0% of mass 95	1502	7.39		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	14756	72.6		Pass
175	5.0 - 9.0% of mass 174	1085	5.34	(7.35) [a]	Pass
176	95.0 - 101.0% of mass 174	14747	72.6	(99.9) [a]	Pass
177	5.0 - 9.0% of mass 176	954	4.69	(6.47) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5791-BS	1B119919.D	06/20/19	11:53	00:31	Blank Spike
V1B5791-CC5774	1B119919.D	06/20/19	11:53	00:31	Continuing cal 5
V1B5791-MB	1B119920.D	06/20/19	12:24	01:02	Method Blank
JC89792-1	1B119922.D	06/20/19	12:56	01:34	(used for QC only; not part of job JC89937)
ZZZZZZ	1B119923.D	06/20/19	13:27	02:05	(unrelated sample)
ZZZZZZ	1B119924.D	06/20/19	13:58	02:36	(unrelated sample)
JC89792-1MS	1B119925.D	06/20/19	14:29	03:07	Matrix Spike
ZZZZZZ	1B119927.D	06/20/19	15:30	04:08	(unrelated sample)
ZZZZZZ	1B119928.D	06/20/19	16:02	04:40	(unrelated sample)
ZZZZZZ	1B119929.D	06/20/19	16:33	05:11	(unrelated sample)
JC89792-1MSD	1B119930.D	06/20/19	17:04	05:42	Matrix Spike Duplicate
ZZZZZZ	1B119931.D	06/20/19	17:35	06:13	(unrelated sample)
ZZZZZZ	1B119932.D	06/20/19	18:06	06:44	(unrelated sample)
ZZZZZZ	1B119933.D	06/20/19	18:38	07:16	(unrelated sample)
ZZZZZZ	1B119934.D	06/20/19	19:09	07:47	(unrelated sample)
JC89937-3	1B119935.D	06/20/19	19:40	08:18	TB-061219
JC89937-1	1B119936.D	06/20/19	20:11	08:49	RW-12270CM-061219
JC89937-2	1B119937.D	06/20/19	20:42	09:20	RW-12270CM-061219-F
ZZZZZZ	1B119938.D	06/20/19	21:13	09:51	(unrelated sample)
ZZZZZZ	1B119939.D	06/20/19	21:44	10:22	(unrelated sample)
ZZZZZZ	1B119940.D	06/20/19	22:15	10:53	(unrelated sample)
ZZZZZZ	1B119941.D	06/20/19	22:46	11:24	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample:	V3A6923-BFB	**Injection Date:**	07/18/18
Lab File ID:	3A160428.D	**Injection Time:**	16:55
Instrument ID:	GCMS3A		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	25408	20.8		Pass
75	30.0 - 60.0% of mass 95	62880	51.6		Pass
95	Base peak, 100% relative abundance	121864	100.0		Pass
96	5.0 - 9.0% of mass 95	8101	6.65		Pass
173	Less than 2.0% of mass 174	826	0.68	(0.81) [a]	Pass
174	50.0 - 120.0% of mass 95	102317	84.0		Pass
175	5.0 - 9.0% of mass 174	8168	6.70	(7.98) [a]	Pass
176	95.0 - 101.0% of mass 174	100370	82.4	(98.1) [a]	Pass
177	5.0 - 9.0% of mass 176	6691	5.49	(6.67) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A6923-IC6923	3A160429.D	07/18/18	17:26	00:31	Initial cal 0.25
V3A6923-IC6923	3A160430.D	07/18/18	17:52	00:57	Initial cal 0.4
V3A6923-IC6923	3A160431.D	07/18/18	18:18	01:23	Initial cal 1
V3A6923-IC6923	3A160432.D	07/18/18	18:43	01:48	Initial cal 2
V3A6923-IC6923	3A160433.D	07/18/18	19:09	02:14	Initial cal 5
V3A6923-ICC6923	3A160434.D	07/18/18	19:35	02:40	Initial cal 20
V3A6923-IC6923	3A160435.D	07/18/18	20:00	03:05	Initial cal 50
V3A6923-IC6923	3A160436.D	07/18/18	20:26	03:31	Initial cal 100
V3A6923-IC6923	3A160437.D	07/18/18	20:52	03:57	Initial cal 200
V3A6923-ICV6923	3A160443.D	07/18/18	23:25	06:30	Initial cal verification 20

Instrument Performance Check (BFB)

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample: V3A7037-BFB
Lab File ID: 3A162461.D
Instrument ID: GCMS3A
Injection Date: 06/18/19
Injection Time: 07:59

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	12816	22.4		Pass
75	30.0 - 60.0% of mass 95	29515	51.5		Pass
95	Base peak, 100% relative abundance	57328	100.0		Pass
96	5.0 - 9.0% of mass 95	4135	7.21		Pass
173	Less than 2.0% of mass 174	221	0.39	(0.59) [a]	Pass
174	50.0 - 120.0% of mass 95	37379	65.2		Pass
175	5.0 - 9.0% of mass 174	2964	5.17	(7.93) [a]	Pass
176	95.0 - 101.0% of mass 174	35723	62.3	(95.6) [a]	Pass
177	5.0 - 9.0% of mass 176	2509	4.38	(7.02) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A7037-CC6923	3A162462.D	06/18/19	08:32	00:33	Continuing cal 5
V3A7037-BS	3A162463.D	06/18/19	09:01	01:02	Blank Spike
V3A7037-BSD	3A162464.D	06/18/19	09:30	01:31	Blank Spike Duplicate
V3A7037-MB	3A162465.D	06/18/19	10:00	02:01	Method Blank
ZZZZZZ	3A162466.D	06/18/19	10:32	02:33	(unrelated sample)
ZZZZZZ	3A162467.D	06/18/19	11:01	03:02	(unrelated sample)
JC89866-1	3A162468.D	06/18/19	11:30	03:31	(used for QC only; not part of job JC89937)
ZZZZZZ	3A162469.D	06/18/19	11:59	04:00	(unrelated sample)
ZZZZZZ	3A162470.D	06/18/19	12:28	04:29	(unrelated sample)
JC89866-1MS	3A162471.D	06/18/19	12:56	04:57	Matrix Spike
JC89866-1MSD	3A162472.D	06/18/19	13:25	05:26	Matrix Spike Duplicate
ZZZZZZ	3A162474.D	06/18/19	14:22	06:23	(unrelated sample)
ZZZZZZ	3A162475.D	06/18/19	14:51	06:52	(unrelated sample)
ZZZZZZ	3A162476.D	06/18/19	15:20	07:21	(unrelated sample)
ZZZZZZ	3A162477.D	06/18/19	15:49	07:50	(unrelated sample)
ZZZZZZ	3A162478.D	06/18/19	16:17	08:18	(unrelated sample)
ZZZZZZ	3A162479.D	06/18/19	16:46	08:47	(unrelated sample)
JC89937-1	3A162480.D	06/18/19	17:14	09:15	RW-12270CM-061219
JC89937-2	3A162481.D	06/18/19	17:43	09:44	RW-12270CM-061219-F
JC89937-3	3A162482.D	06/18/19	18:12	10:13	TB-061219
ZZZZZZ	3A162483.D	06/18/19	18:40	10:41	(unrelated sample)

Surrogate Recovery Summary

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Method: EPA 524.2 REV 4.1 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2
JC89937-1	1B119936.D	79	84
JC89937-2	1B119937.D	80	84
JC89937-3	1B119935.D	80	85
JC89792-1MS	1B119925.D	86	95
JC89792-1MSD	1B119930.D	85	94
V1B5791-BS	1B119919.D	88	97
V1B5791-MB	1B119920.D	81	90

Surrogate Compounds	Recovery Limits
S1 = 1,2-Dichlorobenzene-d4	70-130%
S2 = 4-Bromofluorobenzene	70-130%

Surrogate Recovery Summary

Job Number: JC89937
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Method: SW846 8260C BY SIM **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
JC89937-1	3A162480.D	108
JC89937-2	3A162481.D	112
JC89937-3	3A162482.D	109
JC89866-1MS	3A162471.D	114
JC89866-1MSD	3A162472.D	118
V3A7037-BS	3A162463.D	111
V3A7037-BSD	3A162464.D	104
V3A7037-MB	3A162465.D	106

Surrogate Compounds	Recovery Limits
S1 = 1,4-Dioxane-d8	25-195%

ENCLOSURE B – LABORATORY ANALYTICAL REPORT FOR OFFSITE GROUNDWATER MONITORING WELL SAMPLES (MAY 2019)

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

June 03, 2019

Eric Johnson
WSP USA
13530 Dulles Technology Drive
Suite 300
Herndon, VA 20171

RE: Project: Kopflex offsite
Pace Project No.: 92430519

Dear Eric Johnson:
Enclosed are the analytical results for sample(s) received by the laboratory on May 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.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Taylor Ezell
taylor.ezell@pacelabs.com
(704)875-9092
Project Manager

Enclosures

cc: Molly Long, WSP

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: Kopflex offsite
Pace Project No.: 92430519

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: Kopflex offsite
Pace Project No.: 92430519

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92430519001	**MW-46D**	Water	05/21/19 17:05	05/24/19 09:50
92430519002	**MW-45**	Water	05/22/19 08:45	05/24/19 09:50
92430519003	**MW-24D**	Water	05/22/19 09:05	05/24/19 09:50
92430519004	**MW-31D**	Water	05/22/19 10:45	05/24/19 09:50
92430519005	**MW-35D**	Water	05/22/19 11:10	05/24/19 09:50
92430519006	**MW-34D**	Water	05/22/19 11:30	05/24/19 09:50
92430519007	**MW-32D**	Water	05/22/19 11:55	05/24/19 09:50
92430519008	**MW-36D**	Water	05/22/19 12:10	05/24/19 09:50
92430519009	**MW-33D-235**	Water	05/22/19 13:55	05/24/19 09:50
92430519010	**MW-33D-295**	Water	05/22/19 13:45	05/24/19 09:50
92430519011	**MW-30D-273**	Water	05/22/19 14:20	05/24/19 09:50
92430519012	**MW-30D-413**	Water	05/22/19 14:25	05/24/19 09:50
92430519013	**MW-29D**	Water	05/22/19 14:45	05/24/19 09:50
92430519014	**MW-28D**	Water	05/22/19 15:20	05/24/19 09:50
92430519015	**DUP 052219A**	Water	05/22/19 09:00	05/24/19 09:50
92430519016	**MW-25D-130**	Water	05/22/19 15:55	05/24/19 09:50
92430519017	**MW-25D-190**	Water	05/22/19 15:40	05/24/19 09:50
92430519018	**Trip Blank**	Water	05/22/19 00:00	05/24/19 09:50

Pace Analytical Services, LLC
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Huntersville, NC 28078
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SAMPLE ANALYTE COUNT

Project: Kopflex offsite
Pace Project No.: 92430519

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92430519001	MW-46D	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519002	MW-45	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519003	MW-24D	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519004	MW-31D	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519005	MW-35D	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519006	MW-34D	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519007	MW-32D	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519008	MW-36D	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519009	MW-33D-235	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519010	MW-33D-295	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519011	MW-30D-273	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519012	MW-30D-413	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519013	MW-29D	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519014	MW-28D	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519015	DUP 052219A	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519016	MW-25D-130	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519017	MW-25D-190	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C
92430519018	Trip Blank	EPA 8260B	DLK	63	PASI-C
		EPA 8260B Mod.	SAS	3	PASI-C

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ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-46D **Lab ID: 92430519001** Collected: 05/21/19 17:05 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 16:09	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 16:09	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 16:09	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 16:09	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 16:09	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 16:09	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 16:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 16:09	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 16:09	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 16:09	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 16:09	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 16:09	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 16:09	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 16:09	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 16:09	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 16:09	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 16:09	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 16:09	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 16:09	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 16:09	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 16:09	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 16:09	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 16:09	75-71-8	
1,1-Dichloroethane	**26.1**	ug/L	1.0	1		05/30/19 16:09	75-34-3	
1,2-Dichloroethane	**1.0**	ug/L	1.0	1		05/30/19 16:09	107-06-2	
1,1-Dichloroethene	**125**	ug/L	1.0	1		05/30/19 16:09	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 16:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 16:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 16:09	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 16:09	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 16:09	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 16:09	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 16:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 16:09	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 16:09	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 16:09	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 16:09	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 16:09	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 16:09	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 16:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 16:09	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 16:09	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 16:09	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 16:09	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 16:09	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 16:09	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 16:09	127-18-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-46D **Lab ID: 92430519001** Collected: 05/21/19 17:05 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 16:09	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 16:09	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 16:09	120-82-1	
1,1,1-Trichloroethane	**10.2**	ug/L	1.0	1		05/30/19 16:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 16:09	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 16:09	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 16:09	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 16:09	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 16:09	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 16:09	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 16:09	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 16:09	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 16:09	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	1		05/30/19 16:09	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130	1		05/30/19 16:09	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/30/19 16:09	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	**88.0**	ug/L	2.0	1		05/29/19 13:28	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%	50-150	1		05/29/19 13:28	17060-07-0	
Toluene-d8 (S)	103	%	50-150	1		05/29/19 13:28	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-45 **Lab ID: 92430519002** Collected: 05/22/19 08:45 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	50.0	2		05/29/19 18:14	67-64-1	
Benzene	ND	ug/L	2.0	2		05/29/19 18:14	71-43-2	
Bromobenzene	ND	ug/L	2.0	2		05/29/19 18:14	108-86-1	
Bromochloromethane	ND	ug/L	2.0	2		05/29/19 18:14	74-97-5	
Bromodichloromethane	ND	ug/L	2.0	2		05/29/19 18:14	75-27-4	
Bromoform	ND	ug/L	2.0	2		05/29/19 18:14	75-25-2	
Bromomethane	ND	ug/L	4.0	2		05/29/19 18:14	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	2		05/29/19 18:14	78-93-3	
Carbon tetrachloride	ND	ug/L	2.0	2		05/29/19 18:14	56-23-5	
Chlorobenzene	ND	ug/L	2.0	2		05/29/19 18:14	108-90-7	
Chloroethane	ND	ug/L	2.0	2		05/29/19 18:14	75-00-3	
Chloroform	ND	ug/L	10.0	2		05/29/19 18:14	67-66-3	
Chloromethane	ND	ug/L	2.0	2		05/29/19 18:14	74-87-3	
2-Chlorotoluene	ND	ug/L	2.0	2		05/29/19 18:14	95-49-8	
4-Chlorotoluene	ND	ug/L	2.0	2		05/29/19 18:14	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	10.0	2		05/29/19 18:14	96-12-8	
Dibromochloromethane	ND	ug/L	2.0	2		05/29/19 18:14	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	2		05/29/19 18:14	106-93-4	
Dibromomethane	ND	ug/L	2.0	2		05/29/19 18:14	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.0	2		05/29/19 18:14	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	2		05/29/19 18:14	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	2		05/29/19 18:14	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.0	2		05/29/19 18:14	75-71-8	
1,1-Dichloroethane	ND	ug/L	2.0	2		05/29/19 18:14	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.0	2		05/29/19 18:14	107-06-2	
1,1-Dichloroethene	ND	ug/L	2.0	2		05/29/19 18:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2.0	2		05/29/19 18:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.0	2		05/29/19 18:14	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	2		05/29/19 18:14	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.0	2		05/29/19 18:14	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.0	2		05/29/19 18:14	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.0	2		05/29/19 18:14	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.0	2		05/29/19 18:14	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	2		05/29/19 18:14	10061-02-6	
Diisopropyl ether	ND	ug/L	2.0	2		05/29/19 18:14	108-20-3	
Ethylbenzene	ND	ug/L	2.0	2		05/29/19 18:14	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	2		05/29/19 18:14	87-68-3	
2-Hexanone	ND	ug/L	10.0	2		05/29/19 18:14	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.0	2		05/29/19 18:14	99-87-6	
Methylene Chloride	ND	ug/L	10.0	2		05/29/19 18:14	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	2		05/29/19 18:14	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.0	2		05/29/19 18:14	1634-04-4	
Naphthalene	ND	ug/L	2.0	2		05/29/19 18:14	91-20-3	
Styrene	ND	ug/L	2.0	2		05/29/19 18:14	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.0	2		05/29/19 18:14	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	2		05/29/19 18:14	79-34-5	
Tetrachloroethene	ND	ug/L	2.0	2		05/29/19 18:14	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-45 **Lab ID: 92430519002** Collected: 05/22/19 08:45 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	2.0	2		05/29/19 18:14	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	2		05/29/19 18:14	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	2		05/29/19 18:14	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	2.0	2		05/29/19 18:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	2		05/29/19 18:14	79-00-5	
Trichloroethene	ND	ug/L	2.0	2		05/29/19 18:14	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	2		05/29/19 18:14	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.0	2		05/29/19 18:14	96-18-4	
Vinyl acetate	ND	ug/L	4.0	2		05/29/19 18:14	108-05-4	
Vinyl chloride	ND	ug/L	2.0	2		05/29/19 18:14	75-01-4	
Xylene (Total)	ND	ug/L	2.0	2		05/29/19 18:14	1330-20-7	
m&p-Xylene	ND	ug/L	4.0	2		05/29/19 18:14	179601-23-1	
o-Xylene	ND	ug/L	2.0	2		05/29/19 18:14	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	94	%	70-130	2		05/29/19 18:14	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130	2		05/29/19 18:14	17060-07-0	
Toluene-d8 (S)	98	%	70-130	2		05/29/19 18:14	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/29/19 13:48	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	50-150	1		05/29/19 13:48	17060-07-0	
Toluene-d8 (S)	102	%	50-150	1		05/29/19 13:48	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-24D **Lab ID: 92430519003** Collected: 05/22/19 09:05 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	250	10		06/01/19 07:14	67-64-1	
Benzene	ND	ug/L	10.0	10		06/01/19 07:14	71-43-2	
Bromobenzene	ND	ug/L	10.0	10		06/01/19 07:14	108-86-1	
Bromochloromethane	ND	ug/L	10.0	10		06/01/19 07:14	74-97-5	
Bromodichloromethane	ND	ug/L	10.0	10		06/01/19 07:14	75-27-4	
Bromoform	ND	ug/L	10.0	10		06/01/19 07:14	75-25-2	
Bromomethane	ND	ug/L	20.0	10		06/01/19 07:14	74-83-9	
2-Butanone (MEK)	ND	ug/L	50.0	10		06/01/19 07:14	78-93-3	
Carbon tetrachloride	ND	ug/L	10.0	10		06/01/19 07:14	56-23-5	
Chlorobenzene	ND	ug/L	10.0	10		06/01/19 07:14	108-90-7	
Chloroethane	ND	ug/L	10.0	10		06/01/19 07:14	75-00-3	
Chloroform	ND	ug/L	50.0	10		06/01/19 07:14	67-66-3	
Chloromethane	ND	ug/L	10.0	10		06/01/19 07:14	74-87-3	
2-Chlorotoluene	ND	ug/L	10.0	10		06/01/19 07:14	95-49-8	
4-Chlorotoluene	ND	ug/L	10.0	10		06/01/19 07:14	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	50.0	10		06/01/19 07:14	96-12-8	
Dibromochloromethane	ND	ug/L	10.0	10		06/01/19 07:14	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	10.0	10		06/01/19 07:14	106-93-4	
Dibromomethane	ND	ug/L	10.0	10		06/01/19 07:14	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	10.0	10		06/01/19 07:14	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	10.0	10		06/01/19 07:14	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	10.0	10		06/01/19 07:14	106-46-7	
Dichlorodifluoromethane	ND	ug/L	10.0	10		06/01/19 07:14	75-71-8	
1,1-Dichloroethane	**66.2**	ug/L	10.0	10		06/01/19 07:14	75-34-3	
1,2-Dichloroethane	ND	ug/L	10.0	10		06/01/19 07:14	107-06-2	
1,1-Dichloroethene	**1190**	ug/L	10.0	10		06/01/19 07:14	75-35-4	M1
cis-1,2-Dichloroethene	ND	ug/L	10.0	10		06/01/19 07:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	10.0	10		06/01/19 07:14	156-60-5	
1,2-Dichloropropane	ND	ug/L	10.0	10		06/01/19 07:14	78-87-5	
1,3-Dichloropropane	ND	ug/L	10.0	10		06/01/19 07:14	142-28-9	
2,2-Dichloropropane	ND	ug/L	10.0	10		06/01/19 07:14	594-20-7	
1,1-Dichloropropene	ND	ug/L	10.0	10		06/01/19 07:14	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	10.0	10		06/01/19 07:14	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	10.0	10		06/01/19 07:14	10061-02-6	
Diisopropyl ether	ND	ug/L	10.0	10		06/01/19 07:14	108-20-3	
Ethylbenzene	ND	ug/L	10.0	10		06/01/19 07:14	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	10.0	10		06/01/19 07:14	87-68-3	
2-Hexanone	ND	ug/L	50.0	10		06/01/19 07:14	591-78-6	
p-Isopropyltoluene	ND	ug/L	10.0	10		06/01/19 07:14	99-87-6	
Methylene Chloride	ND	ug/L	50.0	10		06/01/19 07:14	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	50.0	10		06/01/19 07:14	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	10.0	10		06/01/19 07:14	1634-04-4	
Naphthalene	ND	ug/L	10.0	10		06/01/19 07:14	91-20-3	
Styrene	ND	ug/L	10.0	10		06/01/19 07:14	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	10.0	10		06/01/19 07:14	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	10.0	10		06/01/19 07:14	79-34-5	L2
Tetrachloroethene	ND	ug/L	10.0	10		06/01/19 07:14	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-24D **Lab ID: 92430519003** Collected: 05/22/19 09:05 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	10.0	10		06/01/19 07:14	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	10.0	10		06/01/19 07:14	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	10.0	10		06/01/19 07:14	120-82-1	
1,1,1-Trichloroethane	**18.0**	ug/L	10.0	10		06/01/19 07:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	10.0	10		06/01/19 07:14	79-00-5	
Trichloroethene	ND	ug/L	10.0	10		06/01/19 07:14	79-01-6	
Trichlorofluoromethane	ND	ug/L	10.0	10		06/01/19 07:14	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	10.0	10		06/01/19 07:14	96-18-4	
Vinyl acetate	ND	ug/L	20.0	10		06/01/19 07:14	108-05-4	L2
Vinyl chloride	ND	ug/L	10.0	10		06/01/19 07:14	75-01-4	
Xylene (Total)	ND	ug/L	10.0	10		06/01/19 07:14	1330-20-7	
m&p-Xylene	ND	ug/L	20.0	10		06/01/19 07:14	179601-23-1	
o-Xylene	ND	ug/L	10.0	10		06/01/19 07:14	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	10		06/01/19 07:14	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130	10		06/01/19 07:14	17060-07-0	
Toluene-d8 (S)	102	%	70-130	10		06/01/19 07:14	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	**359**	ug/L	10.0	5		05/29/19 14:07	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	50-150	5		05/29/19 14:07	17060-07-0	
Toluene-d8 (S)	104	%	50-150	5		05/29/19 14:07	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-31D **Lab ID: 92430519004** Collected: 05/22/19 10:45 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 16:45	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 16:45	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 16:45	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 16:45	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 16:45	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 16:45	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 16:45	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 16:45	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 16:45	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 16:45	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 16:45	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 16:45	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 16:45	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 16:45	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 16:45	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 16:45	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 16:45	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 16:45	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 16:45	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 16:45	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 16:45	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 16:45	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 16:45	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/30/19 16:45	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/30/19 16:45	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/30/19 16:45	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 16:45	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 16:45	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 16:45	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 16:45	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 16:45	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 16:45	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 16:45	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 16:45	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 16:45	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 16:45	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 16:45	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 16:45	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 16:45	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 16:45	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 16:45	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 16:45	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 16:45	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 16:45	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 16:45	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 16:45	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 16:45	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-31D **Lab ID: 92430519004** Collected: 05/22/19 10:45 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 16:45	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 16:45	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 16:45	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/30/19 16:45	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 16:45	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 16:45	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 16:45	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 16:45	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 16:45	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 16:45	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 16:45	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 16:45	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 16:45	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/30/19 16:45	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130	1		05/30/19 16:45	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		05/30/19 16:45	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/29/19 14:26	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	96	%	50-150	1		05/29/19 14:26	17060-07-0	
Toluene-d8 (S)	102	%	50-150	1		05/29/19 14:26	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-35D **Lab ID: 92430519005** Collected: 05/22/19 11:10 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 17:03	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 17:03	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 17:03	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 17:03	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 17:03	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 17:03	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 17:03	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 17:03	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 17:03	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 17:03	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 17:03	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 17:03	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 17:03	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 17:03	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 17:03	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 17:03	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 17:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 17:03	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 17:03	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:03	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:03	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:03	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 17:03	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/30/19 17:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/30/19 17:03	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/30/19 17:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 17:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 17:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 17:03	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 17:03	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 17:03	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 17:03	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 17:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 17:03	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 17:03	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 17:03	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 17:03	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 17:03	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 17:03	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 17:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 17:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 17:03	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 17:03	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 17:03	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 17:03	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 17:03	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 17:03	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-35D **Lab ID: 92430519005** Collected: 05/22/19 11:10 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 17:03	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:03	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/30/19 17:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 17:03	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 17:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 17:03	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 17:03	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 17:03	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 17:03	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 17:03	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 17:03	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 17:03	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	1		05/30/19 17:03	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130	1		05/30/19 17:03	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/30/19 17:03	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/29/19 14:46	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%	50-150	1		05/29/19 14:46	17060-07-0	
Toluene-d8 (S)	104	%	50-150	1		05/29/19 14:46	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-34D **Lab ID: 92430519006** Collected: 05/22/19 11:30 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 17:21	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 17:21	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 17:21	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 17:21	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 17:21	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 17:21	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 17:21	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 17:21	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 17:21	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 17:21	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 17:21	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 17:21	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 17:21	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 17:21	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 17:21	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 17:21	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 17:21	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 17:21	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 17:21	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:21	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:21	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:21	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 17:21	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/30/19 17:21	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/30/19 17:21	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/30/19 17:21	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 17:21	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 17:21	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 17:21	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 17:21	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 17:21	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 17:21	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 17:21	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 17:21	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 17:21	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 17:21	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 17:21	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 17:21	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 17:21	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 17:21	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 17:21	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 17:21	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 17:21	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 17:21	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 17:21	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 17:21	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 17:21	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-34D **Lab ID: 92430519006** Collected: 05/22/19 11:30 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 17:21	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:21	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:21	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/30/19 17:21	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 17:21	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 17:21	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 17:21	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 17:21	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 17:21	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 17:21	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 17:21	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 17:21	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 17:21	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		05/30/19 17:21	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130	1		05/30/19 17:21	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/30/19 17:21	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/29/19 15:05	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%	50-150	1		05/29/19 15:05	17060-07-0	
Toluene-d8 (S)	102	%	50-150	1		05/29/19 15:05	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-32D **Lab ID: 92430519007** Collected: 05/22/19 11:55 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 17:39	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 17:39	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 17:39	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 17:39	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 17:39	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 17:39	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 17:39	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 17:39	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 17:39	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 17:39	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 17:39	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 17:39	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 17:39	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 17:39	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 17:39	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 17:39	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 17:39	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 17:39	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 17:39	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:39	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:39	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:39	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 17:39	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/30/19 17:39	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/30/19 17:39	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/30/19 17:39	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 17:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 17:39	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 17:39	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 17:39	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 17:39	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 17:39	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 17:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 17:39	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 17:39	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 17:39	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 17:39	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 17:39	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 17:39	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 17:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 17:39	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 17:39	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 17:39	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 17:39	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 17:39	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 17:39	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 17:39	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-32D **Lab ID: 92430519007** Collected: 05/22/19 11:55 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 17:39	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:39	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:39	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/30/19 17:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 17:39	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 17:39	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 17:39	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 17:39	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 17:39	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 17:39	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 17:39	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 17:39	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 17:39	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		05/30/19 17:39	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130	1		05/30/19 17:39	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		05/30/19 17:39	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/29/19 15:25	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%	50-150	1		05/29/19 15:25	17060-07-0	
Toluene-d8 (S)	102	%	50-150	1		05/29/19 15:25	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-36D **Lab ID: 92430519008** Collected: 05/22/19 12:10 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 17:57	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 17:57	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 17:57	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 17:57	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 17:57	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 17:57	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 17:57	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 17:57	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 17:57	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 17:57	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 17:57	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 17:57	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 17:57	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 17:57	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 17:57	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 17:57	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 17:57	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 17:57	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 17:57	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:57	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:57	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:57	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 17:57	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/30/19 17:57	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/30/19 17:57	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/30/19 17:57	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 17:57	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 17:57	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 17:57	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 17:57	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 17:57	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 17:57	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 17:57	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 17:57	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 17:57	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 17:57	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 17:57	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 17:57	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 17:57	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 17:57	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 17:57	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 17:57	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 17:57	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 17:57	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 17:57	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 17:57	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 17:57	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-36D **Lab ID: 92430519008** Collected: 05/22/19 12:10 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 17:57	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:57	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 17:57	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/30/19 17:57	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 17:57	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 17:57	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 17:57	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 17:57	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 17:57	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 17:57	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 17:57	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 17:57	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 17:57	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/30/19 17:57	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130	1		05/30/19 17:57	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/30/19 17:57	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/29/19 15:44	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	95	%	50-150	1		05/29/19 15:44	17060-07-0	
Toluene-d8 (S)	102	%	50-150	1		05/29/19 15:44	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-33D-235 **Lab ID: 92430519009** Collected: 05/22/19 13:55 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 18:14	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 18:14	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 18:14	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 18:14	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 18:14	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 18:14	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 18:14	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 18:14	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 18:14	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 18:14	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 18:14	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 18:14	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 18:14	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 18:14	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 18:14	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 18:14	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 18:14	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 18:14	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 18:14	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 18:14	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 18:14	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 18:14	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 18:14	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/30/19 18:14	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/30/19 18:14	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/30/19 18:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 18:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 18:14	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 18:14	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 18:14	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 18:14	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 18:14	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 18:14	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 18:14	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 18:14	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 18:14	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 18:14	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 18:14	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 18:14	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 18:14	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 18:14	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 18:14	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 18:14	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 18:14	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 18:14	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 18:14	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 18:14	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-33D-235 **Lab ID: 92430519009** Collected: 05/22/19 13:55 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 18:14	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 18:14	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 18:14	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/30/19 18:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 18:14	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 18:14	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 18:14	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 18:14	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 18:14	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 18:14	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 18:14	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 18:14	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 18:14	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/30/19 18:14	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130	1		05/30/19 18:14	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/30/19 18:14	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/29/19 16:04	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	50-150	1		05/29/19 16:04	17060-07-0	
Toluene-d8 (S)	101	%	50-150	1		05/29/19 16:04	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-33D-295 **Lab ID: 92430519010** Collected: 05/22/19 13:45 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 18:32	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 18:32	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 18:32	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 18:32	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 18:32	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 18:32	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 18:32	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 18:32	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 18:32	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 18:32	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 18:32	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 18:32	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 18:32	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 18:32	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 18:32	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 18:32	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 18:32	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 18:32	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 18:32	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 18:32	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 18:32	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 18:32	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 18:32	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/30/19 18:32	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/30/19 18:32	107-06-2	
1,1-Dichloroethene	**4.5**	ug/L	1.0	1		05/30/19 18:32	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 18:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 18:32	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 18:32	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 18:32	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 18:32	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 18:32	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 18:32	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 18:32	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 18:32	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 18:32	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 18:32	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 18:32	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 18:32	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 18:32	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 18:32	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 18:32	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 18:32	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 18:32	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 18:32	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 18:32	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 18:32	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-33D-295 **Lab ID: 92430519010** Collected: 05/22/19 13:45 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 18:32	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 18:32	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 18:32	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/30/19 18:32	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 18:32	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 18:32	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 18:32	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 18:32	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 18:32	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 18:32	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 18:32	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 18:32	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 18:32	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		05/30/19 18:32	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130	1		05/30/19 18:32	17060-07-0	
Toluene-d8 (S)	100	%	70-130	1		05/30/19 18:32	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	**6.1**	ug/L	2.0	1		05/29/19 16:23	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	50-150	1		05/29/19 16:23	17060-07-0	
Toluene-d8 (S)	105	%	50-150	1		05/29/19 16:23	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-30D-273 **Lab ID: 92430519011** Collected: 05/22/19 14:20 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 18:50	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 18:50	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 18:50	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 18:50	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 18:50	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 18:50	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 18:50	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 18:50	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 18:50	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 18:50	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 18:50	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 18:50	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 18:50	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 18:50	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 18:50	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 18:50	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 18:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 18:50	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 18:50	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 18:50	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 18:50	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 18:50	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 18:50	75-71-8	
1,1-Dichloroethane	**1.1**	ug/L	1.0	1		05/30/19 18:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/30/19 18:50	107-06-2	
1,1-Dichloroethene	**44.2**	ug/L	1.0	1		05/30/19 18:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 18:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 18:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 18:50	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 18:50	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 18:50	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 18:50	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 18:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 18:50	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 18:50	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 18:50	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 18:50	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 18:50	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 18:50	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 18:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 18:50	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 18:50	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 18:50	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 18:50	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 18:50	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 18:50	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 18:50	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-30D-273 **Lab ID: 92430519011** Collected: 05/22/19 14:20 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 18:50	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 18:50	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 18:50	120-82-1	
1,1,1-Trichloroethane	**2.0**	ug/L	1.0	1		05/30/19 18:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 18:50	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 18:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 18:50	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 18:50	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 18:50	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 18:50	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 18:50	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 18:50	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 18:50	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		05/30/19 18:50	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130	1		05/30/19 18:50	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/30/19 18:50	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	**22.7**	ug/L	2.0	1		05/29/19 16:43	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	50-150	1		05/29/19 16:43	17060-07-0	
Toluene-d8 (S)	106	%	50-150	1		05/29/19 16:43	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-30D-413 **Lab ID: 92430519012** Collected: 05/22/19 14:25 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 19:08	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 19:08	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 19:08	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 19:08	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 19:08	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 19:08	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 19:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 19:08	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 19:08	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 19:08	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 19:08	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 19:08	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 19:08	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 19:08	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 19:08	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 19:08	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 19:08	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 19:08	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 19:08	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 19:08	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 19:08	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 19:08	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 19:08	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/30/19 19:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/30/19 19:08	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/30/19 19:08	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 19:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 19:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 19:08	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 19:08	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 19:08	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 19:08	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 19:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 19:08	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 19:08	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 19:08	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 19:08	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 19:08	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 19:08	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 19:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 19:08	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 19:08	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 19:08	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 19:08	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 19:08	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 19:08	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 19:08	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-30D-413 **Lab ID: 92430519012** Collected: 05/22/19 14:25 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 19:08	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 19:08	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 19:08	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/30/19 19:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 19:08	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 19:08	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 19:08	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 19:08	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 19:08	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 19:08	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 19:08	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 19:08	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 19:08	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		05/30/19 19:08	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130	1		05/30/19 19:08	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/30/19 19:08	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/29/19 17:02	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%	50-150	1		05/29/19 17:02	17060-07-0	
Toluene-d8 (S)	103	%	50-150	1		05/29/19 17:02	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-29D **Lab ID: 92430519013** Collected: 05/22/19 14:45 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 19:26	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 19:26	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 19:26	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 19:26	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 19:26	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 19:26	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 19:26	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 19:26	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 19:26	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 19:26	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 19:26	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 19:26	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 19:26	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 19:26	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 19:26	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 19:26	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 19:26	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 19:26	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 19:26	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 19:26	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 19:26	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 19:26	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 19:26	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/30/19 19:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/30/19 19:26	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/30/19 19:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 19:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 19:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 19:26	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 19:26	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 19:26	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 19:26	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 19:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 19:26	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 19:26	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 19:26	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 19:26	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 19:26	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 19:26	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 19:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 19:26	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 19:26	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 19:26	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 19:26	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 19:26	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 19:26	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 19:26	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-29D **Lab ID: 92430519013** Collected: 05/22/19 14:45 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 19:26	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 19:26	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 19:26	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/30/19 19:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 19:26	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 19:26	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 19:26	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 19:26	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 19:26	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 19:26	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 19:26	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 19:26	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 19:26	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		05/30/19 19:26	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130	1		05/30/19 19:26	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		05/30/19 19:26	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/30/19 09:42	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	50-150	1		05/30/19 09:42	17060-07-0	
Toluene-d8 (S)	103	%	50-150	1		05/30/19 09:42	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-28D **Lab ID: 92430519014** Collected: 05/22/19 15:20 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 19:44	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 19:44	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 19:44	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 19:44	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 19:44	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 19:44	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 19:44	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 19:44	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 19:44	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 19:44	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 19:44	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 19:44	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 19:44	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 19:44	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 19:44	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 19:44	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 19:44	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 19:44	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 19:44	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 19:44	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 19:44	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 19:44	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 19:44	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/30/19 19:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/30/19 19:44	107-06-2	
1,1-Dichloroethene	**5.2**	ug/L	1.0	1		05/30/19 19:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 19:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 19:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 19:44	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 19:44	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 19:44	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 19:44	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 19:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 19:44	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 19:44	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 19:44	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 19:44	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 19:44	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 19:44	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 19:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 19:44	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 19:44	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 19:44	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 19:44	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 19:44	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 19:44	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 19:44	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-28D **Lab ID: 92430519014** Collected: 05/22/19 15:20 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 19:44	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 19:44	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 19:44	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/30/19 19:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 19:44	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 19:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 19:44	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 19:44	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 19:44	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 19:44	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 19:44	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 19:44	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 19:44	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		05/30/19 19:44	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130	1		05/30/19 19:44	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		05/30/19 19:44	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	**3.5**	ug/L	2.0	1		05/30/19 10:02	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%	50-150	1		05/30/19 10:02	17060-07-0	
Toluene-d8 (S)	104	%	50-150	1		05/30/19 10:02	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: DUP 052219A **Lab ID: 92430519015** Collected: 05/22/19 09:00 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 20:02	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 20:02	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 20:02	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 20:02	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 20:02	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 20:02	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 20:02	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 20:02	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 20:02	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 20:02	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 20:02	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 20:02	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 20:02	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 20:02	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 20:02	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 20:02	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 20:02	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 20:02	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 20:02	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 20:02	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 20:02	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 20:02	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 20:02	75-71-8	
1,1-Dichloroethane	**10.7**	ug/L	1.0	1		05/30/19 20:02	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/30/19 20:02	107-06-2	
1,1-Dichloroethene	**45.7**	ug/L	1.0	1		05/30/19 20:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 20:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 20:02	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 20:02	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 20:02	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 20:02	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 20:02	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 20:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 20:02	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 20:02	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 20:02	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 20:02	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 20:02	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 20:02	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 20:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 20:02	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 20:02	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 20:02	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 20:02	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 20:02	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 20:02	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 20:02	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: DUP 052219A **Lab ID: 92430519015** Collected: 05/22/19 09:00 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 20:02	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 20:02	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 20:02	120-82-1	
1,1,1-Trichloroethane	**7.4**	ug/L	1.0	1		05/30/19 20:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 20:02	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 20:02	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 20:02	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 20:02	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 20:02	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 20:02	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 20:02	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 20:02	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 20:02	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		05/30/19 20:02	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130	1		05/30/19 20:02	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		05/30/19 20:02	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	**36.8**	ug/L	2.0	1		05/30/19 10:21	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%	50-150	1		05/30/19 10:21	17060-07-0	
Toluene-d8 (S)	103	%	50-150	1		05/30/19 10:21	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-25D-130 **Lab ID: 92430519016** Collected: 05/22/19 15:55 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 20:20	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 20:20	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 20:20	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 20:20	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 20:20	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 20:20	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 20:20	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 20:20	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 20:20	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 20:20	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 20:20	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 20:20	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 20:20	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 20:20	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 20:20	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 20:20	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 20:20	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 20:20	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 20:20	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 20:20	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 20:20	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 20:20	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 20:20	75-71-8	
1,1-Dichloroethane	**3.7**	ug/L	1.0	1		05/30/19 20:20	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/30/19 20:20	107-06-2	
1,1-Dichloroethene	**96.2**	ug/L	1.0	1		05/30/19 20:20	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 20:20	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 20:20	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 20:20	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 20:20	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 20:20	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 20:20	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 20:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 20:20	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 20:20	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 20:20	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 20:20	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 20:20	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 20:20	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 20:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 20:20	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 20:20	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 20:20	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 20:20	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 20:20	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 20:20	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 20:20	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-25D-130 **Lab ID: 92430519016** Collected: 05/22/19 15:55 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 20:20	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 20:20	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 20:20	120-82-1	
1,1,1-Trichloroethane	**4.2**	ug/L	1.0	1		05/30/19 20:20	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 20:20	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 20:20	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 20:20	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 20:20	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 20:20	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 20:20	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 20:20	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 20:20	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 20:20	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/30/19 20:20	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130	1		05/30/19 20:20	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		05/30/19 20:20	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	**38.4**	ug/L	2.0	1		05/30/19 10:41	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%	50-150	1		05/30/19 10:41	17060-07-0	
Toluene-d8 (S)	106	%	50-150	1		05/30/19 10:41	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-25D-190 **Lab ID: 92430519017** Collected: 05/22/19 15:40 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 20:37	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 20:37	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 20:37	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 20:37	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 20:37	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 20:37	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 20:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 20:37	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 20:37	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 20:37	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 20:37	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 20:37	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 20:37	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 20:37	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 20:37	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 20:37	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 20:37	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 20:37	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 20:37	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 20:37	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 20:37	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 20:37	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 20:37	75-71-8	
1,1-Dichloroethane	**11.8**	ug/L	1.0	1		05/30/19 20:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/30/19 20:37	107-06-2	
1,1-Dichloroethene	**51.7**	ug/L	1.0	1		05/30/19 20:37	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 20:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 20:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 20:37	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 20:37	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 20:37	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 20:37	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 20:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 20:37	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 20:37	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 20:37	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 20:37	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 20:37	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 20:37	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 20:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 20:37	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 20:37	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 20:37	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 20:37	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 20:37	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 20:37	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 20:37	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: MW-25D-190 **Lab ID: 92430519017** Collected: 05/22/19 15:40 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 20:37	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 20:37	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 20:37	120-82-1	
1,1,1-Trichloroethane	**8.5**	ug/L	1.0	1		05/30/19 20:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 20:37	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 20:37	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 20:37	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 20:37	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 20:37	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 20:37	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 20:37	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 20:37	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 20:37	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	1		05/30/19 20:37	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130	1		05/30/19 20:37	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		05/30/19 20:37	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	**36.7**	ug/L	2.0	1		05/30/19 11:00	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	50-150	1		05/30/19 11:00	17060-07-0	
Toluene-d8 (S)	106	%	50-150	1		05/30/19 11:00	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: Trip Blank **Lab ID: 92430519018** Collected: 05/22/19 00:00 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Acetone	ND	ug/L	25.0	1		05/30/19 15:52	67-64-1	
Benzene	ND	ug/L	1.0	1		05/30/19 15:52	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/30/19 15:52	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/30/19 15:52	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/30/19 15:52	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/30/19 15:52	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/30/19 15:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		05/30/19 15:52	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/30/19 15:52	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/30/19 15:52	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/30/19 15:52	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/30/19 15:52	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/30/19 15:52	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 15:52	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/30/19 15:52	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/30/19 15:52	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/30/19 15:52	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/30/19 15:52	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/30/19 15:52	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 15:52	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 15:52	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/30/19 15:52	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/30/19 15:52	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/30/19 15:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/30/19 15:52	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/30/19 15:52	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 15:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/30/19 15:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 15:52	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/30/19 15:52	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/30/19 15:52	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/30/19 15:52	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 15:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/30/19 15:52	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/30/19 15:52	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/30/19 15:52	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/30/19 15:52	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/30/19 15:52	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/30/19 15:52	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/30/19 15:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/30/19 15:52	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/30/19 15:52	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/30/19 15:52	91-20-3	
Styrene	ND	ug/L	1.0	1		05/30/19 15:52	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 15:52	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/30/19 15:52	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		05/30/19 15:52	127-18-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Kopflex offsite
Pace Project No.: 92430519

Sample: Trip Blank **Lab ID: 92430519018** Collected: 05/22/19 00:00 Received: 05/24/19 09:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260B							
Toluene	ND	ug/L	1.0	1		05/30/19 15:52	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 15:52	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/30/19 15:52	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/30/19 15:52	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/30/19 15:52	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/30/19 15:52	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/30/19 15:52	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/30/19 15:52	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/30/19 15:52	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/30/19 15:52	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/30/19 15:52	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/30/19 15:52	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/30/19 15:52	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/30/19 15:52	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130	1		05/30/19 15:52	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/30/19 15:52	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/30/19 11:20	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	50-150	1		05/30/19 11:20	17060-07-0	
Toluene-d8 (S)	104	%	50-150	1		05/30/19 11:20	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

QC Batch: 477901 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92430519002

METHOD BLANK: 2587378 Matrix: Water
Associated Lab Samples: 92430519002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/29/19 11:06	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/29/19 11:06	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/29/19 11:06	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/29/19 11:06	
1,1-Dichloroethane	ug/L	ND	1.0	05/29/19 11:06	
1,1-Dichloroethene	ug/L	ND	1.0	05/29/19 11:06	
1,1-Dichloropropene	ug/L	ND	1.0	05/29/19 11:06	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/29/19 11:06	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/29/19 11:06	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/29/19 11:06	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	05/29/19 11:06	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/29/19 11:06	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/29/19 11:06	
1,2-Dichloroethane	ug/L	ND	1.0	05/29/19 11:06	
1,2-Dichloropropane	ug/L	ND	1.0	05/29/19 11:06	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/29/19 11:06	
1,3-Dichloropropane	ug/L	ND	1.0	05/29/19 11:06	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/29/19 11:06	
2,2-Dichloropropane	ug/L	ND	1.0	05/29/19 11:06	
2-Butanone (MEK)	ug/L	ND	5.0	05/29/19 11:06	
2-Chlorotoluene	ug/L	ND	1.0	05/29/19 11:06	
2-Hexanone	ug/L	ND	5.0	05/29/19 11:06	
4-Chlorotoluene	ug/L	ND	1.0	05/29/19 11:06	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/29/19 11:06	
Acetone	ug/L	ND	25.0	05/29/19 11:06	
Benzene	ug/L	ND	1.0	05/29/19 11:06	
Bromobenzene	ug/L	ND	1.0	05/29/19 11:06	
Bromochloromethane	ug/L	ND	1.0	05/29/19 11:06	
Bromodichloromethane	ug/L	ND	1.0	05/29/19 11:06	
Bromoform	ug/L	ND	1.0	05/29/19 11:06	
Bromomethane	ug/L	ND	2.0	05/29/19 11:06	
Carbon tetrachloride	ug/L	ND	1.0	05/29/19 11:06	
Chlorobenzene	ug/L	ND	1.0	05/29/19 11:06	
Chloroethane	ug/L	ND	1.0	05/29/19 11:06	
Chloroform	ug/L	ND	5.0	05/29/19 11:06	
Chloromethane	ug/L	ND	1.0	05/29/19 11:06	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/29/19 11:06	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/29/19 11:06	
Dibromochloromethane	ug/L	ND	1.0	05/29/19 11:06	
Dibromomethane	ug/L	ND	1.0	05/29/19 11:06	
Dichlorodifluoromethane	ug/L	ND	1.0	05/29/19 11:06	

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

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

METHOD BLANK: 2587378 Matrix: Water
Associated Lab Samples: 92430519002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diisopropyl ether	ug/L	ND	1.0	05/29/19 11:06	
Ethylbenzene	ug/L	ND	1.0	05/29/19 11:06	
Hexachloro-1,3-butadiene	ug/L	1.3	1.0	05/29/19 11:06	
m&p-Xylene	ug/L	ND	2.0	05/29/19 11:06	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/29/19 11:06	
Methylene Chloride	ug/L	ND	5.0	05/29/19 11:06	
Naphthalene	ug/L	ND	1.0	05/29/19 11:06	
o-Xylene	ug/L	ND	1.0	05/29/19 11:06	
p-Isopropyltoluene	ug/L	ND	1.0	05/29/19 11:06	
Styrene	ug/L	ND	1.0	05/29/19 11:06	
Tetrachloroethene	ug/L	ND	1.0	05/29/19 11:06	
Toluene	ug/L	ND	1.0	05/29/19 11:06	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/29/19 11:06	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/29/19 11:06	
Trichloroethene	ug/L	ND	1.0	05/29/19 11:06	
Trichlorofluoromethane	ug/L	ND	1.0	05/29/19 11:06	
Vinyl acetate	ug/L	ND	2.0	05/29/19 11:06	
Vinyl chloride	ug/L	ND	1.0	05/29/19 11:06	
Xylene (Total)	ug/L	ND	1.0	05/29/19 11:06	
1,2-Dichloroethane-d4 (S)	%	112	70-130	05/29/19 11:06	
4-Bromofluorobenzene (S)	%	94	70-130	05/29/19 11:06	
Toluene-d8 (S)	%	97	70-130	05/29/19 11:06	

LABORATORY CONTROL SAMPLE: 2587379

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	53.5	107	70-130	
1,1,1-Trichloroethane	ug/L	50	48.7	97	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	45.5	91	70-130	
1,1,2-Trichloroethane	ug/L	50	46.2	92	70-130	
1,1-Dichloroethane	ug/L	50	44.6	89	70-130	
1,1-Dichloroethene	ug/L	50	48.1	96	70-130	
1,1-Dichloropropene	ug/L	50	41.2	82	70-130	
1,2,3-Trichlorobenzene	ug/L	50	54.5	109	70-130	
1,2,3-Trichloropropane	ug/L	50	41.0	82	70-130	
1,2,4-Trichlorobenzene	ug/L	50	55.0	110	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	52.5	105	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	49.2	98	70-130	
1,2-Dichlorobenzene	ug/L	50	49.5	99	70-130	
1,2-Dichloroethane	ug/L	50	47.9	96	70-130	
1,2-Dichloropropane	ug/L	50	43.5	87	70-130	
1,3-Dichlorobenzene	ug/L	50	48.8	98	70-130	
1,3-Dichloropropane	ug/L	50	47.1	94	70-131	
1,4-Dichlorobenzene	ug/L	50	48.3	97	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

LABORATORY CONTROL SAMPLE: 2587379

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,2-Dichloropropane	ug/L	50	52.9	106	69-130	
2-Butanone (MEK)	ug/L	100	100	100	64-135	
2-Chlorotoluene	ug/L	50	47.8	96	70-130	
2-Hexanone	ug/L	100	106	106	66-135	
4-Chlorotoluene	ug/L	50	48.1	96	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	102	102	70-130	
Acetone	ug/L	100	114	114	61-157	
Benzene	ug/L	50	44.1	88	70-130	
Bromobenzene	ug/L	50	48.8	98	70-130	
Bromochloromethane	ug/L	50	41.1	82	70-130	
Bromodichloromethane	ug/L	50	53.6	107	70-130	
Bromoform	ug/L	50	56.1	112	70-130	
Bromomethane	ug/L	50	49.9	100	38-130	
Carbon tetrachloride	ug/L	50	53.7	107	70-130	
Chlorobenzene	ug/L	50	46.8	94	70-130	
Chloroethane	ug/L	50	41.1	82	37-142	
Chloroform	ug/L	50	47.1	94	70-130	
Chloromethane	ug/L	50	48.1	96	48-130	
cis-1,2-Dichloroethene	ug/L	50	46.0	92	70-130	
cis-1,3-Dichloropropene	ug/L	50	49.0	98	70-130	
Dibromochloromethane	ug/L	50	54.5	109	70-130	
Dibromomethane	ug/L	50	51.3	103	70-130	
Dichlorodifluoromethane	ug/L	50	42.8	86	53-134	
Diisopropyl ether	ug/L	50	45.2	90	70-135	
Ethylbenzene	ug/L	50	47.0	94	70-130	
Hexachloro-1,3-butadiene	ug/L	50	53.6	107	68-132	
m&p-Xylene	ug/L	100	96.5	97	70-130	
Methyl-tert-butyl ether	ug/L	50	49.3	99	70-130	
Methylene Chloride	ug/L	50	43.5	87	67-132	
Naphthalene	ug/L	50	51.6	103	70-130	
o-Xylene	ug/L	50	47.1	94	70-130	
p-Isopropyltoluene	ug/L	50	50.2	100	70-130	
Styrene	ug/L	50	45.9	92	70-130	
Tetrachloroethene	ug/L	50	47.6	95	69-130	
Toluene	ug/L	50	44.1	88	70-130	
trans-1,2-Dichloroethene	ug/L	50	44.9	90	70-130	
trans-1,3-Dichloropropene	ug/L	50	52.2	104	70-130	
Trichloroethene	ug/L	50	47.8	96	70-130	
Trichlorofluoromethane	ug/L	50	48.5	97	63-130	
Vinyl acetate	ug/L	100	117	117	55-143	
Vinyl chloride	ug/L	50	44.2	88	70-131	
Xylene (Total)	ug/L	150	144	96	70-130	
1,2-Dichloroethane-d4 (S)	%			112	70-130	
4-Bromofluorobenzene (S)	%			99	70-130	
Toluene-d8 (S)	%			100	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2587380 2587381

Parameter	Units	92430523003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	18.7	20.6	94	103	73-134	10	30	
1,1,1-Trichloroethane	ug/L	9.4	20	20	28.4	30.0	95	103	82-143	5	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	17.7	19.3	89	97	70-136	9	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	18.6	19.5	93	97	70-135	5	30	
1,1-Dichloroethane	ug/L	2.1	20	20	21.8	23.0	98	105	70-139	5	30	
1,1-Dichloroethene	ug/L	2.7	20	20	24.4	24.3	108	108	70-154	1	30	
1,1-Dichloropropene	ug/L	ND	20	20	18.2	19.1	91	96	70-149	5	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	18.1	19.4	91	97	70-135	7	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	18.6	19.9	93	99	71-137	7	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	18.2	19.1	91	96	73-140	5	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	16.0	17.8	80	89	65-134	11	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	18.4	19.6	92	98	70-137	7	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	17.6	18.5	88	93	70-133	5	30	
1,2-Dichloroethane	ug/L	ND	20	20	18.9	20.9	94	104	70-137	10	30	
1,2-Dichloropropane	ug/L	ND	20	20	18.7	19.5	93	97	70-140	4	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	17.7	18.6	89	93	70-135	5	30	
1,3-Dichloropropane	ug/L	ND	20	20	18.8	19.8	94	99	70-143	5	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	17.6	18.9	88	95	70-133	7	30	
2,2-Dichloropropane	ug/L	ND	20	20	18.2	18.9	91	94	61-148	4	30	
2-Butanone (MEK)	ug/L	ND	40	40	38.1	40.7	95	102	60-139	7	30	
2-Chlorotoluene	ug/L	ND	20	20	17.6	18.1	88	90	70-144	3	30	
2-Hexanone	ug/L	ND	40	40	35.5	38.6	89	97	65-138	8	30	
4-Chlorotoluene	ug/L	ND	20	20	17.7	18.4	89	92	70-137	4	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	35.5	37.3	89	93	65-135	5	30	
Acetone	ug/L	ND	40	40	45.0	47.1	113	118	60-148	5	30	
Benzene	ug/L	ND	20	20	19.3	20.3	96	101	70-151	5	30	
Bromobenzene	ug/L	ND	20	20	18.6	19.1	93	95	70-136	3	30	
Bromochloromethane	ug/L	ND	20	20	22.3	22.5	112	112	70-141	1	30	
Bromodichloromethane	ug/L	ND	20	20	18.4	19.2	92	96	70-138	5	30	
Bromoform	ug/L	ND	20	20	16.6	18.5	83	93	63-130	11	30	
Bromomethane	ug/L	ND	20	20	10.5	11.3	53	56	15-152	7	30	
Carbon tetrachloride	ug/L	ND	20	20	18.5	19.3	93	97	70-143	4	30	
Chlorobenzene	ug/L	ND	20	20	18.3	19.2	92	96	70-138	5	30	
Chloroethane	ug/L	ND	20	20	19.6	20.8	98	104	52-163	6	30	
Chloroform	ug/L	ND	20	20	18.8	19.5	94	97	70-139	3	30	
Chloromethane	ug/L	ND	20	20	16.2	18.0	81	90	41-139	11	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	19.2	20.4	96	102	70-141	6	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	18.4	19.2	92	96	70-137	4	30	
Dibromochloromethane	ug/L	ND	20	20	17.3	18.9	87	95	70-134	9	30	
Dibromomethane	ug/L	ND	20	20	18.6	19.4	93	97	70-138	4	30	
Dichlorodifluoromethane	ug/L	ND	20	20	18.9	19.9	94	100	47-155	5	30	
Diisopropyl ether	ug/L	ND	20	20	18.8	19.9	94	99	63-144	5	30	
Ethylbenzene	ug/L	ND	20	20	18.8	19.9	94	99	66-153	6	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	18.8	19.7	94	99	65-149	5	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2587380 2587381

Parameter	Units	92430523003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
m&p-Xylene	ug/L	ND	40	40	36.9	39.1	92	98	69-152	6	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	18.3	18.9	92	94	54-156	3	30	
Methylene Chloride	ug/L	ND	20	20	20.1	20.9	101	104	42-159	4	30	
Naphthalene	ug/L	ND	20	20	16.9	18.2	85	91	61-148	7	30	
o-Xylene	ug/L	ND	20	20	18.5	19.4	93	97	70-148	5	30	
p-Isopropyltoluene	ug/L	ND	20	20	18.4	19.4	92	97	70-146	5	30	
Styrene	ug/L	ND	20	20	18.1	19.3	91	96	70-135	6	30	
Tetrachloroethene	ug/L	ND	20	20	18.8	19.9	94	99	59-143	6	30	
Toluene	ug/L	ND	20	20	18.6	19.3	93	96	59-148	4	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.5	20.9	98	105	70-146	7	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	18.4	19.2	92	96	70-135	4	30	
Trichloroethene	ug/L	ND	20	20	18.5	19.8	93	99	70-147	7	30	
Trichlorofluoromethane	ug/L	ND	20	20	19.2	19.8	96	99	70-148	3	30	
Vinyl acetate	ug/L	ND	40	40	32.9	34.3	82	86	49-151	4	30	
Vinyl chloride	ug/L	ND	20	20	19.2	20.6	96	103	70-156	7	30	
Xylene (Total)	ug/L	ND	60	60	55.4	58.6	92	98	63-158	6	30	
1,2-Dichloroethane-d4 (S)	%						95	101	70-130			
4-Bromofluorobenzene (S)	%						99	101	70-130			
Toluene-d8 (S)	%						99	100	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

QC Batch: 478156 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92430519001, 92430519004, 92430519005, 92430519006, 92430519007, 92430519008, 92430519009, 92430519010, 92430519011, 92430519012, 92430519013, 92430519014, 92430519015, 92430519016, 92430519017, 92430519018

METHOD BLANK: 2588592 Matrix: Water
Associated Lab Samples: 92430519001, 92430519004, 92430519005, 92430519006, 92430519007, 92430519008, 92430519009, 92430519010, 92430519011, 92430519012, 92430519013, 92430519014, 92430519015, 92430519016, 92430519017, 92430519018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/30/19 15:34	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/30/19 15:34	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/30/19 15:34	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/30/19 15:34	
1,1-Dichloroethane	ug/L	ND	1.0	05/30/19 15:34	
1,1-Dichloroethene	ug/L	ND	1.0	05/30/19 15:34	
1,1-Dichloropropene	ug/L	ND	1.0	05/30/19 15:34	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/30/19 15:34	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/30/19 15:34	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/30/19 15:34	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	05/30/19 15:34	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/30/19 15:34	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/30/19 15:34	
1,2-Dichloroethane	ug/L	ND	1.0	05/30/19 15:34	
1,2-Dichloropropane	ug/L	ND	1.0	05/30/19 15:34	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/30/19 15:34	
1,3-Dichloropropane	ug/L	ND	1.0	05/30/19 15:34	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/30/19 15:34	
2,2-Dichloropropane	ug/L	ND	1.0	05/30/19 15:34	
2-Butanone (MEK)	ug/L	ND	5.0	05/30/19 15:34	
2-Chlorotoluene	ug/L	ND	1.0	05/30/19 15:34	
2-Hexanone	ug/L	ND	5.0	05/30/19 15:34	
4-Chlorotoluene	ug/L	ND	1.0	05/30/19 15:34	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/30/19 15:34	
Acetone	ug/L	ND	25.0	05/30/19 15:34	
Benzene	ug/L	ND	1.0	05/30/19 15:34	
Bromobenzene	ug/L	ND	1.0	05/30/19 15:34	
Bromochloromethane	ug/L	ND	1.0	05/30/19 15:34	
Bromodichloromethane	ug/L	ND	1.0	05/30/19 15:34	
Bromoform	ug/L	ND	1.0	05/30/19 15:34	
Bromomethane	ug/L	ND	2.0	05/30/19 15:34	
Carbon tetrachloride	ug/L	ND	1.0	05/30/19 15:34	
Chlorobenzene	ug/L	ND	1.0	05/30/19 15:34	
Chloroethane	ug/L	ND	1.0	05/30/19 15:34	
Chloroform	ug/L	ND	5.0	05/30/19 15:34	
Chloromethane	ug/L	ND	1.0	05/30/19 15:34	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/30/19 15:34	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/30/19 15:34	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

METHOD BLANK: 2588592 Matrix: Water

Associated Lab Samples: 92430519001, 92430519004, 92430519005, 92430519006, 92430519007, 92430519008, 92430519009, 92430519010, 92430519011, 92430519012, 92430519013, 92430519014, 92430519015, 92430519016, 92430519017, 92430519018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromochloromethane	ug/L	ND	1.0	05/30/19 15:34	
Dibromomethane	ug/L	ND	1.0	05/30/19 15:34	
Dichlorodifluoromethane	ug/L	ND	1.0	05/30/19 15:34	
Diisopropyl ether	ug/L	ND	1.0	05/30/19 15:34	
Ethylbenzene	ug/L	ND	1.0	05/30/19 15:34	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	05/30/19 15:34	
m&p-Xylene	ug/L	ND	2.0	05/30/19 15:34	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/30/19 15:34	
Methylene Chloride	ug/L	ND	5.0	05/30/19 15:34	
Naphthalene	ug/L	ND	1.0	05/30/19 15:34	
o-Xylene	ug/L	ND	1.0	05/30/19 15:34	
p-Isopropyltoluene	ug/L	ND	1.0	05/30/19 15:34	
Styrene	ug/L	ND	1.0	05/30/19 15:34	
Tetrachloroethene	ug/L	ND	1.0	05/30/19 15:34	
Toluene	ug/L	ND	1.0	05/30/19 15:34	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/30/19 15:34	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/30/19 15:34	
Trichloroethene	ug/L	ND	1.0	05/30/19 15:34	
Trichlorofluoromethane	ug/L	ND	1.0	05/30/19 15:34	
Vinyl acetate	ug/L	ND	2.0	05/30/19 15:34	
Vinyl chloride	ug/L	ND	1.0	05/30/19 15:34	
Xylene (Total)	ug/L	ND	1.0	05/30/19 15:34	
1,2-Dichloroethane-d4 (S)	%	100	70-130	05/30/19 15:34	
4-Bromofluorobenzene (S)	%	101	70-130	05/30/19 15:34	
Toluene-d8 (S)	%	101	70-130	05/30/19 15:34	

LABORATORY CONTROL SAMPLE: 2588593

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	46.8	94	70-130	
1,1,1-Trichloroethane	ug/L	50	44.6	89	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	43.4	87	70-130	
1,1,2-Trichloroethane	ug/L	50	46.4	93	70-130	
1,1-Dichloroethane	ug/L	50	44.6	89	70-130	
1,1-Dichloroethene	ug/L	50	49.0	98	70-130	
1,1-Dichloropropene	ug/L	50	41.7	83	70-130	
1,2,3-Trichlorobenzene	ug/L	50	46.1	92	70-130	
1,2,3-Trichloropropane	ug/L	50	44.6	89	70-130	
1,2,4-Trichlorobenzene	ug/L	50	45.9	92	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	44.9	90	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	44.8	90	70-130	
1,2-Dichlorobenzene	ug/L	50	43.0	86	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

LABORATORY CONTROL SAMPLE: 2588593

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	46.3	93	70-130	
1,2-Dichloropropane	ug/L	50	45.1	90	70-130	
1,3-Dichlorobenzene	ug/L	50	42.8	86	70-130	
1,3-Dichloropropane	ug/L	50	44.3	89	70-131	
1,4-Dichlorobenzene	ug/L	50	42.7	85	70-130	
2,2-Dichloropropane	ug/L	50	43.9	88	69-130	
2-Butanone (MEK)	ug/L	100	86.3	86	64-135	
2-Chlorotoluene	ug/L	50	42.7	85	70-130	
2-Hexanone	ug/L	100	88.1	88	66-135	
4-Chlorotoluene	ug/L	50	42.6	85	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	89.8	90	70-130	
Acetone	ug/L	100	93.3	93	61-157	
Benzene	ug/L	50	45.3	91	70-130	
Bromobenzene	ug/L	50	45.2	90	70-130	
Bromochloromethane	ug/L	50	53.0	106	70-130	
Bromodichloromethane	ug/L	50	45.8	92	70-130	
Bromoform	ug/L	50	46.0	92	70-130	
Bromomethane	ug/L	50	43.4	87	38-130	
Carbon tetrachloride	ug/L	50	43.6	87	70-130	
Chlorobenzene	ug/L	50	43.3	87	70-130	
Chloroethane	ug/L	50	41.8	84	37-142	
Chloroform	ug/L	50	42.4	85	70-130	
Chloromethane	ug/L	50	42.5	85	48-130	
cis-1,2-Dichloroethene	ug/L	50	43.6	87	70-130	
cis-1,3-Dichloropropene	ug/L	50	46.0	92	70-130	
Dibromochloromethane	ug/L	50	45.2	90	70-130	
Dibromomethane	ug/L	50	43.8	88	70-130	
Dichlorodifluoromethane	ug/L	50	42.9	86	53-134	
Diisopropyl ether	ug/L	50	45.5	91	70-135	
Ethylbenzene	ug/L	50	43.5	87	70-130	
Hexachloro-1,3-butadiene	ug/L	50	48.2	96	68-132	
m&p-Xylene	ug/L	100	86.7	87	70-130	
Methyl-tert-butyl ether	ug/L	50	44.1	88	70-130	
Methylene Chloride	ug/L	50	46.8	94	67-132	
Naphthalene	ug/L	50	45.1	90	70-130	
o-Xylene	ug/L	50	44.1	88	70-130	
p-Isopropyltoluene	ug/L	50	44.1	88	70-130	
Styrene	ug/L	50	43.8	88	70-130	
Tetrachloroethene	ug/L	50	43.6	87	69-130	
Toluene	ug/L	50	43.3	87	70-130	
trans-1,2-Dichloroethene	ug/L	50	45.8	92	70-130	
trans-1,3-Dichloropropene	ug/L	50	46.5	93	70-130	
Trichloroethene	ug/L	50	44.0	88	70-130	
Trichlorofluoromethane	ug/L	50	40.6	81	63-130	
Vinyl acetate	ug/L	100	94.4	94	55-143	
Vinyl chloride	ug/L	50	45.4	91	70-131	
Xylene (Total)	ug/L	150	131	87	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

LABORATORY CONTROL SAMPLE: 2588593

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			101	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2588594 2588595

Parameter	Units	92430507013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	500	500	490	495	98	99	73-134	1	30	
1,1,1-Trichloroethane	ug/L	ND	500	500	491	511	98	102	82-143	4	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	500	500	469	455	94	91	70-136	3	30	
1,1,2-Trichloroethane	ug/L	ND	500	500	479	478	96	96	70-135	0	30	
1,1-Dichloroethane	ug/L	ND	500	500	518	508	104	102	70-139	2	30	
1,1-Dichloroethene	ug/L	ND	500	500	559	525	112	105	70-154	6	30	
1,1-Dichloropropene	ug/L	ND	500	500	490	489	98	98	70-149	0	30	
1,2,3-Trichlorobenzene	ug/L	ND	500	500	472	450	94	90	70-135	5	30	
1,2,3-Trichloropropane	ug/L	ND	500	500	485	476	97	95	71-137	2	30	
1,2,4-Trichlorobenzene	ug/L	ND	500	500	483	460	97	92	73-140	5	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	500	500	461	447	92	89	65-134	3	30	
1,2-Dibromoethane (EDB)	ug/L	ND	500	500	483	468	97	94	70-137	3	30	
1,2-Dichlorobenzene	ug/L	ND	500	500	468	448	94	90	70-133	4	30	
1,2-Dichloroethane	ug/L	ND	500	500	497	513	99	103	70-137	3	30	
1,2-Dichloropropane	ug/L	ND	500	500	499	466	100	93	70-140	7	30	
1,3-Dichlorobenzene	ug/L	ND	500	500	476	451	95	90	70-135	5	30	
1,3-Dichloropropane	ug/L	ND	500	500	484	471	97	94	70-143	3	30	
1,4-Dichlorobenzene	ug/L	ND	500	500	469	443	94	89	70-133	6	30	
2,2-Dichloropropane	ug/L	ND	500	500	450	459	90	92	61-148	2	30	
2-Butanone (MEK)	ug/L	ND	1000	1000	953	968	95	97	60-139	2	30	
2-Chlorotoluene	ug/L	ND	500	500	519	501	104	100	70-144	4	30	
2-Hexanone	ug/L	ND	1000	1000	960	917	96	92	65-138	5	30	
4-Chlorotoluene	ug/L	ND	500	500	478	469	96	94	70-137	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1000	1000	943	919	94	92	65-135	3	30	
Acetone	ug/L	ND	1000	1000	1020	1000	102	100	60-148	2	30	
Benzene	ug/L	2750	500	500	3400	3310	130	113	70-151	2	30	
Bromobenzene	ug/L	ND	500	500	490	474	98	95	70-136	3	30	
Bromochloromethane	ug/L	ND	500	500	486	494	97	99	70-141	2	30	
Bromodichloromethane	ug/L	ND	500	500	501	475	100	95	70-138	5	30	
Bromoform	ug/L	ND	500	500	444	433	89	87	63-130	2	30	
Bromomethane	ug/L	ND	500	500	392	417	78	83	15-152	6	30	
Carbon tetrachloride	ug/L	ND	500	500	503	480	101	96	70-143	5	30	
Chlorobenzene	ug/L	ND	500	500	490	478	96	93	70-138	3	30	
Chloroethane	ug/L	ND	500	500	521	516	104	103	52-163	1	30	
Chloroform	ug/L	ND	500	500	502	527	95	100	70-139	5	30	
Chloromethane	ug/L	ND	500	500	507	518	101	104	41-139	2	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2588594 2588595

Parameter	Units	92430507013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
cis-1,2-Dichloroethene	ug/L	ND	500	500	512	502	102	100	70-141	2	30	
cis-1,3-Dichloropropene	ug/L	ND	500	500	484	465	97	93	70-137	4	30	
Dibromochloromethane	ug/L	ND	500	500	468	453	94	91	70-134	3	30	
Dibromomethane	ug/L	ND	500	500	477	463	95	93	70-138	3	30	
Dichlorodifluoromethane	ug/L	ND	500	500	516	507	103	101	47-155	2	30	
Diisopropyl ether	ug/L	ND	500	500	469	497	94	99	63-144	6	30	
Ethylbenzene	ug/L	174	500	500	690	676	103	100	66-153	2	30	
Hexachloro-1,3-butadiene	ug/L	ND	500	500	485	471	97	94	65-149	3	30	
m&p-Xylene	ug/L	400	1000	1000	1420	1390	101	99	69-152	2	30	
Methyl-tert-butyl ether	ug/L	259	500	500	752	758	99	100	54-156	1	30	
Methylene Chloride	ug/L	ND	500	500	517	514	103	103	42-159	0	30	
Naphthalene	ug/L	274	500	500	779	749	101	95	61-148	4	30	
o-Xylene	ug/L	371	500	500	887	868	103	99	70-148	2	30	
p-Isopropyltoluene	ug/L	ND	500	500	507	502	97	96	70-146	1	30	
Styrene	ug/L	ND	500	500	490	475	98	95	70-135	3	30	
Tetrachloroethene	ug/L	ND	500	500	500	482	100	96	59-143	4	30	
Toluene	ug/L	189	500	500	679	665	98	95	59-148	2	30	
trans-1,2-Dichloroethene	ug/L	ND	500	500	534	504	107	101	70-146	6	30	
trans-1,3-Dichloropropene	ug/L	ND	500	500	479	474	96	95	70-135	1	30	
Trichloroethene	ug/L	ND	500	500	510	485	102	97	70-147	5	30	
Trichlorofluoromethane	ug/L	ND	500	500	489	526	98	105	70-148	7	30	
Vinyl acetate	ug/L	ND	1000	1000	998	1000	100	100	49-151	1	30	
Vinyl chloride	ug/L	ND	500	500	504	525	101	105	70-156	4	30	
Xylene (Total)	ug/L	771	1500	1500	2300	2250	102	99	63-158	2	30	
1,2-Dichloroethane-d4 (S)	%						95	97	70-130			
4-Bromofluorobenzene (S)	%						100	100	70-130			
Toluene-d8 (S)	%						100	99	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

QC Batch: 478486 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 92430519003

METHOD BLANK: 2590192 Matrix: Water
Associated Lab Samples: 92430519003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/31/19 23:30	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/31/19 23:30	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/31/19 23:30	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/31/19 23:30	
1,1-Dichloroethane	ug/L	ND	1.0	05/31/19 23:30	
1,1-Dichloroethene	ug/L	ND	1.0	05/31/19 23:30	
1,1-Dichloropropene	ug/L	ND	1.0	05/31/19 23:30	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/31/19 23:30	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/31/19 23:30	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/31/19 23:30	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	05/31/19 23:30	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/31/19 23:30	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/31/19 23:30	
1,2-Dichloroethane	ug/L	ND	1.0	05/31/19 23:30	
1,2-Dichloropropane	ug/L	ND	1.0	05/31/19 23:30	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/31/19 23:30	
1,3-Dichloropropane	ug/L	ND	1.0	05/31/19 23:30	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/31/19 23:30	
2,2-Dichloropropane	ug/L	ND	1.0	05/31/19 23:30	
2-Butanone (MEK)	ug/L	ND	5.0	05/31/19 23:30	
2-Chlorotoluene	ug/L	ND	1.0	05/31/19 23:30	
2-Hexanone	ug/L	ND	5.0	05/31/19 23:30	
4-Chlorotoluene	ug/L	ND	1.0	05/31/19 23:30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/31/19 23:30	
Acetone	ug/L	ND	25.0	05/31/19 23:30	
Benzene	ug/L	ND	1.0	05/31/19 23:30	
Bromobenzene	ug/L	ND	1.0	05/31/19 23:30	
Bromochloromethane	ug/L	ND	1.0	05/31/19 23:30	
Bromodichloromethane	ug/L	ND	1.0	05/31/19 23:30	
Bromoform	ug/L	ND	1.0	05/31/19 23:30	
Bromomethane	ug/L	ND	2.0	05/31/19 23:30	
Carbon tetrachloride	ug/L	ND	1.0	05/31/19 23:30	
Chlorobenzene	ug/L	ND	1.0	05/31/19 23:30	
Chloroethane	ug/L	ND	1.0	05/31/19 23:30	
Chloroform	ug/L	ND	5.0	05/31/19 23:30	
Chloromethane	ug/L	ND	1.0	05/31/19 23:30	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/31/19 23:30	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/31/19 23:30	
Dibromochloromethane	ug/L	ND	1.0	05/31/19 23:30	
Dibromomethane	ug/L	ND	1.0	05/31/19 23:30	
Dichlorodifluoromethane	ug/L	ND	1.0	05/31/19 23:30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

METHOD BLANK: 2590192 Matrix: Water
Associated Lab Samples: 92430519003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diisopropyl ether	ug/L	ND	1.0	05/31/19 23:30	
Ethylbenzene	ug/L	ND	1.0	05/31/19 23:30	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	05/31/19 23:30	
m&p-Xylene	ug/L	ND	2.0	05/31/19 23:30	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/31/19 23:30	
Methylene Chloride	ug/L	ND	5.0	05/31/19 23:30	
Naphthalene	ug/L	ND	1.0	05/31/19 23:30	
o-Xylene	ug/L	ND	1.0	05/31/19 23:30	
p-Isopropyltoluene	ug/L	ND	1.0	05/31/19 23:30	
Styrene	ug/L	ND	1.0	05/31/19 23:30	
Tetrachloroethene	ug/L	ND	1.0	05/31/19 23:30	
Toluene	ug/L	ND	1.0	05/31/19 23:30	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/31/19 23:30	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/31/19 23:30	
Trichloroethene	ug/L	ND	1.0	05/31/19 23:30	
Trichlorofluoromethane	ug/L	ND	1.0	05/31/19 23:30	
Vinyl acetate	ug/L	ND	2.0	05/31/19 23:30	
Vinyl chloride	ug/L	ND	1.0	05/31/19 23:30	
Xylene (Total)	ug/L	ND	1.0	05/31/19 23:30	
1,2-Dichloroethane-d4 (S)	%	101	70-130	05/31/19 23:30	
4-Bromofluorobenzene (S)	%	100	70-130	05/31/19 23:30	
Toluene-d8 (S)	%	100	70-130	05/31/19 23:30	

LABORATORY CONTROL SAMPLE: 2590193

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	51.2	102	70-130	
1,1,1-Trichloroethane	ug/L	50	47.6	95	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	31.0	62	70-130	L2
1,1,2-Trichloroethane	ug/L	50	49.9	100	70-130	
1,1-Dichloroethane	ug/L	50	49.1	98	70-130	
1,1-Dichloroethene	ug/L	50	49.1	98	70-130	
1,1-Dichloropropene	ug/L	50	46.3	93	70-130	
1,2,3-Trichlorobenzene	ug/L	50	50.7	101	70-130	
1,2,3-Trichloropropane	ug/L	50	48.9	98	70-130	
1,2,4-Trichlorobenzene	ug/L	50	49.0	98	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	48.5	97	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	49.2	98	70-130	
1,2-Dichlorobenzene	ug/L	50	46.8	94	70-130	
1,2-Dichloroethane	ug/L	50	51.6	103	70-130	
1,2-Dichloropropane	ug/L	50	47.6	95	70-130	
1,3-Dichlorobenzene	ug/L	50	46.5	93	70-130	
1,3-Dichloropropane	ug/L	50	48.7	97	70-131	
1,4-Dichlorobenzene	ug/L	50	46.1	92	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

LABORATORY CONTROL SAMPLE: 2590193

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,2-Dichloropropane	ug/L	50	48.6	97	69-130	
2-Butanone (MEK)	ug/L	100	106	106	64-135	
2-Chlorotoluene	ug/L	50	45.2	90	70-130	
2-Hexanone	ug/L	100	101	101	66-135	
4-Chlorotoluene	ug/L	50	45.7	91	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	98.9	99	70-130	
Acetone	ug/L	100	119	119	61-157	
Benzene	ug/L	50	47.6	95	70-130	
Bromobenzene	ug/L	50	48.5	97	70-130	
Bromochloromethane	ug/L	50	59.2	118	70-130	
Bromodichloromethane	ug/L	50	48.3	97	70-130	
Bromoform	ug/L	50	47.8	96	70-130	
Bromomethane	ug/L	50	37.1	74	38-130	
Carbon tetrachloride	ug/L	50	45.8	92	70-130	
Chlorobenzene	ug/L	50	47.0	94	70-130	
Chloroethane	ug/L	50	44.6	89	37-142	
Chloroform	ug/L	50	48.6	97	70-130	
Chloromethane	ug/L	50	40.7	81	48-130	
cis-1,2-Dichloroethene	ug/L	50	49.3	99	70-130	
cis-1,3-Dichloropropene	ug/L	50	49.0	98	70-130	
Dibromochloromethane	ug/L	50	48.5	97	70-130	
Dibromomethane	ug/L	50	49.1	98	70-130	
Dichlorodifluoromethane	ug/L	50	42.7	85	53-134	
Diisopropyl ether	ug/L	50	50.0	100	70-135	
Ethylbenzene	ug/L	50	47.3	95	70-130	
Hexachloro-1,3-butadiene	ug/L	50	50.2	100	68-132	
m&p-Xylene	ug/L	100	94.0	94	70-130	
Methyl-tert-butyl ether	ug/L	50	49.1	98	70-130	
Methylene Chloride	ug/L	50	52.4	105	67-132	
Naphthalene	ug/L	50	50.2	100	70-130	
o-Xylene	ug/L	50	47.0	94	70-130	
p-Isopropyltoluene	ug/L	50	47.5	95	70-130	
Styrene	ug/L	50	48.1	96	70-130	
Tetrachloroethene	ug/L	50	47.8	96	69-130	
Toluene	ug/L	50	46.6	93	70-130	
trans-1,2-Dichloroethene	ug/L	50	49.8	100	70-130	
trans-1,3-Dichloropropene	ug/L	50	50.1	100	70-130	
Trichloroethene	ug/L	50	62.1	124	70-130	
Trichlorofluoromethane	ug/L	50	42.5	85	63-130	
Vinyl acetate	ug/L	100	12.6	13	55-143	L2
Vinyl chloride	ug/L	50	47.2	94	70-131	
Xylene (Total)	ug/L	150	141	94	70-130	
1,2-Dichloroethane-d4 (S)	%			93	70-130	
4-Bromofluorobenzene (S)	%			99	70-130	
Toluene-d8 (S)	%			99	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2590194 2590195

Parameter	Units	92430519003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	200	200	192	181	96	91	73-134	6	30	
1,1,1-Trichloroethane	ug/L	18.0	200	200	210	212	96	97	82-143	1	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	200	200	181	168	91	84	70-136	8	30	
1,1,2-Trichloroethane	ug/L	ND	200	200	188	185	94	92	70-135	2	30	
1,1-Dichloroethane	ug/L	66.2	200	200	257	260	95	97	70-139	1	30	
1,1-Dichloroethene	ug/L	1190	200	200	1330	1440	68	125	70-154	8	30	M1
1,1-Dichloropropene	ug/L	ND	200	200	184	181	92	91	70-149	2	30	
1,2,3-Trichlorobenzene	ug/L	ND	200	200	181	174	91	87	70-135	4	30	
1,2,3-Trichloropropane	ug/L	ND	200	200	181	183	90	91	71-137	1	30	
1,2,4-Trichlorobenzene	ug/L	ND	200	200	176	171	88	86	73-140	3	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	200	200	168	164	84	82	65-134	2	30	
1,2-Dibromoethane (EDB)	ug/L	ND	200	200	187	175	93	87	70-137	7	30	
1,2-Dichlorobenzene	ug/L	ND	200	200	176	172	88	86	70-133	2	30	
1,2-Dichloroethane	ug/L	ND	200	200	210	205	102	100	70-137	2	30	
1,2-Dichloropropane	ug/L	ND	200	200	184	181	92	90	70-140	2	30	
1,3-Dichlorobenzene	ug/L	ND	200	200	176	174	88	87	70-135	1	30	
1,3-Dichloropropane	ug/L	ND	200	200	185	180	93	90	70-143	3	30	
1,4-Dichlorobenzene	ug/L	ND	200	200	173	172	86	86	70-133	1	30	
2,2-Dichloropropane	ug/L	ND	200	200	164	158	82	79	61-148	4	30	
2-Butanone (MEK)	ug/L	ND	400	400	378	348	94	87	60-139	8	30	
2-Chlorotoluene	ug/L	ND	200	200	179	173	90	86	70-144	4	30	
2-Hexanone	ug/L	ND	400	400	352	337	88	84	65-138	5	30	
4-Chlorotoluene	ug/L	ND	200	200	174	173	87	87	70-137	1	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	400	400	360	337	90	84	65-135	6	30	
Acetone	ug/L	ND	400	400	425	399	106	100	60-148	6	30	
Benzene	ug/L	ND	200	200	194	188	97	94	70-151	3	30	
Bromobenzene	ug/L	ND	200	200	181	186	91	93	70-136	3	30	
Bromochloromethane	ug/L	ND	200	200	218	210	109	105	70-141	4	30	
Bromodichloromethane	ug/L	ND	200	200	179	175	90	88	70-138	2	30	
Bromoform	ug/L	ND	200	200	159	156	79	78	63-130	2	30	
Bromomethane	ug/L	ND	200	200	128	126	64	63	15-152	2	30	
Carbon tetrachloride	ug/L	ND	200	200	189	186	94	93	70-143	2	30	
Chlorobenzene	ug/L	ND	200	200	181	176	91	88	70-138	3	30	
Chloroethane	ug/L	ND	200	200	190	197	95	98	52-163	3	30	
Chloroform	ug/L	ND	200	200	192	180	96	90	70-139	7	30	
Chloromethane	ug/L	ND	200	200	154	159	77	80	41-139	3	30	
cis-1,2-Dichloroethene	ug/L	ND	200	200	196	191	96	93	70-141	3	30	
cis-1,3-Dichloropropene	ug/L	ND	200	200	175	170	88	85	70-137	3	30	
Dibromochloromethane	ug/L	ND	200	200	166	166	83	83	70-134	0	30	
Dibromomethane	ug/L	ND	200	200	184	176	92	88	70-138	5	30	
Dichlorodifluoromethane	ug/L	ND	200	200	182	180	91	90	47-155	1	30	
Diisopropyl ether	ug/L	ND	200	200	187	181	94	91	63-144	3	30	
Ethylbenzene	ug/L	ND	200	200	187	181	93	91	66-153	3	30	
Hexachloro-1,3-butadiene	ug/L	ND	200	200	175	180	88	90	65-149	2	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2590194 2590195

Parameter	Units	92430519003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
m&p-Xylene	ug/L	ND	400	400	368	359	92	90	69-152	2	30	
Methyl-tert-butyl ether	ug/L	ND	200	200	184	179	92	89	54-156	3	30	
Methylene Chloride	ug/L	ND	200	200	205	197	103	98	42-159	4	30	
Naphthalene	ug/L	ND	200	200	167	165	84	82	61-148	2	30	
o-Xylene	ug/L	ND	200	200	188	181	94	91	70-148	4	30	
p-Isopropyltoluene	ug/L	ND	200	200	180	173	90	87	70-146	4	30	
Styrene	ug/L	ND	200	200	180	173	90	86	70-135	4	30	
Tetrachloroethene	ug/L	ND	200	200	183	181	92	91	59-143	1	30	
Toluene	ug/L	ND	200	200	187	181	94	90	59-148	3	30	
trans-1,2-Dichloroethene	ug/L	ND	200	200	200	196	100	98	70-146	2	30	
trans-1,3-Dichloropropene	ug/L	ND	200	200	181	171	91	86	70-135	6	30	
Trichloroethene	ug/L	ND	200	200	198	199	95	95	70-147	1	30	
Trichlorofluoromethane	ug/L	ND	200	200	190	194	95	97	70-148	2	30	
Vinyl acetate	ug/L	ND	400	400	375	360	94	90	49-151	4	30	
Vinyl chloride	ug/L	ND	200	200	191	191	95	96	70-156	0	30	
Xylene (Total)	ug/L	ND	600	600	556	540	93	90	63-158	3	30	
1,2-Dichloroethane-d4 (S)	%						102	98	70-130			
4-Bromofluorobenzene (S)	%						99	99	70-130			
Toluene-d8 (S)	%						99	99	70-130			

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

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

QC Batch: 477873 Analysis Method: EPA 8260B Mod.
QC Batch Method: EPA 8260B Mod. Analysis Description: 8260 MSV SIM
Associated Lab Samples: 92430519001, 92430519002, 92430519003, 92430519004, 92430519005, 92430519006, 92430519007, 92430519008, 92430519009, 92430519010, 92430519011, 92430519012

METHOD BLANK: 2587225 Matrix: Water
Associated Lab Samples: 92430519001, 92430519002, 92430519003, 92430519004, 92430519005, 92430519006, 92430519007, 92430519008, 92430519009, 92430519010, 92430519011, 92430519012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	05/29/19 10:33	
1,2-Dichloroethane-d4 (S)	%	97	50-150	05/29/19 10:33	
Toluene-d8 (S)	%	104	50-150	05/29/19 10:33	

LABORATORY CONTROL SAMPLE: 2587226

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	19.4	97	70-130	
1,2-Dichloroethane-d4 (S)	%			98	50-150	
Toluene-d8 (S)	%			103	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2587227 2587228

Parameter	Units	92430510015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	111	40	40	146	151	87	99	50-150	3	30	
1,2-Dichloroethane-d4 (S)	%						100	101	50-150		30	
Toluene-d8 (S)	%						104	104	50-150		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

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Kopflex offsite
Pace Project No.: 92430519

QC Batch: 478121 Analysis Method: EPA 8260B Mod.
QC Batch Method: EPA 8260B Mod. Analysis Description: 8260 MSV SIM
Associated Lab Samples: 92430519013, 92430519014, 92430519015, 92430519016, 92430519017, 92430519018

METHOD BLANK: 2588461 Matrix: Water
Associated Lab Samples: 92430519013, 92430519014, 92430519015, 92430519016, 92430519017, 92430519018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	05/30/19 09:03	
1,2-Dichloroethane-d4 (S)	%	98	50-150	05/30/19 09:03	
Toluene-d8 (S)	%	103	50-150	05/30/19 09:03	

LABORATORY CONTROL SAMPLE: 2588462

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	18.9	94	70-130	
1,2-Dichloroethane-d4 (S)	%			96	50-150	
Toluene-d8 (S)	%			101	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2588463 2588464

Parameter	Units	92430519013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	ND	20	20	19.3	20.0	97	100	50-150	4	30	
1,2-Dichloroethane-d4 (S)	%						102	102	50-150		30	
Toluene-d8 (S)	%						104	104	50-150		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

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: Kopflex offsite
Pace Project No.: 92430519

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.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Kopflex offsite
Pace Project No.: 92430519

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92430519001	**MW-46D**	EPA 8260B	478156		
92430519002	**MW-45**	EPA 8260B	477901		
92430519003	**MW-24D**	EPA 8260B	478486		
92430519004	**MW-31D**	EPA 8260B	478156		
92430519005	**MW-35D**	EPA 8260B	478156		
92430519006	**MW-34D**	EPA 8260B	478156		
92430519007	**MW-32D**	EPA 8260B	478156		
92430519008	**MW-36D**	EPA 8260B	478156		
92430519009	**MW-33D-235**	EPA 8260B	478156		
92430519010	**MW-33D-295**	EPA 8260B	478156		
92430519011	**MW-30D-273**	EPA 8260B	478156		
92430519012	**MW-30D-413**	EPA 8260B	478156		
92430519013	**MW-29D**	EPA 8260B	478156		
92430519014	**MW-28D**	EPA 8260B	478156		
92430519015	**DUP 052219A**	EPA 8260B	478156		
92430519016	**MW-25D-130**	EPA 8260B	478156		
92430519017	**MW-25D-190**	EPA 8260B	478156		
92430519018	**Trip Blank**	EPA 8260B	478156		
92430519001	**MW-46D**	EPA 8260B Mod.	477873		
92430519002	**MW-45**	EPA 8260B Mod.	477873		
92430519003	**MW-24D**	EPA 8260B Mod.	477873		
92430519004	**MW-31D**	EPA 8260B Mod.	477873		
92430519005	**MW-35D**	EPA 8260B Mod.	477873		
92430519006	**MW-34D**	EPA 8260B Mod.	477873		
92430519007	**MW-32D**	EPA 8260B Mod.	477873		
92430519008	**MW-36D**	EPA 8260B Mod.	477873		
92430519009	**MW-33D-235**	EPA 8260B Mod.	477873		
92430519010	**MW-33D-295**	EPA 8260B Mod.	477873		
92430519011	**MW-30D-273**	EPA 8260B Mod.	477873		
92430519012	**MW-30D-413**	EPA 8260B Mod.	477873		
92430519013	**MW-29D**	EPA 8260B Mod.	478121		
92430519014	**MW-28D**	EPA 8260B Mod.	478121		
92430519015	**DUP 052219A**	EPA 8260B Mod.	478121		
92430519016	**MW-25D-130**	EPA 8260B Mod.	478121		
92430519017	**MW-25D-190**	EPA 8260B Mod.	478121		
92430519018	**Trip Blank**	EPA 8260B Mod.	478121		

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐

Sample Condition Upon Receipt

Client Name: Hernchn

Project

WO# : 92430519

92430519

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:____

Custody Seal Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

Date/Initials Person Examining Contents: D 5-24-19

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☑ IR Gun ID: 92T048 **Type of Ice:** ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 3.4 **Correction Factor:** Add/Subtract (°C) 0.0

Cooler Temp Corrected (°C): _____

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☐ N/A, water sample)
Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	9.
Headspace in VOA Vials (>5-6mm)?	☑ Yes	☐ No	☐ N/A	10.
Trip Blank Present?	☑ Yes	☐ No	☐ N/A	11.
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	

COMMENTS/SAMPLE DISCREPANCY **Field Data Required?** ☐ Yes ☐ No

Only recieved 5 vials for MW-35D

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: RV **Date:** 5/24

Project Manager SRF Review: RV **Date:** 5/24

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottle**

Project # WO# : 92430519

PM: PTE Due Date: 06/03/19

CLIENT: 92-WSP

Pg 1

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	\				\	\	\	\			\		\	\	\	6									\	\			
2	\				\	\	\	\			\		\	\	\	6									\	\			
3	\				\	\	\	\			\		\	\	\	6									\	\			
4	\				\	\	\	\			\		\	\	\	6									\	\			
5	\				\	\	\	\			\		\	\	\	6									\	\			
6	\				\	\	\	\			\		\	\	\	6									\	\			
7	\				\	\	\	\			\		\	\	\	6									\	\			
8	\				\	\	\	\			\		\	\	\	6									\	\			
9	\				\	\	\	\			\		\	\	\	6									\	\			
10	\				\	\	\	\			\		\	\	\	6									\	\			
11	\				\	\	\	\			\		\	\	\	6									\	\			
12	\				\	\	\	\			\		\	\	\	6									\	\			

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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.

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottle**

Proje **WO# : 92430519**

PM: PTE Due Date: 06/03/19

CLIENT: 92-WSP

Pg 2

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	\				\	\	\	\			\		\	\	\	6									\	\			
2	\				\	\	\	\			\		\	\	\	6									\	\			
3	\				\	\	\	\			\		\	\	\	4-TB									\	\			
4	\				\	\	\	\			\		\	\	\	6									\	\			
5	\				\	\	\	\			\		\	\	\	6									\	\			
6	\				\	\	\	\			\		\	\	\	6									\	\			
7	\				\	\	\	\			\		\	\	\										\	\			
8	\				\	\	\	\			\		\	\	\										\	\			
9	\				\	\	\	\			\		\	\	\										\	\			
10	\				\	\	\	\			\		\	\	\										\	\			
11	\				\	\	\	\			\		\	\	\										\	\			
12	\				\	\	\	\			\		\	\	\										\	\			

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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.

Offsite

CHAIN-OF-CUSTODY RECORD

No. 004540 | WSP | PARSONS BRINCKERHOFF

WSP | Parsons Brinckerhoff Office Address	Herndon, VA
Project Name	KopFlex
WSP | Parsons Brinckerhoff Contact Name	Eric Johnson
Project Location	Hanover, MD
WSP | Parsons Brinckerhoff Contact E-mail	eric.johnson@wspgroup.com
Project Number & Task	31401545.011
WSP | Parsons Brinckerhoff Contact Phone	571 232 5045
Sampler(s) Name(s)	CC
Sampler(s) Signature(s)	
Laboratory Name & Location	Pace, NC
Laboratory Project Manager	Taylor Etell
Requested Turn-Around-Time	[X] Standard [ ] 24 HR [ ] 48 HR [ ] 72 HR [ ] ___ HR
	92430519

Sample Identification	Matrix	Collection Start* Date	Collection Start* Time	Collection Stop* Date	Collection Stop* Time	Number of Containers	Requested Analyses & Preservatives: 8260 VOC	1,4-dioxane 8260 SIMS	Sample Comments
MW-46D	AQ	5/21/19		17	05	6	X	X	-001
MW-45		5/22/19		08	45	6	X	X	-002
MW-24D				09	05	6	X	X	-003
MW-31D				10	45	6	X	X	-004
MW-35D				11	10	6	X	X	-005
MW-34D				11	30	6	X	X	-006
MW-32D				11	55	6	X	X	-007
MW-36D				12	10	6	X	X	-008
MW-33D-235				13	55	6	X	X	-009
MW-33D-295				13	45	6	X	X	-010
MW-30D-273				14	20	6	X	X	-011
MW-30D-413				14	25	6	X	X	-012
MW-29D				14	45	6	X	X	-013
MW-28D				15	20	6	X	X	-014
Trip Blank		lab provided				4	X	X	-015

Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Shipment Method	Tracking Number(s)
	5/23/19	1430	FedEx			FedEx	8127 8179 4632
Relinquished By (Signature)	**Date**	**Time**	**Received By (Signature)**	**Date**	**Time**	**Number of Packages**	**Custody Seal Number(s)**
				5-24-19	9.50	3	

*Use stop time/date for composite and/or air samples; use only start time/date for all other samples.

Matrix: AQ = Aqueous, S = Soil, SE = Sediment, A = Air, W = Wipe, B = Bulk, O = Other (detail in comments)

Offsite

CHAIN-OF-CUSTODY RECORD

WSP | Parsons Brinckerhoff Office Address	Herndon, VA
Project Name	Kopflex
WSP | Parsons Brinckerhoff Contact Name	Eric Johnson
Project Location	Hanover, MD
WSP | Parsons Brinckerhoff Contact E-mail	eric.johnson@wspgroup.com
Project Number & Task	31401545.011
WSP | Parsons Brinckerhoff Contact Phone	571 232 5045
Sampler(s) Name(s)	CC
Sampler(s) Signature(s)	

Requested Analyses & Preservatives

No. 004546

WSP | PARSONS BRINCKERHOFF

Laboratory Name & Location: Pace, NC

Laboratory Project Manager: Taylor Ezell

Requested Turn-Around-Time: [X] Standard [ ] 24 HR [ ] 48 HR [ ] 72 HR [ ] ___ HR

Sample Identification	Matrix	Collection Start* Date	Collection Start* Time	Collection Stop* Date	Collection Stop* Time	Number of Containers	VOCs 8260	1,4-dioxane 8260 SIMS	Sample Comments
DUP052219A	AQ	5/22/19		0400		6	X	X	-015
MW-25D-130	"	"		1555		6	X	X	-016
MW-25D-190	"	"		1540		4	X	X	-017

Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Shipment Method	Tracking Number(s)
	5/23/19	1420	FedEx			FedEx	
Relinquished By (Signature)	**Date**	**Time**	**Received By (Signature)**	**Date**	**Time**	**Number of Packages**	**Custody Seal Number(s)**
				5-24-19	9:50	3	

*Use stop time/date for composite and/or air samples; use only start time/date for all other samples.

Matrix: AQ = Aqueous, S = Soil, SE = Sediment, A = Air, W = Wipe, B = Bulk, O = Other (detail in comments)