

EMERSUB 16, LLC

2020 OPERATIONS, MAINTENANCE, AND MONITORING REPORT – HYDRAULIC CONTAINMENT AND TREATMENT SYSTEM

FORMER KOP-FLEX FACILITY SITE
7565 HARMANS ROAD, HANOVER, MARYLAND
BROWNFIELD MASTER INVENTORY #MD0286

JULY 30, 2021





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PROJECT NO.: 31401545.010
DATE: JULY 30, 2021

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EXECUTIVE SUMMARY

WSP USA Inc. (WSP) has prepared this Operations, Maintenance, and Monitoring (OM&M) Report to assess the performance of the groundwater corrective measures implemented at the Former Kop-Flex Facility Site (Site) located at 7555 Harmans Road in Hanover, Maryland. This report describes the operation (including maintenance activities) and effectiveness of the hydraulic containment and treatment system (System) in mitigating groundwater quality impacts to the aquifer system for the reporting period of January 1, 2020 through December 31, 2020. WSP is submitting this report on behalf of EMERSUB 16, LLC, a subsidiary of Emerson Electric Co. The Site is currently owned by Harmans Road Associates, LLC, a subsidiary of Catalent Cell & Gene Therapy (Catalent).

The following Response Action Objectives (RAOs) with respect to groundwater were previously developed for the Site and continue to be used to gauge progress towards cleanup goals (WSP 2015a):

- controlling migration of groundwater with volatile organic compounds (VOCs) exceeding applicable human health criteria beyond the Former Kop-Flex property boundary
- reducing concentrations of VOCs in the aquifer system
- restricting groundwater use on the Site to prevent potential exposure to VOCs present at concentrations above applicable human health criteria

The System runtime was approximately 78% during the 2020 calendar year. Periods of downtime included scheduled and unscheduled shutdown events, routine maintenance, and replacement of System equipment. System shutdowns were described in the quarterly Corrective Measures Progress Reports submitted to the U.S. Environmental Protection Agency (EPA) in accordance with Administrative Order on Consent, Docket No. RCRA-03-2016-0170 CA, Section IV.C.3 (Consent Order) and are also described in this report. There was an extended, planned shutdown of the System from February 25 through March 17 to conduct cleaning of the specialty resin used to treat extracted groundwater. There were also a few unanticipated extended (1- to 2-week) System shutdowns due to malfunctioning equipment.

Repairs and improvements to address System down-time included replacement of the caustic pump head assembly with an updated model for the pH adjustment system and re-configuration of the water softener drain line to prevent failure of the water softener control valve. Transfer pump P-100B and its variable frequency drive (VFD), which stopped functioning during November 2019, were replaced during September 2020 to ensure transfer pump redundancy and minimize potential downtime for the System. Additionally, various components of the boiler feedwater tank level switch were replaced to ensure proper functioning during the resin regeneration process. The drain valves at the base of both resin vessels, which developed leaks following the resin cleaning, were also replaced during September 2020.

Based on the 2020 operational data, the System processed approximately 27.7 million gallons of groundwater extracted from the five recovery wells. Since System start up in March 2017 through the end of December 2020, the System has treated approximately 121.5 million gallons of water. Using the influent and effluent VOC and 1,4-dioxane concentrations and the volume of recovered groundwater, it is calculated that approximately 68.06 pounds (lbs) of Site-related VOCs and 31.51 lbs of 1,4-dioxane were recovered from the aquifer during 2020. The removal efficiency of the resin media was 100% for VOCs and a minimum of 95.8% for 1,4-dioxane. A total of approximately 514 lbs of Site-related VOCs and 1,4-dioxane have been removed since initiation of corrective measures through the end of the 2020 calendar year.

There were no National Pollutant Discharge Elimination System (NPDES) discharge permit exceedances during the reporting period. There was a single incident (November 2020) of the effluent sample exceeding the site-specific cleanup level for 1,4-dioxane (15 micrograms per liter [$\mu\text{g/L}$]). The exceedance was deemed to represent a short-term anomaly that was probably caused by a brief “slug” of water with relatively high contaminant concentrations entering the System. WSP and EMERSUB 16 notified the EPA and Maryland Department of the Environment (MDE) of the 1,4-dioxane concentration above the site-specific cleanup level in the November 2020 sample, and WSP implemented preventative measures to prevent the potential recurrence of a 1,4-dioxane exceedance in the effluent. Analysis of the treated water (i.e., effluent), excluding the November 2020 sample, indicated non-detect concentrations of VOCs and non-detect to low levels of 1,4-dioxane, with detected concentrations ranging from 2.0 $\mu\text{g/L}$ to 6.3 $\mu\text{g/L}$. The 1,4-dioxane concentrations in the samples reflected a continued increase in the rate of breakthrough for the resin, a condition that was initially identified during sampling conducted in December 2018 and was further investigated during 2019. The reduction in the resin’s 1,4-dioxane adsorptive capacity is caused by a buildup of organic constituents at the resin sorption sites that is not removed during steam regeneration. WSP completed a cleaning of the resin during February-March 2020, which involved removing the resin material from the System

treatment vessels and washing it with a heated caustic solution to remove the buildup of foulants. The cleaning resulted in improved 1,4-dioxane treatment capacity, as evidenced by the monthly sampling results, but did not return the resin to its original treatment capacity. Additionally, the rate of breakthrough for 1,4-dioxane has continued to increase during the year of System operation since the resin cleaning event. WSP has undertaken efforts to research methods to pre-treat the extracted groundwater to remove the organic foulants prior to treatment by the specialty resin.

The groundwater monitoring data indicates the three RAOs are being achieved. Evaluation of the 2020 groundwater level and groundwater quality data indicates the capture zones created by pumping from the recovery wells encompasses the extent of impacted groundwater within the shallow and deep zones of the Lower Patapsco Aquifer (LPA) onsite. Water level contour maps depicting hydraulic head conditions in the shallow (unconfined) zone of the LPA show a well-developed cone of depression centered around the shallow recovery wells. The potentiometric surface contour map for the deep (leaky confined) zone of the LPA shows an elongated hydraulic sink along the southern property boundary in response to continuous groundwater withdrawals from the deep recovery wells. Groundwater quality data gathered in 2020 exhibits generally decreasing trends in VOC and 1,4-dioxane concentrations. The decrease in concentrations is most noticeable in monitoring wells near the limits of the plume areas, suggesting that the System is reducing the extent of contaminant impacts within the aquifer system. The pumping rates in the recovery wells are set to enable plume containment and maximum mass recovery.

The long-term groundwater monitoring program will remain unchanged to continue to evaluate achievement of the groundwater RAOs. During the second quarter of 2021, WSP will also conduct pilot testing of a treatment technology for removing organic foulants from the extracted groundwater. The test results will be used to support decisions on the best approach for maintaining the resin's adsorption capacity for 1,4-dioxane and other Site contaminants.

1 INTRODUCTION

1.1 PURPOSE OF THIS REPORT

On behalf of EMERSUB 16, LLC, a subsidiary of Emerson Electric Co., WSP USA Inc. (WSP) is submitting this Annual Operations, Maintenance, and Monitoring (OM&M) Report describing the activities conducted during the 2020 reporting period (January 1, 2020 through December 31, 2020) as part of the corrective measures at the Former Kop-Flex Facility Site (Site) located at 7555 Harmans Road in Hanover, Maryland. The Site is identical to the area described as the “Facility” in the Consent Order. This report is being submitted in accordance with Section 14.2 of the October 2015 Response Action Plan (RAP), Revision 2 (WSP 2015a), which requires the submission of OM&M reports to the Maryland Department of the Environment (MDE) on an annual basis. The annual OM&M Report for calendar year 2019 was submitted to the U.S. Environmental Protection Agency (EPA) and MDE in July 2020.

1.2 SUMMARY OF CURRENT GROUNDWATER CONDITIONS

The aquifer at the Site is comprised of the Lower Patapsco Aquifer (LPA) of the Atlantic Coastal Plain aquifer system. The primary water-bearing zones in the LPA consist of a shallow (unconfined) zone and deep (confined) zone which are separated by a leaky confining unit of variable thickness. The direction of groundwater movement in the shallow zone mimics the general surface topography and is largely influenced by local surface water features, with flow to the west toward Stony Run. Groundwater flow in the deep zone is to the south and east, consistent with the regional groundwater flow in the LPA in this portion of the coastal plain aquifer system. Additional details regarding the Site’s hydrogeologic setting are provided in the October 2015 RAP, Revision 2 (WSP 2015a) and subsequent amendments to this document.

Groundwater sampling results confirm the existence of Site-related contaminants in both the shallow and deep portions of the LPA beneath the former Kop-flex property. The Site-related volatile organic compounds (VOCs) in groundwater consist of 1,1,1-trichloroethane (TCA) and its degradation products 1,1-dichloroethane (DCA) and 1,1-dichloroethene (DCE); and other chlorinated ethenes including cis-1,2-DCE, trichloroethene (TCE), and tetrachloroethene (PCE). Additionally, 1,4-dioxane, an additive historically used in commercial formulations of 1,1,1-TCA, is present in groundwater.

The installation of the hydraulic containment and treatment system (System) discussed in this report was completed in February 2017 to contain the groundwater plumes in both zones of the LPA. The contaminant plume in the deep confined portion of the LPA extends offsite to the south-southeast from the former Kop-Flex property. Groundwater conditions in the off-property area are described in a separate offsite groundwater monitoring report.

1.3 SYSTEM DESCRIPTION

Pursuant to the requirements under the EPA Consent Order (Section VI.B.1.a.) and RAP, a System has been installed at the Site to control the migration of chlorinated VOCs and 1,4-dioxane in groundwater. The System involves the continuous extraction and treatment of affected groundwater at the Site. Groundwater is extracted from a network of three shallow recovery wells (RW-1S through RW-3S), screened within the shallow zone of the LPA, and two deep recovery wells (RW-1D and RW-2D), screened in the deep zone of the LPA. The extracted groundwater is routed via underground piping to the System building. Treatment equipment is comprised of an equalization tank to regulate flow, bag filters for suspended solids removal, synthetic resin (AMBERSORB™ 560) for the removal of VOCs and 1,4-dioxane, a metering pump for the addition of caustic soda for pH adjustment, and two in-line aerators to increase dissolved oxygen levels in the water. The treated water is discharged to the nearby stream, Stony Run, in accordance with the requirements specified in State Discharge Permit Number 15-DP-3442 and National Pollutant Discharge Elimination System (NPDES) Permit MD 0069094 (Permit) issued by the MDE. Samples of the treated effluent are collected monthly for the analysis of VOCs and other parameters (including 1,4-dioxane), in accordance with the Permit and RAP. The installation of the System was completed in February 2017, with continuous, full-scale operation beginning on March 10, 2017. Figure 1 includes a schematic diagram of the System.

There are two synthetic resin vessels, identified as T-1100 and T-1200, which are arranged in series. They operate in a lead-lag configuration until the lead vessel reaches its adsorption capacity for the contaminants, which is based on the volume of water processed by the vessel. When the lead vessel has processed the pre-determined volume of water, the lag vessel is switched into the lead position, and the contaminant-loaded lead vessel is temporarily taken out of operation for regeneration. The loaded vessel is regenerated onsite using steam process equipment, including a boiler and steam superheater to remove the adsorbed constituents from the resin. The steam containing the desorbed constituents is discharged to the atmosphere through the steam reheat. Once the regeneration process is completed, the regenerated vessel is returned to operation as the lag vessel, and the cycle is repeated.

1.4 CLEANUP STANDARDS

The groundwater cleanup levels for the VOCs detected in the groundwater are based on the MDE Cleanup Standards (Cleanup Standards) for Type I/II Aquifers, except as noted for 1,4-dioxane, and are listed in the table below.

<u>Compound</u>	<u>Cleanup Standard</u> <u>(micrograms per liter [µg/L])</u>
1,1,1-TCA	200
1,1-DCA	2.8*
1,1-DCE	7
1,2-DCA	5
Chloroethane	2,100*
TCE	5
Cis-1,2-DCE	70
1,4-Dioxane	15**

* The standards for 1,1-DCA and chloroethane reflect the current numerical criteria promulgated by MDE, which were updated and issued in October 2018.

** The cleanup criterion for 1,4-dioxane, which is not included in the MDE Cleanup Standards, was determined from an evaluation of calculated risk-based concentrations in groundwater. Based on this evaluation, an alternate, property-specific cleanup criterion of 15 µg/L was established for 1,4-dioxane at the Site.

2 SYSTEM OPERATION AND PERFORMANCE MONITORING

2.1 SYSTEM RUNTIME AND DOWNTIME

During the reporting period from January 1, 2020 through December 31, 2020, the System operated approximately 78% of the time. Some downtime was related to the completion of routine maintenance activities, such as changing bag filters, cleaning strainers, or testing the high-sump alarm, in accordance with WSP's OM&M Manual (WSP 2018). Additional non-routine System shutdowns associated with unexpected events and System maintenance, and the scheduled resin cleaning event occurred as described below.

- The System experienced multiple brief (a few hours) manual shutdowns to conduct maintenance to various System components. The System also experienced a few short (a few hours to 2 days) automatic shutdowns due to malfunctioning of the pH adjustment system, requiring manual adjustment onsite by a System operator.
- The System automatically shut down on December 26, 2019 due to malfunctioning of the caustic anti-siphon valve for the pH adjustment system. The System was restarted on January 6, 2020 following replacement of the valve.
- The System automatically shut down on January 20, 2020 due to malfunctioning of the pH adjustment system. The System was restarted on January 22, 2020 following replacement of the caustic pump tubing and effluent ball valve.
- From February 25 through March 17, 2020 there was an extended, scheduled System shutdown to clean the specialty resin used to treat extracted groundwater as described in Section 2.4.2.
- The System automatically shut down on March 28, 2020 due to a high-high differential pressure alarm for resin vessel T-1100. The System was restarted on March 30, 2020 following cleaning of the T-1100 and T-1200 effluent wye strainers, which were clogged with resin material.
- On April 5, 2020 the pressure transducer deployed in well RW-1D, which controls the operation of the variable frequency drive (VFD) for the submersible pump installed in the well, started to malfunction. The pressure transducer failed on April 10, 2020. The RW-1D pressure transducer was replaced and normal operation of the submersible pump resumed on April 22, 2020.
- On April 6, 2020, the System operator discovered that caustic soda had leaked onto the floor of the treatment building due to a rupture in the caustic pump tubing. Upon discovery of the caustic leak, the operator manually shut down the System to contain the leak, evaluate the situation, and conduct any necessary System repairs. Based on System data, the leak likely started on April 5 and resulted in the building floor sump filling with caustic soda, rendering the sump pump inoperable. The leak also caused some minor damage to the caustic pump head assembly. The operator used water to dilute the caustic spill and clean the floor, and all liquid was contained and diverted to the System equalization tank for processing. The operator replaced the caustic pump tubing and restarted the system later in the day on April 6, 2020. A new sump pump was installed in the floor sump on April 10, 2020.
- The System automatically shut down on April 29, 2020 due to a problem with the tubing connection fitting for the caustic pump. The System was restarted on May 11, 2020 following replacement of the fitting and entire caustic pump head assembly, which was damaged by the caustic leak discovered on April 6.
- The System automatically shut down on May 21, 2020 due to a high-high level alarm for the equalization tank. The alarm was caused by excessive back pressure on the System transfer pump due to high differential pressure across resin vessel T-1100, which had just been regenerated, combined with an elevated differential pressure across the bag filters. The System was restarted on May 22, 2020 after cleaning the T-1100 effluent wye strainer and changing the bag filters.
- On May 29, 2020, the System was manually shut down after hardness was detected in the soft water supply to the boiler. The System was restarted on June 12, 2020 following replacement of multiple components of the water softener control valve and brine regeneration of the water softener resin.
- The System automatically shut down on June 23, 2020 due to an interruption to the regeneration of resin vessel T-1100 caused by malfunctioning of the boiler feedwater tank level switch. The System was restarted on June 24, 2020 following repair of the level switch. The System automatically shut down again on July 18, 2020 due to an interruption

to the regeneration of resin vessel T-1100 caused by another problem with the boiler feedwater tank level switch. The System was restarted on July 24, 2020 following replacement of an electrical component of the level switch. The System operator manually shut down the System on August 10, 2020 after the regeneration of resin vessel T-1200 was interrupted due to a malfunction of the boiler feedwater tank level switch. The System was restarted on August 12, 2020 following replacement of the mechanical float component of the level switch.

- On September 4, 2020 the regeneration of resin vessel T-1200 was interrupted by a steam reheater error. The System operator was unable to troubleshoot the alarm condition and manually shut down the System later that day. The System was restarted on September 10, 2020 following a manual reset of the steam reheater burner.
- The System automatically shut down on September 11, 2020 due to a System human-machine interface (HMI) malfunction. The System was restarted on September 14, 2020 following a manual reset of the HMI.
- The System automatically shut down on September 19, 2020 due to a high-high differential pressure alarm for resin vessel T-1100. The System was restarted on September 21, 2020 following cleaning of the effluent wye strainers for both resin vessels.
- On September 21, 2020 the RW-1D submersible pump stopped operating due to a pump VFD fault. The RW-1D pump was restarted on September 23, 2020 following a manual reset of the pump VFD.
- The System automatically shut down on September 22, 2020 due to an interruption to the regeneration of resin vessel T-1200. The System was restarted on September 23, 2020 after switching the boiler transfer pump from primary to secondary. The System shut down again on September 29, 2020 due to an interruption to the regeneration of resin vessel T-1200 while the primary boiler transfer pump was in operation. The System was restarted later that day after again switching to the secondary transfer pump. (It was eventually determined that the operation of the check valve at the effluent end of the primary boiler transfer pump was affecting pump performance, and the effluent check valves for both pumps were replaced in early 2021). The boiler operated using only the secondary transfer pump from September 29, 2020 through the remainder of 2020.
- On October 17, 2020 the RW-1D submersible pump again stopped operating due to a pump VFD fault. The RW-1D pump was restarted on October 19, 2020 following a manual reset of the pump VFD. This same problem reoccurred on October 24, 2020. The RW-1D pump was restarted on October 28, 2020 following another manual reset of the VFD.

When fully operational, the groundwater withdrawal rate for the System ranged from approximately 67 gallons per minute (GPM) to 75 GPM, with an average rate of 71 GPM during the reporting period. The design flow rate for the System was approximately 80 GPM (WSP 2015a). Based on the System effluent totalizer, approximately 27.7 million gallons of groundwater was treated and discharged to Stony Run via Outfall 001 from January 1, 2020 through December 31, 2020. Information on the groundwater extraction rates for the shallow and deep recovery wells is provided in Section 2.2.3.

2.2 OPERATIONAL AND PROCESS MONITORING DATA

2.2.1 OVERVIEW OF TREATMENT SYSTEM OPERATION

During System operation, water samples were regularly collected for chemical analysis to monitor and evaluate VOC and 1,4-dioxane concentrations in the System influent (Table 1) and effluent (Tables 2 and 3). Total constituent of concern (COC) concentrations (VOCs + 1,4-dioxane) for the System influent were generally consistent during the reporting period, with the highest System influent concentration (554 µg/L) detected in the sample collected during April 2020, and the lowest concentration (404 µg/L) detected in the sample collected during January 2020 (Figure 2). The relatively high total COC concentration in the April 2020 influent sample was due to an elevated concentration of 1,4-dioxane (260 µg/L), more than twice the concentration of 1,4-dioxane detected in all other influent samples collected during 2020 (110 µg/L).

Analysis of the treated water (i.e., effluent) indicated non-detect concentrations of VOCs and, excluding the November 2020 sample, non-detect to very low levels of 1,4-dioxane, with concentrations above the detection limit ranging from 2.0 µg/L to 6.3 µg/L. There was a single incident (November 2020) of an effluent sample having a 1,4-dioxane concentration (43 µg/L) exceeding the Site-specific cleanup goal of 15 µg/L. A thorough assessment of the System operational data did not identify any operational issues that would have resulted in reduced 1,4-dioxane removal efficiency at the time of the November sampling event. Subsequent System effluent samples collected on December 3 and December 15, 2020 had 1,4-dioxane

concentrations of 2.0 µg/L and 2.2 µg/L, respectively, an order of magnitude below the level in the November sample. Based on evaluation of the System operation and subsequent effluent sample results, the elevated 1,4-dioxane concentration in the November 2020 sample was determined to represent a short-term anomaly that was probably caused by a brief “slug” of water with relatively high contaminant concentrations entering the System. To prevent potential recurrence of this incident, a regeneration “reset”, whereby the System is shut down and both resin vessels are regenerated prior to System restart, was completed during early 2021 and will be done semiannually. WSP notified the USEPA and MDE in early January 2021 of the 1,4-dioxane concentration in the November 2020 sample, and the results of its incident evaluation and planned corrective measures.

Samples of the treated effluent were collected for the analysis of other parameters, in addition to VOCs and 1,4-dioxane, in accordance with the Permit. The analytical results for all samples indicate compliance with the effluent limitations specified in the Permit (Table 2).

2.2.2 TREATMENT SYSTEM MONITORING AND PERFORMANCE

The System treatment equipment performance was monitored by collecting and analyzing influent and effluent water samples from in-line sample ports located at the treatment building. The System effluent samples also fulfilled the monitoring requirements specified in the Permit. The samples were analyzed for VOCs using EPA SW-846 Test Method 8260B (for influent samples) or EPA Method 624 (for effluent samples) and 1,4-dioxane using modified EPA SW-846 Test Method 8260B with Selected Ion Monitoring (SIM). Lab analysis was conducted by the Phase Separation Science, Inc. laboratory located in Catonsville, Maryland.

The historical VOC and 1,4-dioxane results for the System influent and effluent samples are summarized in Tables 1, 2, and 3. Certified laboratory analytical reports for the January 2020 through December 2020 influent and effluent samples are included in Appendix A. Influent VOC and 1,4-dioxane results were compared to the Cleanup Standards, as stated in Section 1.4 of this document. Based on the analytical results, 1,1-DCA, 1,1-DCE, and 1,4-dioxane were the only constituents detected above their respective Cleanup Standard in the influent samples. Other chlorinated VOCs detected in the System influent, albeit not above the Cleanup Standards, included 1,1,1-TCA, 1,2-DCA, chloroethane, TCE, and cis-1,2-DCE. For the non-exceeding COCs, 1,1,1-TCA and chloroethane were detected at the highest concentrations in the influent samples, with the chlorinated ethenes TCE and cis-1,2-DCE, and 1,2-DCA present at very low concentrations (< 2 µg/L). The total VOC concentrations in the influent ranged from 290 µg/L (January 2020) to 331 µg/L (July 2020). The 1,4-dioxane concentrations in the influent ranged from 110 µg/L (January, July, and November 2020) to 260 µg/L (April 2020).

Figure 2 plots the historical concentrations of total VOCs and 1,4-dioxane in the System influent from start-up (March 2017) through the end of 2020. This plot shows a generally decreasing trend for influent concentrations during the initial 6 months of operation. Influent concentrations slightly increased from late 2017 through the first half of 2018 primarily as a result of higher levels of VOCs in the extracted groundwater. Total VOC concentrations have gradually decreased since the fourth quarter of 2018, which is reflected by the two lowest influent concentrations for total VOCs and 1,4-dioxane being recorded during the January 2020 and November 2020 sampling events. The total VOC and 1,4-dioxane concentrations are below anticipated concentrations used for the design of the System. Based on the measured influent concentrations, the corresponding resin loading rate should require two regenerations per week. However, the regeneration frequency was increased to three times per week in April 2019 based on increasing detections of 1,4-dioxane in the System effluent.

No VOCs were detected above the method reporting limits in the effluent samples collected during 2020. Based on these sampling results, the VOC removal efficiency during the reporting period was 100%. The 1,4-dioxane concentrations in the effluent water samples ranged from below the method reporting limit of 1.0 µg/L (seven samples) to 43 µg/L (November 2020). As discussed in Section 2.2.1, the elevated concentration of 1,4-dioxane in the November 2020 sample was likely a short-term anomaly. If this single incident is excluded, the highest concentration of 1,4-dioxane was detected in the effluent sample collected during September 2020 (6.3 µg/L). This sample was collected on a Monday just prior to initiating regeneration of the lead resin vessel. System regenerations are currently initiated three times per week on Monday, Wednesday, and Friday. The concentration in the September 2020 sample is therefore considered representative of the current longest loading cycle - Friday to Monday, or approximately 72 hours - for the System between media regenerations. Based on the sampling results, the removal efficiency for 1,4-dioxane was a minimum of 95.8% during 2020. (Based on the characteristics of the 1,4-dioxane breakthrough curve, the effluent concentration represents a maximum concentration and not the average concentration for the monitoring period. As a result, actual removal efficiency is greater than 95.8%.) Removal

efficiencies for 1,4-dioxane during 2017, 2018, and 2019 were estimated at 100%, 99.5%, and a minimum of 93.3%, respectively.

During the 2020 reporting period, the System removed an estimated 68.06 pounds (lbs) of the primary chlorinated VOCs: 1,1-DCE, 1,1-DCA, and 1,1,1-TCA, and 31.51 lbs of 1,4-dioxane (Table 4). The average flow rate (in GPM) for the System effluent provided in Table 4 was determined based on fully operational days. Figure 3 plots the historical mass removal of the primary chlorinated VOCs and 1,4-dioxane by the System from start-up (March 2017) through December 2020. As shown in this plot, mass removal of the primary COCs has exhibited a consistent increasing trend since System start-up.

2.2.3 RECOVERY WELLS

GROUNDWATER PUMPING RATES

The monthly average extraction rates and total volume withdrawn for each recovery well are provided in Table 5 and Table 6, respectively. Data for each recovery well is collected weekly by the certified System operator from a flowmeter located at the wellhead. Higher extraction rates, averaging around 30 GPM during normal System operation, were set at each of the deep recovery wells compared to each of the shallow recovery wells, which averaged around 2 to 5 GPM, to ensure capture of the southward migrating plume in the confined portion of the aquifer. For the shallow recovery wells, a higher extraction rate was established in RW-1S because of the higher VOC levels in the extracted groundwater at this location (Figure 4). The average combined flow rate determined from the summation of the individual recovery well extraction rates (Table 5) includes data from nonoperational and partially operational days. Most of the recovery wells saw a significant decrease in average annual extraction rate during 2020 due to the multiple and sometimes prolonged shutdowns of the System described in Section 2.1.

MASS REMOVAL AT GROUNDWATER EXTRACTION POINTS

WELL DISCHARGE SAMPLING

In accordance with the Groundwater Monitoring Plan (WSP 2015b), water samples were collected from the shallow and deep recovery wells during the weeks of May 10, 2020 and November 22, 2020. Groundwater discharge from each recovery well was collected via sampling ports located in the well head piping. The valve for the sampling port was opened to deliver a low flow stream of water to fill the sample bottles. Initially, a small amount of water was purged from the sampling port and collected in a 5-gallon bucket. After approximately one minute, field parameters (pH, conductivity, turbidity, and temperature) were measured for the well discharge using a multi-parameter water quality meter to confirm the extracted groundwater reflected the known hydrogeochemical conditions in the aquifer. A groundwater sample was then collected for laboratory analysis of VOCs by EPA SW-846 Test Method 8260D and 1,4-dioxane using modified EPA SW-846 Test Method 8260D SIM by the Pace Analytical Services laboratory in Huntersville, North Carolina. The purge water generated from the recovery well sampling was processed through the System.

SAMPLE RESULTS

The May and November 2020 recovery well analytical results are presented in Table 7, and historical sampling data is presented in Table 8. Results for the 2020 recovery well samples are also included in Figure 5 to support the trends shown in Figure 4. The sampling data is used to assess contaminant mass recovery at the groundwater extraction points in the shallow and deep portions of the aquifer. Figure 4 shows the trends in total VOC and 1,4-dioxane concentrations for each well and its average pumping rate. Based on the 2020 data, the total VOC and 1,4-dioxane concentrations have remained fairly constant in all wells although levels of chlorinated VOCs consistently decreased in the RW-3S discharge during the 2020 reporting period. As mentioned above, RW-1S discharge has the highest total VOC and 1,4-dioxane concentrations, and therefore the highest pumping rate, for the shallow recovery well network. Concentrations of VOCs and 1,4-dioxane between RW-1D and RW-2D are fairly similar, and therefore the well pumps are set at similar pumping rates.

Mann-Kendall statistical evaluations were conducted on the historical (2017 through 2020) recovery well sampling results for 1,1-DCA, 1,1-DCE, and 1,4-dioxane concentrations. A 95% confidence limit was used for determining a statistically significant trend in the data (Table 9). Most shallow recovery wells exhibited decreasing trends with regards to these constituents. The exception is recovery well RW-3S. Even though RW-3S generally has the lowest VOC concentrations of the shallow recovery wells, the well exhibited increasing trends for all constituents during the 2017 through 2020 period. The

increasing trends in the well discharge are believed to be the result of pumping-induced transport of residual dissolved constituents present in the thick sequence of shallow fine-grained (silt and clay) deposits in this portion of the Site. RW-3S concentrations will be evaluated with respect to the historical data during 2021 to determine if the increasing trends continue or if the concentration increases in 2019 through early 2020 were a transient condition. Deep recovery well RW-1D exhibited no trends for 1,1-DCA and 1,1-DCE; however, the well exhibited an increasing trend for 1,4-dioxane. In contrast, deep well RW-2D had decreasing trends for all constituents.

2.3 WASTE MANAGEMENT

2.3.1 ROUTINE SYSTEM ACTIVITIES

Bag filters for the removal of suspended solids from the treatment system influent were regularly changed out with new bag filters. The frequency of bag filter replacement increased from monthly at the beginning of 2020 to weekly by the end of 2020. Spent bag filters were managed offsite as non-hazardous waste (general trash). Disposable materials from the groundwater and System sampling activities (e.g., gloves) were also managed offsite as non-hazardous waste.

2.3.2 RESIN CLEANING WASTE

The spent caustic solution containing desorbed organics from the resin cleaning (Section 2.4.2) was containerized, neutralized, and transported to an approved offsite wastewater treatment facility. (Documents pertaining to the offsite disposal of the organic-rich cleaning solution are provided in Appendix B.) In addition, the high pH, organic-rich water produced during the post-cleaning regenerations of each vessel was handled in the same manner. Most of the wastewater was managed as a non-hazardous waste. However, approximately 5,000 gallons had to be managed as a characteristically hazardous waste (D002) due to a pH slightly above the regulatory threshold level of 12.5 standard units.

The amount of hazardous wastewater generated during this one-time event would necessitate the System's generator status be temporarily changed from small quantity to large quantity. Since the production of this high pH wastewater constitutes an episodic generation of a hazardous waste, EMERSUB 16 and WSP contacted MDE to confirm that it would not be regulated as a large quantity generator under the Code of Maryland Administrative Regulations. MDE responded on August 3, 2020, that EMERSUB 16 will retain its conditionally exempt small quantity generator status provided that in the future it does not exceed the large quantity generator thresholds for hazardous and acute hazardous waste.

2.4 RESIN FOULING

2.4.1 BACKGROUND

In response to increasing detections of 1,4-dioxane in the System effluent, WSP worked with the treatment system vendor (Emerging Compound Treatment Technologies [ECT2]) to investigate the reduction in 1,4-dioxane removal efficiency and identify a solution for regaining the treatment resin loading capacity. The investigation concluded that this reduced treatment efficiency is caused by the fouling of the resin material via the buildup of trace concentrations of adsorbed organic constituents over time that are not completely removed during the steam regeneration process. Given this determination, WSP increased the frequency of the steam regenerations in 2019 to ensure 1,4-dioxane concentrations in the treated water remain below the Site cleanup goal, while developing a plan for restoring System treatment capacity.

Bench-scale testing of approaches to chemically remove the organic constituents fouling the treatment resin was completed by ECT2 in early September 2019. Based on evaluation of the test results, the selected cleaning procedure was identified as removal of the treatment resin from the vessels and "washing" the material with a heated caustic solution. The cleaned resin material would then be placed back into the vessels and the System returned to normal operation.

2.4.2 RESIN CLEANING

ECT2 retained Recirculation Technologies, LLC (RTI), a vendor specializing in the cleaning and maintenance of regenerable resins used for water treatment, to perform the onsite ex-situ cleaning of the resin. In preparation for the resin cleaning activities, the System was shut down on February 25, 2020 to allow for the steam regeneration of both resin vessels to remove any Site-related VOCs and 1,4-dioxane from the media.

The resin cleaning was completed over the weekend of February 28, 2020 through March 1, 2020. On February 28th, the resin was removed from the vessels and transferred to separate tanks on RTI's mobile cleaning trailer. The resin was cleaned by adding heated caustic solution to the tanks, agitating the mixture for one hour using compressed air, and then transferring the "spent" caustic solution to a double-walled frac tank for subsequent management and disposal. This process was repeated a total of four times for the resin from each vessel, after which the cleaned resin was returned to its original vessel. Subsequent analysis of samples of the pre- and post-cleaned resin, as well as the observed color change in the high pH water in contact with the media, suggests that the cleaning process was successful at removing the majority of adsorbed organic compounds as well as very fine sediment from the resin (Reports prepared by RTI of the ex-situ resin cleaning activities and results are included in Appendix B).

During the week of March 2nd, the cleaned resin in each vessel was regenerated twice to desorb additional organic carbon foulants and remove residual caustic from the media. The condensate and rinse water generated during these regeneration events was transferred to the double-walled frac tank because of the elevated pH and brownish color of the water, which indicated the continued removal of organic constituents from the resin at relatively high concentrations. Following the completion of the back-to-back regenerations for each vessel, controlled operation of the System began on March 11, 2020. Given the continued presence of residual caustic on the resin, it was determined that muriatic acid would need to be temporarily added to the System effluent to lower the pH to within the discharge permit limits. Manual operation of the System was conducted intermittently from March 11th through March 17th, to allow for the controlled addition of the acid to ensure compliance with the effluent limitations. Normal, automated operation of the System, with caustic addition for pH adjustment, resumed on the afternoon of March 17, 2020.

2.4.3 POST-CLEANING 1,4-DIOXANE BREAKTHROUGH SAMPLING

Beginning in late April and resuming in mid-May 2020, WSP collected treated water samples from the lead resin vessel to evaluate 1,4-dioxane breakthrough of the cleaned resin material. Copies of the certified laboratory analytical reports for these samples are provided in Appendix B. Graphical analysis of the sampling data indicated the cleaned resin exhibited a significant (approximately 7x) increase in the amount of water processed before reaching the site-specific cleanup level of 15 µg/l compared to the pre-cleaned material (Figure 1 in Appendix B). However, the adsorptive capacity of the treated resin did not achieve that of the "virgin" material.

2.4.4 CHARACTERIZATION OF ORGANIC CONSTITUENT FOULANTS

As part of the continuing evaluation of the resin fouling, WSP conducted additional sampling to characterize the nature of the organic foulants in the groundwater from the impacted portion of the aquifer system. This foulant characterization involved assessing the levels of natural organic matter and petroleum-related constituents by collecting samples of the extracted groundwater from influent and effluent points in the System along with samples from the unimpacted portions of the LPA.

On May 14, 2020, samples of the extracted groundwater from the shallow and deep recovery wells, effluent from the lead resin vessel, and the System effluent were collected from sampling ports along the water conveyance lines for the System. In addition, groundwater samples were collected from the background monitoring wells for the shallow (MW-01) and deep (MW-27D) portions of the LPA using the low-flow purge and sample procedure. All samples were analyzed for the following constituents:

- extractable petroleum hydrocarbons, diesel range organics (DRO), with and without silica gel treatment, using Standard Method 8015C;
- hexane extractable material (HEM), with and without silica gel treatment, using EPA Method 1664B;
- total organic carbon (TOC) using Standard Method 5310B;

- fulvic acid; and
- humic acid

Analytical results for the May 2020 foulant characterization samples are summarized in Table 10. A copy of the certified laboratory analytical report for the samples is included in Appendix B. Extractable petroleum hydrocarbons, as DRO, were not detected in any of the monitoring well or process water samples except for the background sample and duplicate from deep monitoring well MW-27D. The non-detect levels in the silica gel treated samples from this well suggest the diesel range constituents are petroleum degradation products. The non-detect results for HEM also indicate the general lack of petroleum-related constituents in the portion of the aquifer system targeted for groundwater extraction. Detectable concentrations of TOC, which is typically used as a measure of natural organic matter (NOM), along with compounds that are representative of NOM - fulvic acid and humic acid - were found in all collected samples. Overall, the May 2020 sampling data confirm the organic constituents fouling the resin material consist almost exclusively of NOM and not petroleum hydrocarbons or petroleum degradation products.

On July 30, 2020, another round of samples of the extracted groundwater from the shallow and deep recovery wells, effluent from the lead resin vessel, and System effluent, together with a sample of the condensate from the steam regeneration process, were collected to further assess the levels of the NOM foulants in the System water. All samples were analyzed for TOC using Standard Method 5310C and dissolved organic carbon (DOC) using EPA Method 415.1. Analytical results for these foulant characterization samples are summarized in Table 11. A copy of the certified laboratory analytical report for the samples is included in Appendix B. As with the previous (May 2020) samples, low concentrations of TOC and/or DOC were detected in all collected samples. Using the TOC results, the organic carbon concentrations were around 1 milligram per liter (mg/L) in the water from the shallow recovery wells and less than 0.5 mg/L in water extracted from the deep wells. The relatively high TOC concentration in the shallow recovery well sample may reflect the greater VOC and 1,4-dioxane levels in the groundwater withdrawal from the shallow zone compared to the deep zone (see the recovery well sample data in Table 7). The effluent from the lead treatment vessel and System effluent had lower TOC concentrations (less than 0.5 mg/L), which would be consistent with the removal of both site-related contaminants and NOM by the resin media. The regeneration condensate had the highest concentrations of TOC (9.2 mg/L) and DOC (9.0 mg/L) in the samples collected from the System. The detection of relatively high levels of organic carbon in the condensate indicates the desorption of some portion of the NOM foulants during the steam regeneration process. However, this NOM-containing condensate from the steam regeneration process is ultimately pumped to the System equalization tank and processed through the treatment resin with extracted groundwater.

2.4.5 METALS FOULANT EVALUATION

Starting in late 2019, WSP and the System operation and maintenance subcontractor have noted an increase in the loading of the bag filters that remove solids from the groundwater before treatment by the resin to remove VOCs and 1,4-dioxane. Bag filters are replaced on a monthly basis, unless differential pressure readings indicate the need for more frequent replacement. While the frequency of bag filter replacement was monthly from System startup in early 2017 through late 2019, the frequency steadily increased to weekly by late 2020.

Given the increase in solid material removed from the extracted groundwater, System samples were collected on December 15, 2020 at the following locations to assess metal concentrations in the process flow:

- before the bag filters (VSP-2),
- after the bag filters and before the first resin vessel (VSP-3),
- between the resin vessels (T-1200 Lead Ef), and
- after the resin vessels (Effluent VSP-4)

Samples were analyzed for hardness and total and dissolved aluminum, copper, iron, lead, nickel, and zinc using EPA-approved test methods to identify metal precipitants that could explain the increased solids loading to the bag filters and/or indicate potential fouling of the resin media.

Analytical results for the December 2020 samples are summarized in Table 12. A copy of the certified laboratory analytical report for the metals foulant evaluation is included in Appendix C. The analytical results did not identify any metals in groundwater as potential System foulants. In addition, the data showed no indication that metals precipitation could be occurring within the System treatment components or process piping. These results indicate that the increased loading of the

bag filters is likely due to higher levels of suspended sediment/particulates in the extracted groundwater entering the treatment system.

Concentrations of dissolved and total aluminum in the effluent sample were non-detect, whereas those in the three upstream samples ranged from 120-185 µg/L for dissolved aluminum and 126-182 µg/L for total aluminum. Aluminum tends to remain dissolved in water at low and high pH but will precipitate out of solution within intermediate pH ranges (pH of approximately 5 to 9 standard units [SU]). The pH of the influent groundwater typically measures around 5 SU, and caustic soda is added to the treated groundwater to raise the pH of the effluent to a setpoint of 7.5 SU. It is believed that the addition of caustic soda for pH adjustment of the System effluent causes aluminum to precipitate out of the treated groundwater in the post-treatment effluent piping with no impact to System treatment performance.

2.4.6 PRE-TREATMENT TECHNOLOGY EVALUATION

During the fall of 2020, WSP worked with two vendors – Calgon Carbon and ECT2 - to evaluate treatment technologies that could remove natural organic carbon from the influent, thereby preventing fouling of the resin media. This initial phase of the evaluation involved the completion of bench-scale isotherm studies of two proven technologies – granular activated carbon (GAC; Calgon Carbon) and ion exchange (ECT2) – for removing these constituents.

WSP collected two (2) 5-gallon unpreserved samples of the untreated System influent groundwater on October 15, 2020 for the bench-scale testing. Each 5-gallon sample was containerized in a closed head polyethylene pail and shipped unpreserved overnight to each of the two vendors for completion of the isotherm studies.

The GAC isotherm study was inconclusive due to the non-detect levels of natural organic carbon indicator compounds – tannins and lignins – in the influent. Evaluation of the test results for the ion exchange isotherm study identified three resins that were successful in removing the natural organic carbon (ECT2 presentation summarizing the ion exchange isotherm test results is provided in Appendix D). Based on these results, WSP planned to implement a small-scale pre-treatment pilot test using one of the ion exchange resins during the spring of 2021.

2.5 SYSTEM MAINTENANCE

2.5.1 ROUTINE MAINTENANCE ACTIVITIES

During the 2020 reporting period, WSP subcontracted the weekly OM&M of the System to a local contractor, S&S Technologies, Inc. of Elkton, Maryland. Subcontractor oversight was provided by WSP engineer Ms. Shannon Burke, working under the direction of Mr. Steve Kretschman, P.E., the engineer of record for the System. OM&M activities were conducted in accordance with the current version of the OM&M Manual, dated May 2018.

Routine OM&M activities performed during the reporting period included the following:

- regeneration of the resin
- replacement of bag filters
- cleaning of the resin vessel wye strainers
- cleaning and recalibration of the inline pH probe
- recording instrumentation readings (flow, pressure, temperature)
- system-wide leak inspections
- steam boiler system inspections and testing

In conjunction with the inspection and testing of the boiler system, a local water treatment contractor (Chem-Aqua, Inc.) completed monthly checks of the boiler water chemistry. Quarterly mechanical inspections and maintenance of the steam boiler components were performed by another local contractor (Tate Engineering Systems, Inc.).

In addition to the routine tasks, annual OM&M activities were performed on July 27, 2020 and included the following:

- cleaning and inspection of well vaults and piping tee-boxes

- recovery well water level transducer accuracy check
- system-wide manual exercising of ball valves
- system-wide wye strainer removal and cleaning

Based on the annual inspection findings, it was determined there are no leaks for any of the System components and cleaning of the inside of the flow equalization tank was not necessary.

2.5.2 NON-ROUTINE MAINTENANCE ACTIVITIES

PH ADJUSTMENT SYSTEM

There were multiple System shutdowns throughout 2020 associated with the pH adjustment system, resulting in increased site visits for inspection and replacement of various components. The problems with the pH adjustment system were related to wear on components used to add caustic soda into the treated water pipeline. During January 2020, WSP replaced the caustic anti-siphon valve, which is installed at the point where caustic solution enters the treated effluent water piping, and the ball valve and check valve located on the piping at the effluent end of the caustic pump. WSP also replaced the roller assembly for the caustic pump with the slightly used part from the sequestrant pump, which was briefly used during the first few months of System operation in 2017.

Following the caustic soda leak on early April 6, 2020, WSP replaced the entire caustic pump head assembly, caustic pump tubing, and tubing connection fittings. The caustic pump is closely inspected by a System operator at least once per month for signs of wear and the tubing is replaced as necessary. There have been only a few, minor System shutdowns associated with the pH adjustment system since mid-2020.

DIFFERENTIAL PRESSURE ACROSS RESIN VESSEL T-1100

After the resin cleaning event in late February 2020, there was a temporary recurring problem of high differential pressure across resin vessel T-1100 triggering shutdown of the System. This problem was isolated to one part of the T-1100 vessel and occurred immediately following steam regeneration of the vessel and could be corrected by manual cleaning of the wye strainer on the effluent side of the vessel. The effluent wye strainers are used to catch loose resin material from the vessels. It is believed that the process of disturbing - i.e., removing and then replacing – the resin during the resin cleaning event is the reason for this problem. The final occurrence of this problem was on September 19, 2020, when the System shut down due to a high-high differential pressure alarm for resin vessel T-1100. The problem has not recurred since the System was restarted on September 21, 2020, following cleaning of the T-1100 and T-1200 effluent wye strainers.

RECOVERY WELL RW-1D

Each recovery well has a dedicated pressure transducer that monitors water level in the well and controls the function of the recovery well pump VFD. The pressure transducer deployed in well RW-1D started to malfunction on April 5, 2020 and failed on April 10, 2020. The RW-1D pressure transducer was replaced on April 22, 2020 and there have been no issues with the new unit.

Following the regeneration of a resin vessel, the System shuts down for a few seconds to allow for reconfiguration of the System flow path when the cleaned vessel is brought back on-line. During September and October 2020, there was a recurring fault for the RW-1D pump VFD, whereby the RW-1D pump failed to restart immediately following the completion of a regeneration. When this issue occurred, the RW-1D pump was restarted via a manual reset of the pump's VFD.

The problems noted above were limited to recovery well RW-1D and did not affect the operation of the other shallow or deep wells comprising the hydraulic containment system. The extraction of COC-impacted groundwater continued to occur while repairs were affected to bring RW-1D back on-line.

WATER SOFTENER CONTROL VALVE

On May 29, 2020, hardness was detected in the soft water supplied to the System boiler for steam production and rinse water during the resin regeneration process. Since hard water (*i.e.*, water with high concentrations of dissolved minerals, particularly calcium and magnesium) is known to cause issues with steam boiler performance and steam quality, resin

regeneration, and thus System operation, could not be continued until the hard water issue had been addressed. The System was shut down and the water softener was subsequently inspected by the subcontractor responsible for monitoring and maintaining the boiler water chemistry (Chem-Aqua, Inc.). This inspection discovered that corrosion and deposition of material in the water softener drain line, which was composed of carbon steel and incompatible with the brine used to regenerate the water softener resin, had caused excessive back pressure on the water softener control valve, resulting in its failure. The carbon steel drain line for the water softener was replaced with polyvinyl chloride piping. The subcontractor also replaced various components of the water softener control valve. The System was restarted on June 12, 2020 following maintenance to the control valve and brine regeneration of the water softener resin. Hardness has not been detected in the soft water supply since repairs were made to the control valve.

STEAM BOILER

The boiler feedwater tank has a level switch that controls a solenoid valve that allows soft water to enter the boiler feedwater tank. Failure of this level switch halts steam production as there is no feedwater to the steam boiler. The electrical component of the level switch failed on July 18, 2020 and was replaced on July 24, 2020. Shortly after completing these repairs, the mechanical float component of the switch failed on August 10, 2020 and was replaced on August 12, 2020. There have been no problems with the new level switch components. Operation of the level switch will be monitored as part of the routine System O&M activities and components repaired or replaced as necessary.

During September 2020, there were two instances when the System shut down due to an interruption to the regeneration process. After performing some troubleshooting, it was determined the effluent check valve for the primary boiler transfer pump was likely creating back pressure, reducing pump efficiency, and therefore in need of replacement. The boiler operated using only the secondary transfer pump from September 29, 2020 through early 2021. The primary boiler transfer pump has been operating normally since replacement of the effluent check valves for both boiler transfer pumps in February 2021.

TRANSFER PUMP P-100B

On November 21, 2019, the System automatically shut down due to the failure of transfer pump P-100B. The System was restarted the following day on November 22 using redundant transfer pump P-100A and continued to operate using only P-100A through September 2020. During the resin cleaning event in late February 2020, ECT2 determined that both the liquid end of the transfer pump and the pump VFD had been affected during their normal operation and required replacement. On September 16, 2020, the liquid end of transfer pump P-100B and the pump VFD were replaced by the System operator (S&S Technologies, Inc.), and the new VFD was programmed by programming consultant Doddridge Controls, Inc. There have been no problems with the operation of the new P-100B transfer pump or VFD.

RESIN VESSEL DRAIN VALVES

Following the resin cleaning event, the drain valves at the base of both resin vessels developed leaks. The T-1100 and T-1200 vessel drain valves were replaced on September 16, 2020. The new valves have not shown any signs of leakage.

2.6 GROUNDWATER MONITORING ACTIVITIES

A total of 21 monitoring wells have been installed to collect groundwater levels and groundwater quality samples at the Site (Figure 6). Details regarding well construction are provided in Table 13. All monitoring wells, along with the co-located piezometers for the recovery wells, were utilized in the groundwater level monitoring program. Groundwater samples were collected from select monitoring wells as part of the monitoring program for the corrective measures.

2.6.1 GROUNDWATER LEVELS

In mid-May and late November 2020, groundwater level measurements were collected from all monitoring wells and recovery well piezometers. The depth to groundwater (to the nearest 0.01 foot) was measured from the reference point on the monitoring well or piezometer casing using an electronic water level meter.

2.6.2 GROUNDWATER SAMPLES

SAMPLING PLAN

In accordance with the Groundwater Monitoring Plan (WSP 2015b), groundwater quality samples were collected from the onsite monitoring wells during the week of May 10, 2020 for the annual sampling event. The selected monitoring wells included 13 shallow (unconfined) zone monitoring wells (MW-01, MW-03, MW-04, MW-05R, MW-09, MW-16, MW-18, MW-20, MW-38R, MW-39, MW-42, MW-43, and MW-44) and 8 deep (confined) zone wells (MW-1D, MW-16D, MW-21D, MW-22D, MW-23D, MW-27D, MW-40D, and MW-41D). Groundwater quality samples were collected the week of November 22, 2020 for the semiannual sampling event. The semiannual event included the same wells as the annual event but excluded 4 monitoring wells located in unaffected areas of the Site. The excluded wells consisted of two in the shallow unconfined zone (MW-03 and MW-44) and two in the deep confined zone (MW-27D and MW-41D). Monitoring well MW-42 had a construction problem (well cap had been removed causing the previously deployed passive sampling device to fall) and MW-16D was inaccessible during the November 2020 field sampling activities. After replacing the well cap and installing a new sampling device, monitoring well MW-42 was sampled on January 6, 2021. Monitoring well MW-16D was sampled on December 8, 2020.

MONITORING WELL SAMPLING PROCEDURE

Groundwater samples were collected from the monitoring wells using HydraSleeve samplers. A single, 2-foot long HydraSleeve sampler was attached to a weighted nylon line and set in each well to collect a sample in the middle of each well screen. The nylon line was secured at the well head to ensure the sampler remained at the selected deployment depth. During the sampling activities, the pre-deployed and equilibrated HydraSleeve sampler was removed from the well, and the collected water transferred to the appropriate containers for laboratory analysis. After sample collection, any remaining water was used to measure field parameters (pH, conductivity, turbidity, and temperature) via a multi-parameter water quality meter. Field parameter data was not obtained if there was insufficient water following sample collection. A new HydraSleeve sampler was then deployed after collecting each sample. The collected monitoring well samples were analyzed for VOCs using EPA SW-846 Test Method 8260D and 1,4-dioxane using modified EPA SW-846 Test Method 8260D SIM by the Pace Analytical Services laboratory in Huntersville, North Carolina. Excess water generated from the monitoring well sampling activities was containerized and processed through the System.

2.7 GROUNDWATER MONITORING RESULTS AND EVALUATION

2.7.1 GROUNDWATER LEVELS

Groundwater level monitoring is conducted to gather data to evaluate the hydraulic response to remedial pumping in both the shallow and deeper zones of the LPA. Current and historical monitoring well and piezometer depth to water measurements and calculated groundwater elevations are presented in Table 14. Water level contour maps depicting the water table and hydraulic head conditions in the sandy deposits in the shallow zone of the LPA and the deeper confined zone of the LPA are provided in Figures 7, 8, and 9 for the May 2020 monitoring event, and Figures 10, 11, and 12 for November 2020. Information on the hydraulic head distribution and gradients along the groundwater surface and lower, sand-dominated portion of the shallow zone are discussed separately below.

The water table contour maps (Figures 7 and 10) indicate a generally northwest groundwater flow direction in the shallow zone of the LPA, with a localized depression in the groundwater surface around well MW-38R. The May 2020 contour map indicates this hydraulic sink extends southward to the vicinity of well MW-5R. The lowering of the groundwater surface in this area is related to groundwater pumping from recovery wells RW-1S and RW-2S immediately to the east. The slight mounding effect around wells MW-04 and MW-09 most likely reflects enhanced recharge to the groundwater system associated with the stormwater management area in the east-central portion of the Site.

The most pronounced drawdown within the shallow zone of the LPA occurred within the predominately sand deposits in the vicinity of the recovery wells. In this area, a well-developed cone of depression exists near RW-2S and extends to the north

toward wells MW-39 and MW-43, and south towards MW-44 (Figures 8 and 11). Based on the spatial head variations, groundwater in the upper portion of the unconfined zone will tend to migrate downward through the clayey deposits in the western portion of the Site and serve as inflow to the shallow recovery well system.

The potentiometric surface contour maps for the deep confined zone of the LPA generated from the May and November 2020 water level data are provided in Figures 9 and 12, respectively. The head distribution indicates the southward movement of groundwater in this portion of the LPA, with the development of an elongated depression in the potentiometric surface along the entire southern property boundary in response to groundwater withdrawals from the deep recovery wells. The eastern-most portion of this hydraulic sink, as depicted by the head contours, indicates greater drawdown in the area around recovery well RW-2D, which is consistent with potentiometric surface maps from previous monitoring rounds. Evaluation of the head distribution indicates drawdown of the potentiometric surface extending south onto the adjoining Williams Scotsman property towards monitoring well MW-24D. Additionally, comparison of the groundwater elevations in monitoring wells MW-01D, MW-21D, and MW-41D indicate an upward component of flow from the lower-most portion of the sand deposits comprising this zone toward the depth interval screened by the recovery wells. Monitoring well MW-41D has a higher groundwater elevation and is screened in the lower-most portion of the deep zone compared to monitoring wells MW-01D and MW-21D. This indicates an upward component of groundwater flow from the lower portion of the confined sand unit to MW-01D and MW-21D, which are located next to recovery wells RW-2D and RW-1D, respectively.

2.7.2 GROUNDWATER QUALITY

OVERVIEW

Groundwater sample collection from the monitoring wells is conducted to monitor the VOC and 1,4-dioxane concentrations in the LPA underlying the Site. The May and November 2020 monitoring well analytical results are presented in Table 15. Historical analytical results of select site-specific constituents are presented in Table 16, and statistical trend evaluations are presented in Table 9. The certified laboratory analytical reports for the monitoring well samples are included in Appendix E.

Concentrations for the primary COCs detected in samples from the shallow and deep monitoring wells are provided in Figures 13 and 14, respectively. Iso-concentration maps for select VOCs and 1,4-dioxane were prepared from the analytical data from the annual (May 2020) monitoring event and are presented in Figures 15 through 17 (shallow zone of the LPA) and Figures 18 and 19 (deep zone of the LPA). The shallow zone iso-concentrations maps were developed using data from monitoring wells screened at depths of less than 45 feet in the western and eastern portions because this is the primary interval for contaminant transport in these areas of the Site. Therefore, data from monitoring wells MW-18, MW-20, and MW-39 were not included in the shallow zone iso-concentration maps based on their well screen depths. In addition to the onsite wells, results from offsite monitoring wells MW-24D, MW-45, and MW-46D are presented on the iso-concentration maps to help provide context with regards to the extent of VOC-affected groundwater. (The results from these offsite wells are described in more detail in the 2020 Offsite Groundwater Monitoring Report submitted to MDE and EPA on May 6, 2021.) The lowest iso-concentration contour values were based on the applicable Cleanup Standards. Although the recovery well data was not directly used to create the iso-concentration contours, these results were used to check and, if deemed appropriate, adjust the contour lines based on the zone of inflow for each recovery well.

SHALLOW ZONE OF LOWER PATAPSCO AQUIFER

As described in Section 2.7.1, groundwater flows in a generally northwestward direction in the shallow zone of the LPA beneath the former Kop-Flex facility. For this portion of the aquifer, the highest concentrations of VOCs (well MW-16) and 1,4-dioxane (well MW-20) were detected in monitoring wells situated hydraulically upgradient of the shallow recovery wells. Additional exceedances of the Cleanup Standards were found in eastern (upgradient) monitoring wells MW-04 (1,1-DCE, 1,1-DCA, and 1,4-dioxane), MW-09 (1,1-DCE and 1,4-dioxane), and MW-20 (1,1-DCE, 1,1-DCA, and 1,2-DCA). Data for the western (downgradient) monitoring wells indicates Site-related contaminants at levels above the Cleanup Standards in samples from wells MW-38R and MW-44 (1,1-DCA and 1,4-dioxane) and MW-43 (1,1-DCE, 1,1-DCA, and 1,4-dioxane).

Overall, 1,1-DCE and 1,4-dioxane concentrations in the groundwater samples have decreased an average of approximately 70% from their historic maximum concentrations, while 1,1-DCA has decreased 58% (Table 9). Mann-Kendall statistical trend evaluations were conducted on the sampling results for 1,1-DCA, 1,1-DCE, and 1,4-dioxane at monitoring wells with equal to or greater than 50% detections and 4 or more sample results. A 95% confidence limit was used for the statistical calculation (Table 9). Most monitoring wells screened in the shallow unconfined portion of the LPA across the Site exhibited

no trends or decreasing trends with regards to these constituents. Monitoring well MW-16, which typically has the highest VOC concentrations, exhibited decreasing trends for both 1,1-DCE and 1,4-dioxane. The exception is well MW-20, which exhibited increasing trends for 1,1-DCA and 1,4-dioxane.

The concentrations of 1,1-DCE, 1,1-DCA, and 1,4-dioxane exhibit similar general distributions within the shallow water-bearing zone, with the respective plumes extending to the west underneath the loading dock area and south building toward the recovery wells. The upgradient portion of the plume extends a short distance onto the Williams-Scotsman property. Historically, concentrations below the Cleanup Standards have been found to the east of the Kop-Flex Site (MW-45), and along the southern (MW-01), and western (MW-03 and MW-42) Site boundaries, thereby largely defining the extent of the affected groundwater.

DEEP CONFINED ZONE OF LOWER PATAPSCO AQUIFER

Groundwater in the deep zone of the LPA flows in a southward direction across the former Kop-Flex property (see Section 2.7.1). Given the general flow paths in this portion of the aquifer, monitoring wells located upgradient of the deep recovery wells - MW-16D and MW-23D - had the highest VOC and 1,4-dioxane concentrations above the Cleanup Standards (Figure 14). However, it should be noted the concentrations of these constituents in samples from MW-24D on the adjoining Williams-Scotsman property had noticeably higher levels than those detected in any of the onsite wells. (The results from this offsite well are described in more detail in the 2020 Offsite Groundwater Monitoring Report submitted on May 6, 2021.)

Additional exceedances above the Cleanup Standards were found in samples from monitoring wells MW-01D for 1,1-DCE, 1,1-DCA, and 1,4-dioxane and MW-21D for 1,1-DCE. Groundwater samples collected from the wells located near the plume boundaries in the southeastern (MW-22D) and southwestern (MW-40D) portions of the Site did not have any contaminants exceeding the Cleanup Standards during the May 2020 sampling event; however, the MW-22D sample during the November 2020 sampling event did have a slight exceedance of the 1,1-DCE level. Monitoring well MW-41D is the deepest well in the confined zone of the LPA onsite and helps define the lower boundary of the VOC plumes onsite. During the May 2020 sampling event, the sample from MW-41D had no detections of chlorinated VOCs or 1,4-dioxane.

Since initiation of remedial pumping, 1,1-DCE and 1,1-DCA concentrations have decreased an average of 74% from their historic maximum concentrations in samples from the deep monitoring wells, and 1,4-dioxane has decreased 73% on average (Table 9). Mann-Kendall statistical trend evaluations were also conducted on 1,1-DCA, 1,1-DCE, and 1,4-dioxane data from wells screened in the deep confined zone of the LPA (Table 9). Most of the monitoring wells were found to have decreasing trends for at least one of these constituents. Monitoring well MW-16D exhibited a decreasing trend for all primary COCs.

Figures 18 and 19 provide the May 2020 iso-concentration maps for 1,1-DCE and 1,4-dioxane in the deep zone of the LPA. The iso-concentration maps show groundwater concentrations above the Cleanup Standards across the entire eastern portion of the Site, with the highest concentrations extending from the north warehouse area downgradient towards the south Site boundary and eventually offsite. The width of the COC-affected groundwater is defined by the sample results below their respective standards at well MW-22D to the east and wells MW-27D and MW-40D to the west.

2.8 ASSESSMENT OF CLEANUP PROGRESS

Groundwater in the shallow zone of the LPA flows in a generally northwestward direction in the onsite area. Since the start-up of the hydraulic containment system in March 2017, the concentrations of 1,1-DCA, 1,1-DCE, and 1,4-dioxane indicate that the shallow recovery wells are capturing the contaminant plume within the shallow (unconfined) zone of the LPA downgradient of the source areas. The effective containment of the plume is also indicated by the hydraulic influence in the western portion of the Site and groundwater quality results at or below the Cleanup Standards in the downgradient wells. Overall, the groundwater beneath the south warehouse still contains 1,1-DCE, 1,1-DCA, and 1,4-dioxane concentrations above their respective Cleanup Standards, although the concentrations have decreased for these constituents since the initiation of remedial pumping. The following changes in COC concentrations at monitoring well MW-16 indicate this trend in the groundwater quality:

- 1,1-DCE - decrease from 26,200 µg/L (December 2016) to 1,130 µg/L (November 2020);
- 1,1-DCA - decrease from 6,420 µg/L (December 2016) to 1,560 µg/L (November 2020); and
- 1,4-dioxane - decrease from 1,450 µg/L (December 2016) to 84.2 µg/L (November 2020)

The exceptions include monitoring wells MW-20, MW-38R, and MW-44, where concentrations have increased for certain COCs since the initiation of remedial pumping. The increase of COC concentrations at these wells is most likely related to facilitated transport of dissolved mass in response to pumping from the recovery wells. The VOCs present in these wells are captured by the hydraulic containment system. The levels of contaminants will be closely monitored in these areas of the Site to ensure the continued System effectiveness.

For the deep zone of the LPA, groundwater flows in a southward direction across the former Kop-Flex property. The groundwater inflow area for the deep recovery wells appears to encompass the inferred width of the VOC plume in the deep (confined) zone of the LPA in the southern portion of the Site. This determination is based on the flow paths in response to the hydraulic gradients created during pumping. Overall, the groundwater beneath the eastern portion of the Site contains 1,1-DCE and 1,4-dioxane concentrations above their respective Cleanup Standards, although the concentrations have decreased for these constituents since the initiation of remedial pumping. The COC concentrations at monitoring well MW-16D indicate this trend, where between December 2016 (baseline sampling event) and December 2020, 1,1-DCE decreased from 254 µg/L to 127 µg/L and 1,4-dioxane decreased from 202 µg/L to 105 µg/L. While concentrations of site contaminants still exceed the Cleanup Standards in some wells, the data indicates that remedial pumping in both the shallow and deep zones of the LPA are removing contaminant mass from the aquifer, thereby making progress toward actively improving groundwater quality of the aquifer.

3 CONCLUSIONS

The groundwater monitoring data indicate that the Site is progressing towards attainment of the Response Action Objectives (RAOs) and conditions for issuance of a Certificate of Completion for the groundwater response action, as specified in Section 16.2 of the October 2015 RAP. Groundwater pumping at the recovery wells is achieving effective onsite capture of the plumes in the impacted portions of the aquifer system, thereby preventing further offsite migration of Site-related contaminants. Based on evaluation of the groundwater monitoring data, the hydraulic containment system is functioning as designed and in accordance with the engineering design requirements. Given that concentrations of VOCs and 1,4-dioxane remain above the Cleanup Standards in the onsite area, the continued operation of the System is deemed necessary during 2021.

Analysis of treated effluent samples indicate the System is completely removing VOCs and a minimum of 95.8% of the 1,4-dioxane from the extracted groundwater. As in 2018 and 2019, there were no exceedances of the effluent limits specified in the NPDES Permit during the 2020 operational period. There was a single exceedance of the 1,4-dioxane Site cleanup goal, which was believed to represent a short-term anomaly most likely caused by a brief “slug” of water with relatively high contaminant concentrations entering the System. Samples of the treated water will continue to be collected and analyzed pursuant to the monitoring requirements specified in the Permit.

During the spring of 2021, WSP will conduct pilot testing of the ion exchange treatment technology to remove organic carbon constituents from extracted groundwater prior to treatment by the specialty resin. Pending evaluation of the results of the small-scale pilot test, full-scale System pre-treatment may be implemented to prevent fouling of the specialty resin and maintain the System’s removal efficiency for 1,4-dioxane and other Site contaminants.

During 2021, groundwater monitoring will continue to be performed semi-annually to further assess the hydraulic response to remedial pumping and changes in COC concentrations in the impacted aquifer. The data collection activities will be conducted in accordance with the monitoring program specified in the 2015 Groundwater Monitoring Plan (WSP 2015b).

REFERENCES

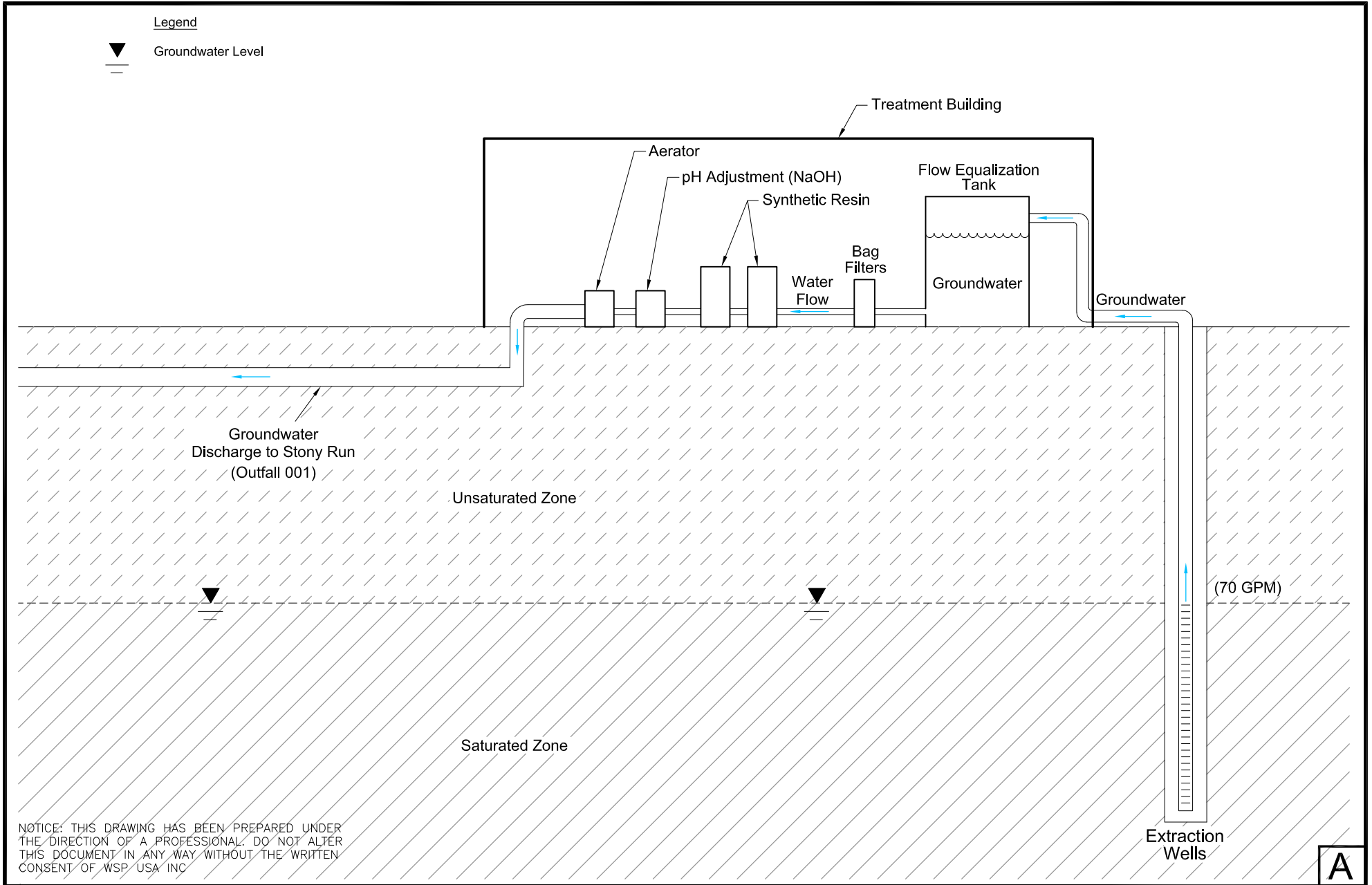
- WSP. 2015a. Response Action Plan Revision 2.0. October 2.
- WSP. 2015b. Groundwater Monitoring Plan Revision 1.0. September 17.
- WSP. 2018. Operation, Maintenance & Monitoring Manual Revision 3.0. May 24.

ACRONYMS

µg/L	micrograms per liter
COC	constituent of concern
DCA	dichloroethane
DCE	dichloroethene
DOC	dissolved organic carbon
DRO	diesel range organics
ECT2	Emerging Compound Treatment Technologies
EPA	United States Environmental Protection Agency
GAC	granular activated carbon
GPM	gallons per minute
HEM	hexane extractable material
HMI	human-machine interface
lbs	pounds
LPA	Lower Patapsco Aquifer
MDE	Maryland Department of the Environment
mg/L	milligrams per liter
NOM	natural organic matter
NPDES	National Pollutant Discharge Elimination System
OM&M	operations, maintenance, and monitoring
PCE	tetrachloroethene
RAO	Response Action Objective
RAP	Response Action Plan
RTI	Recirculation Technologies, LLC
SIM	Selected Ion Monitoring
SU	standard unit
TCA	trichloroethane
TCE	trichloroethene
TOC	total organic carbon
VFD	variable frequency drive
VOC	volatile organic compound

FIGURES





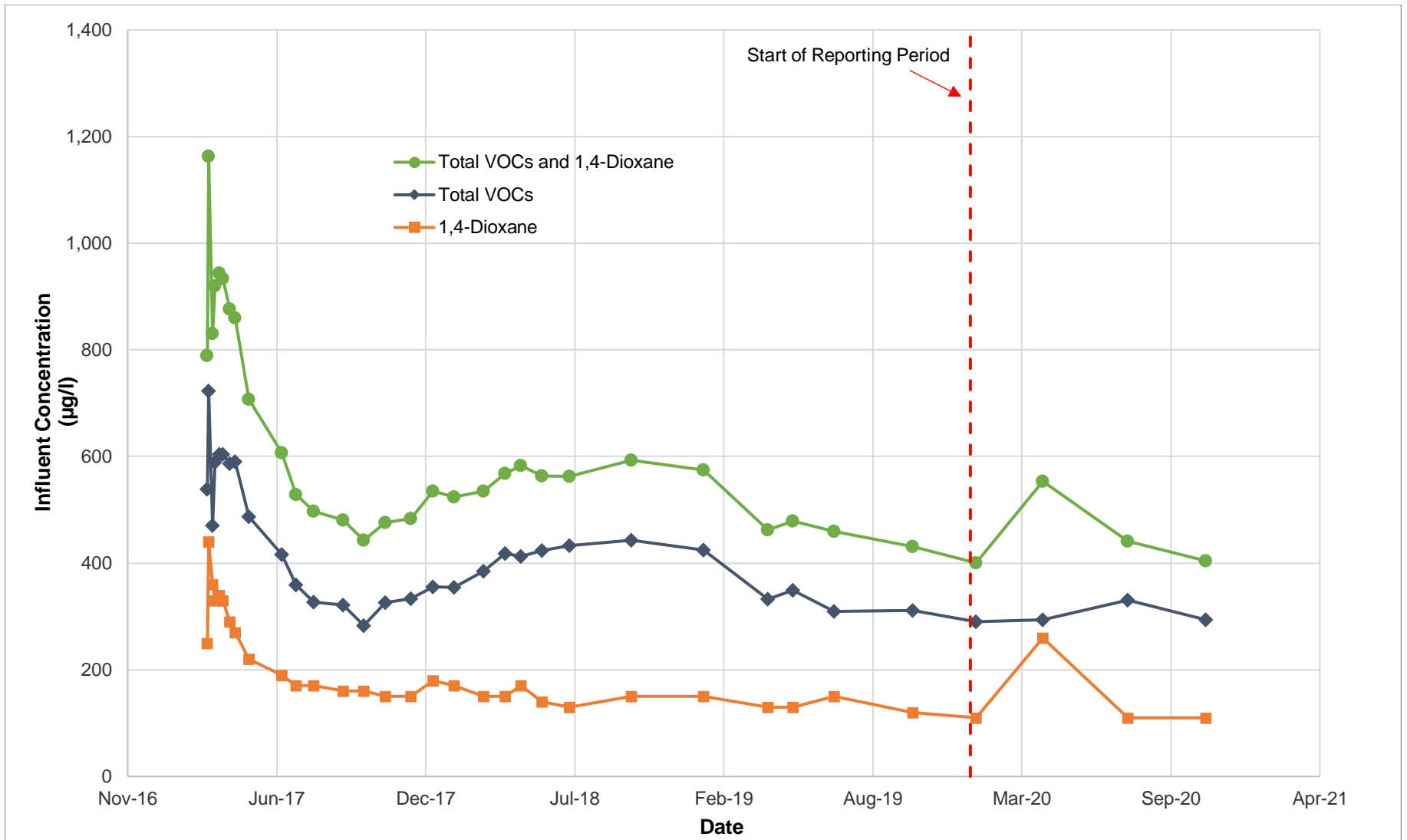
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Figure 1
 HYDRAULIC CONTAINMENT
 SYSTEM SCHEMATIC

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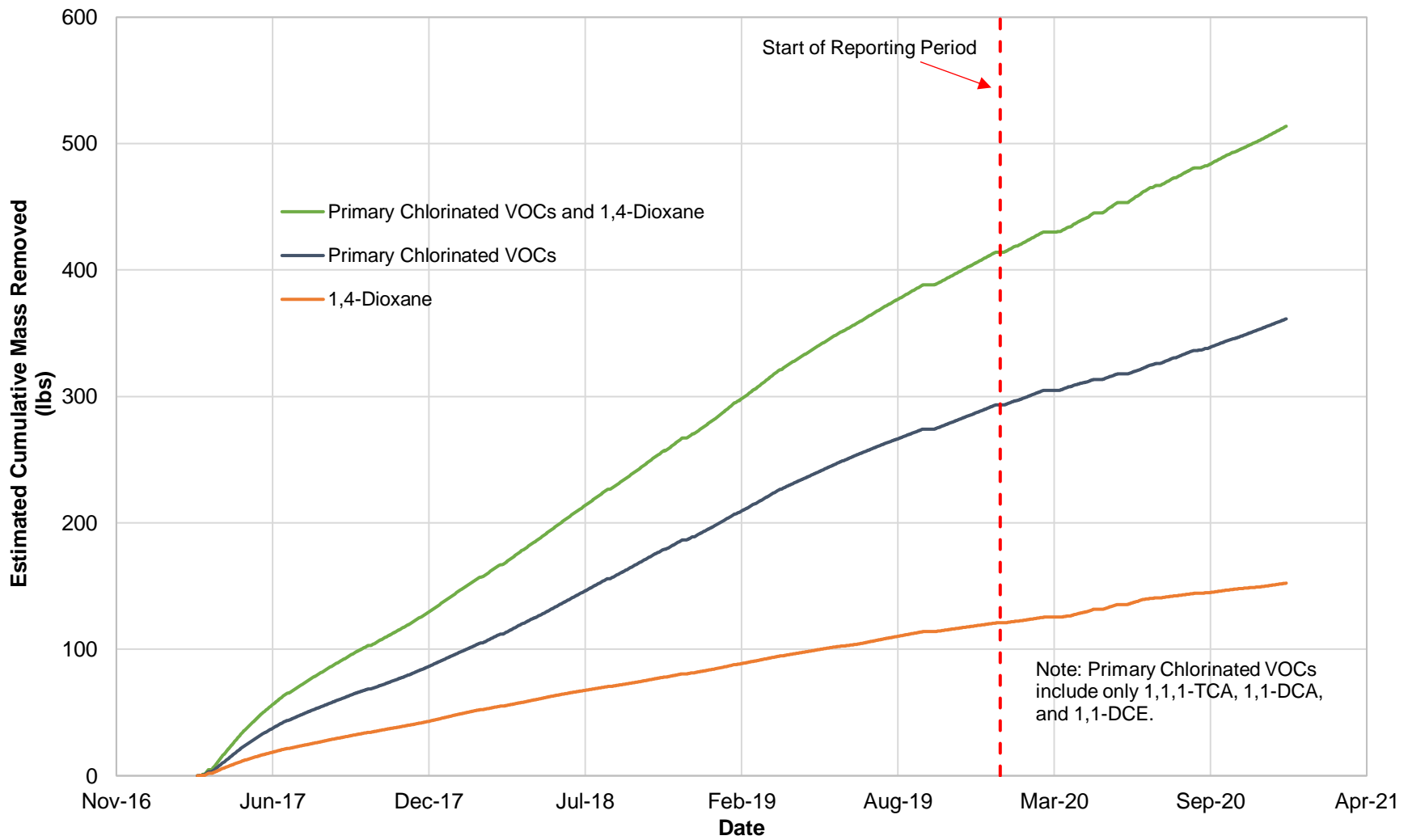
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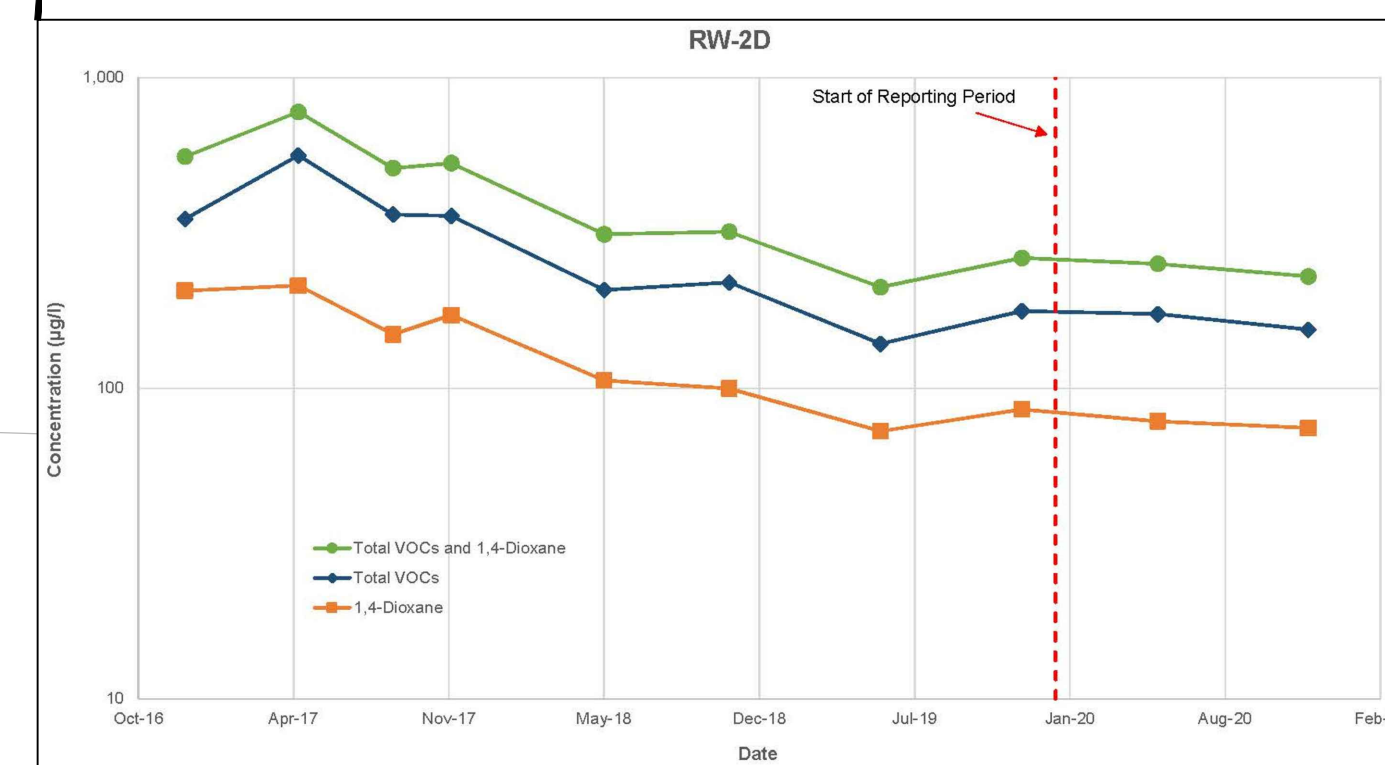
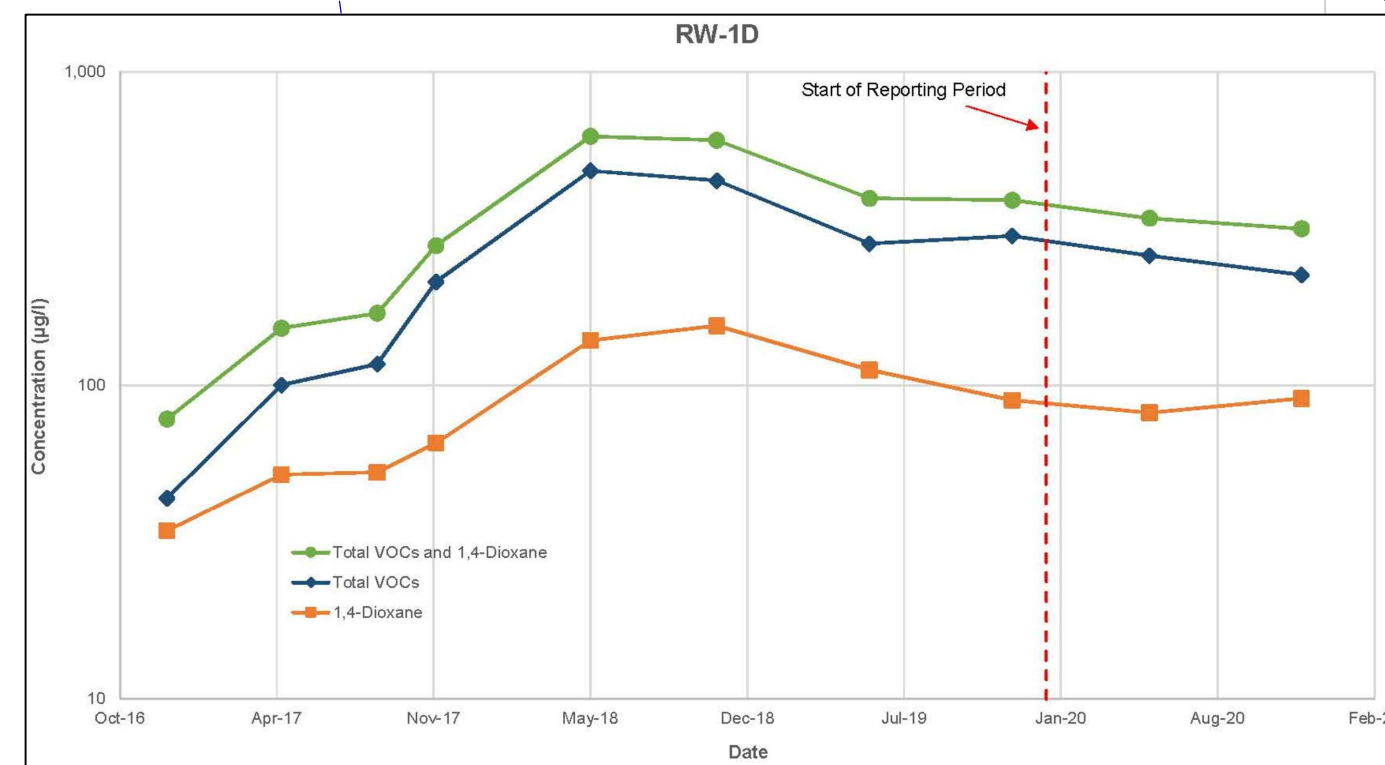
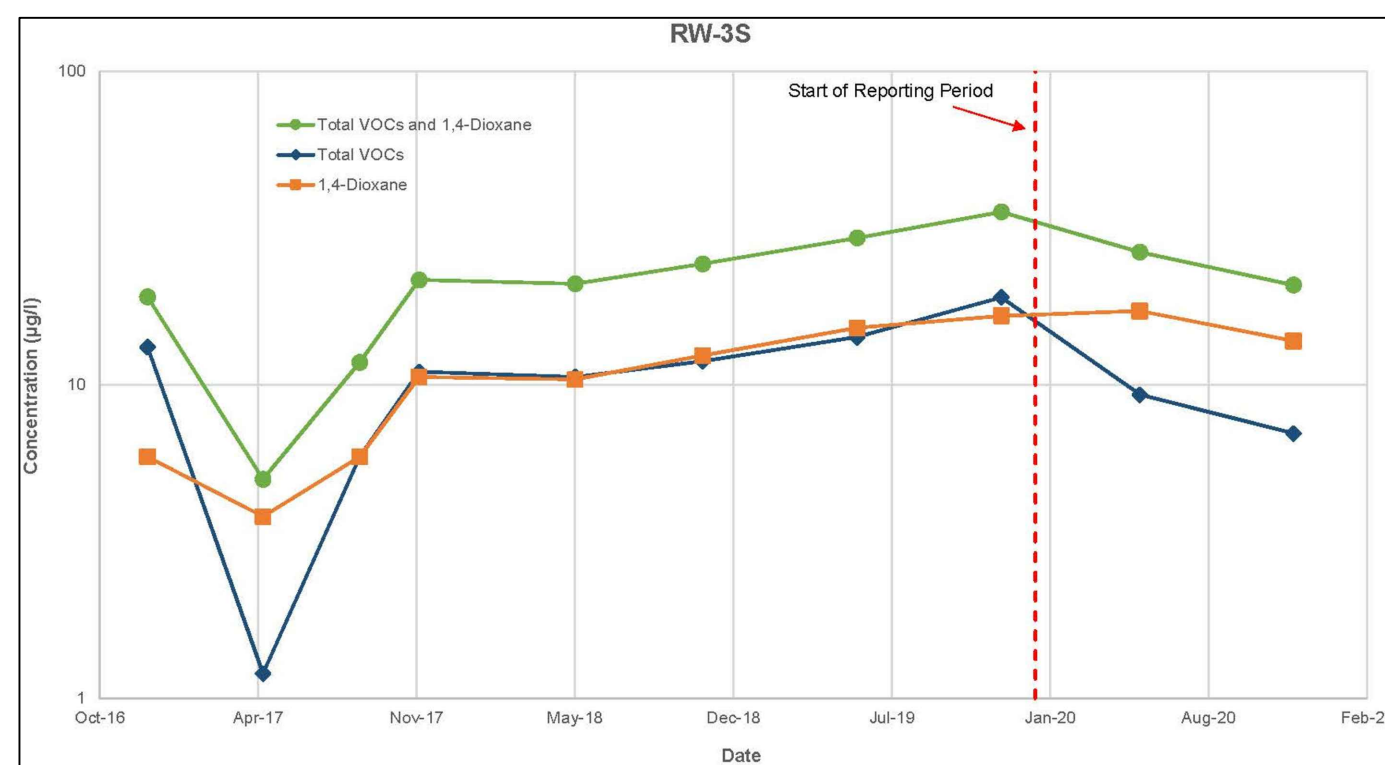
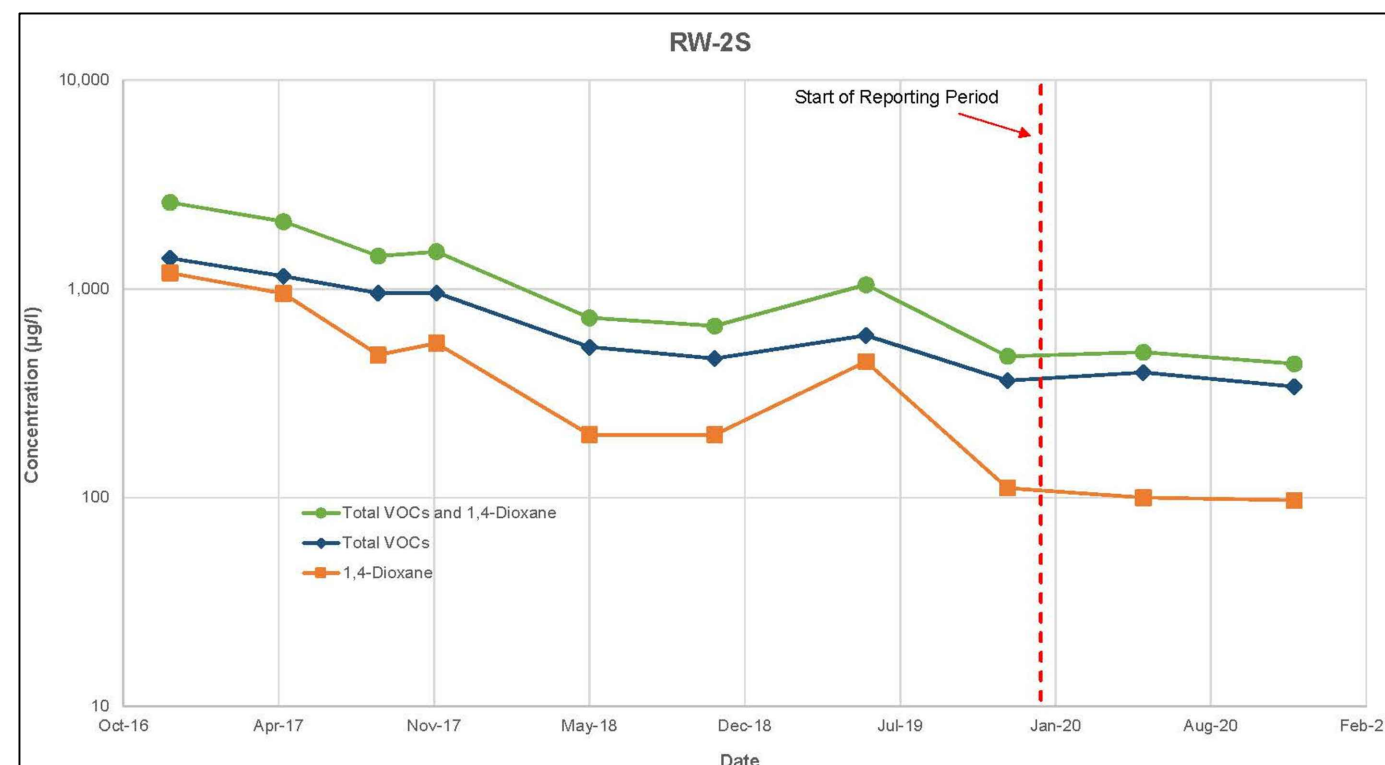
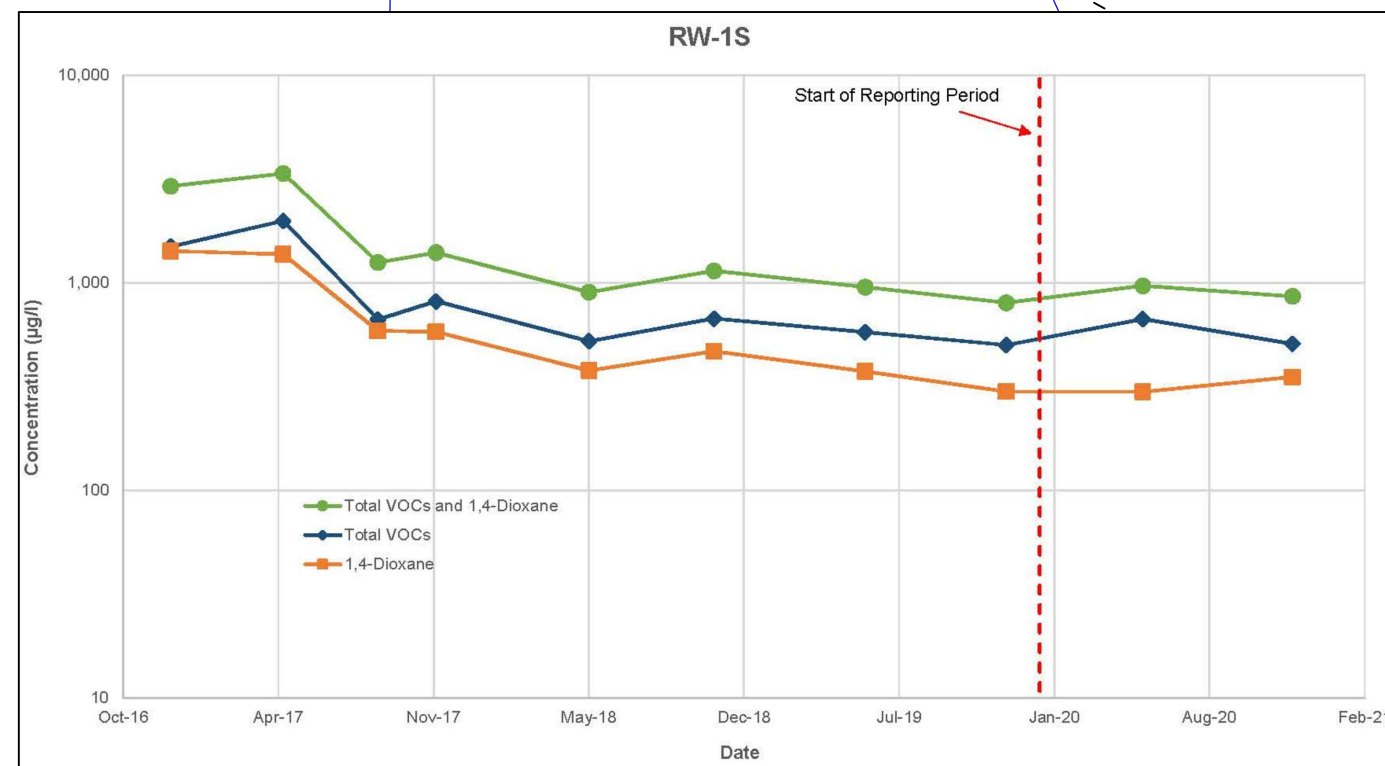
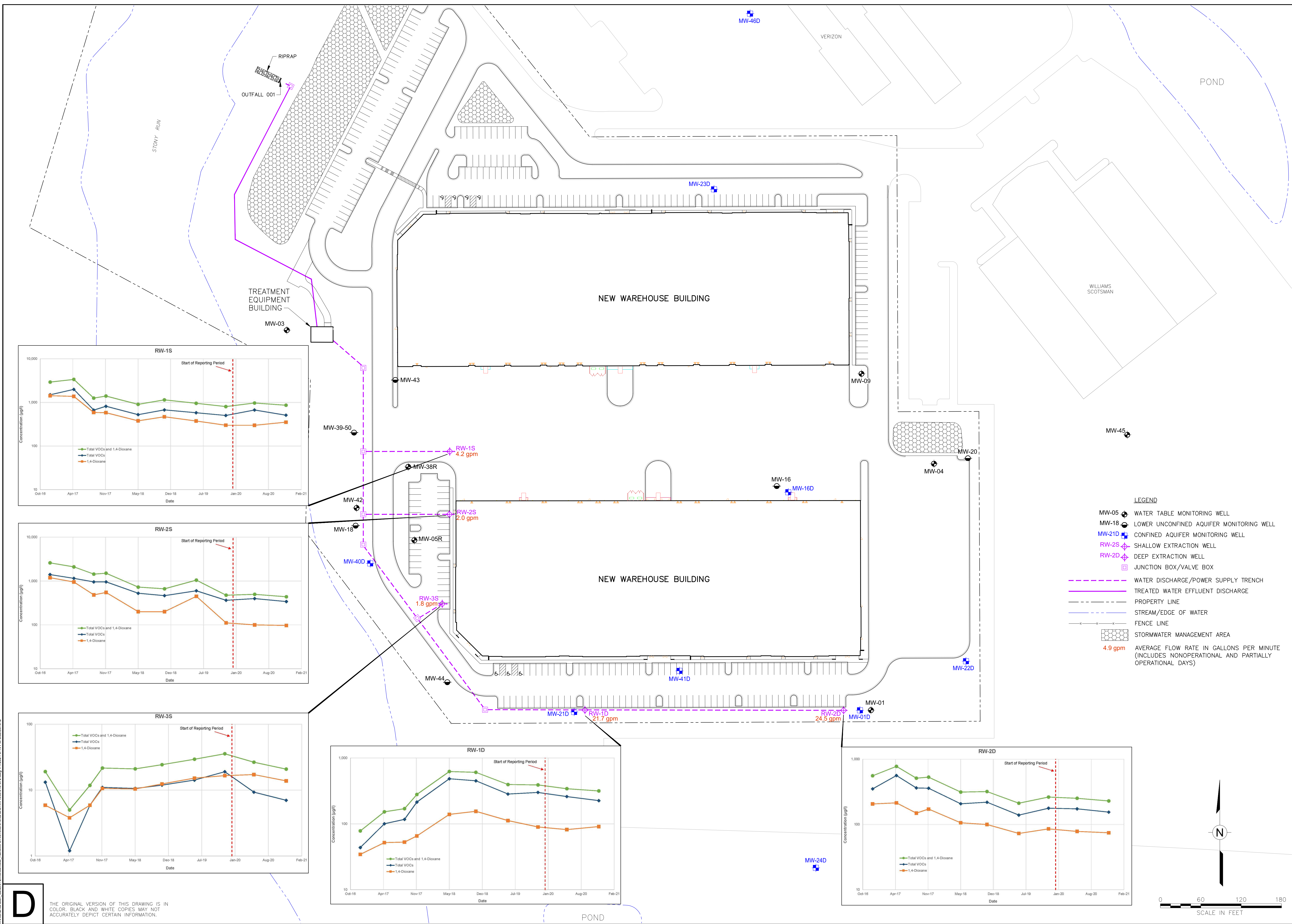
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Figure 2
Historical Influent Concentrations
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Figure 3
Cumulative Mass Removal
Former Kop-Flex Facility Site
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MASS RECOVERY PER WELL

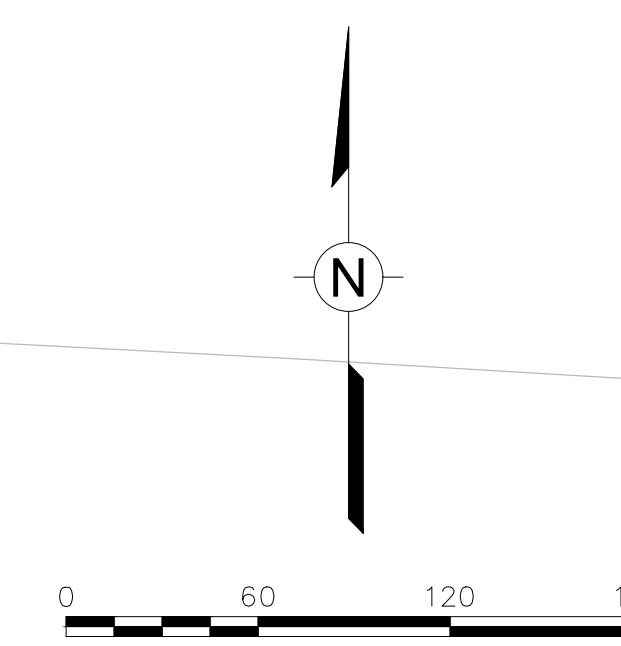
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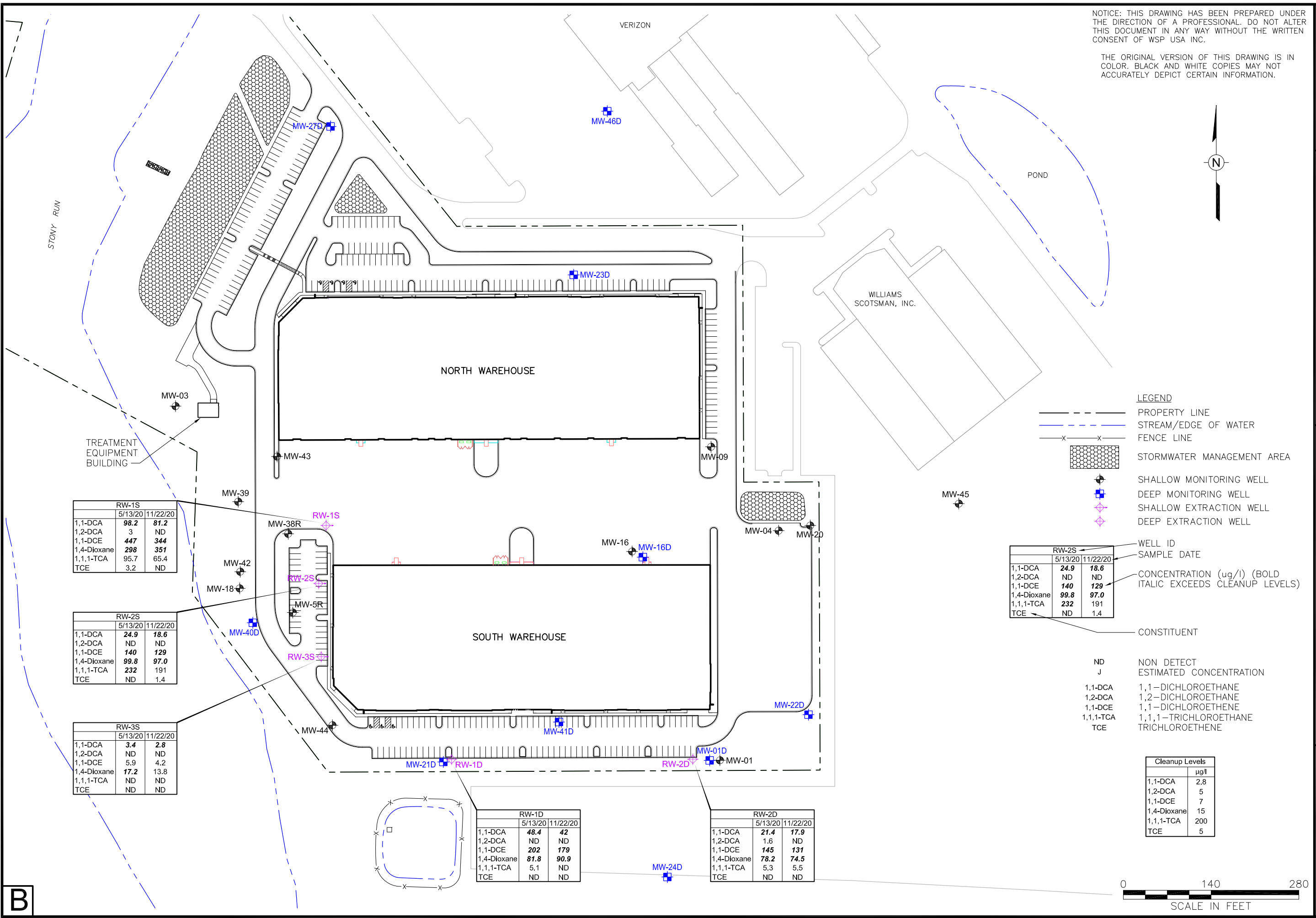
FIGURE 4
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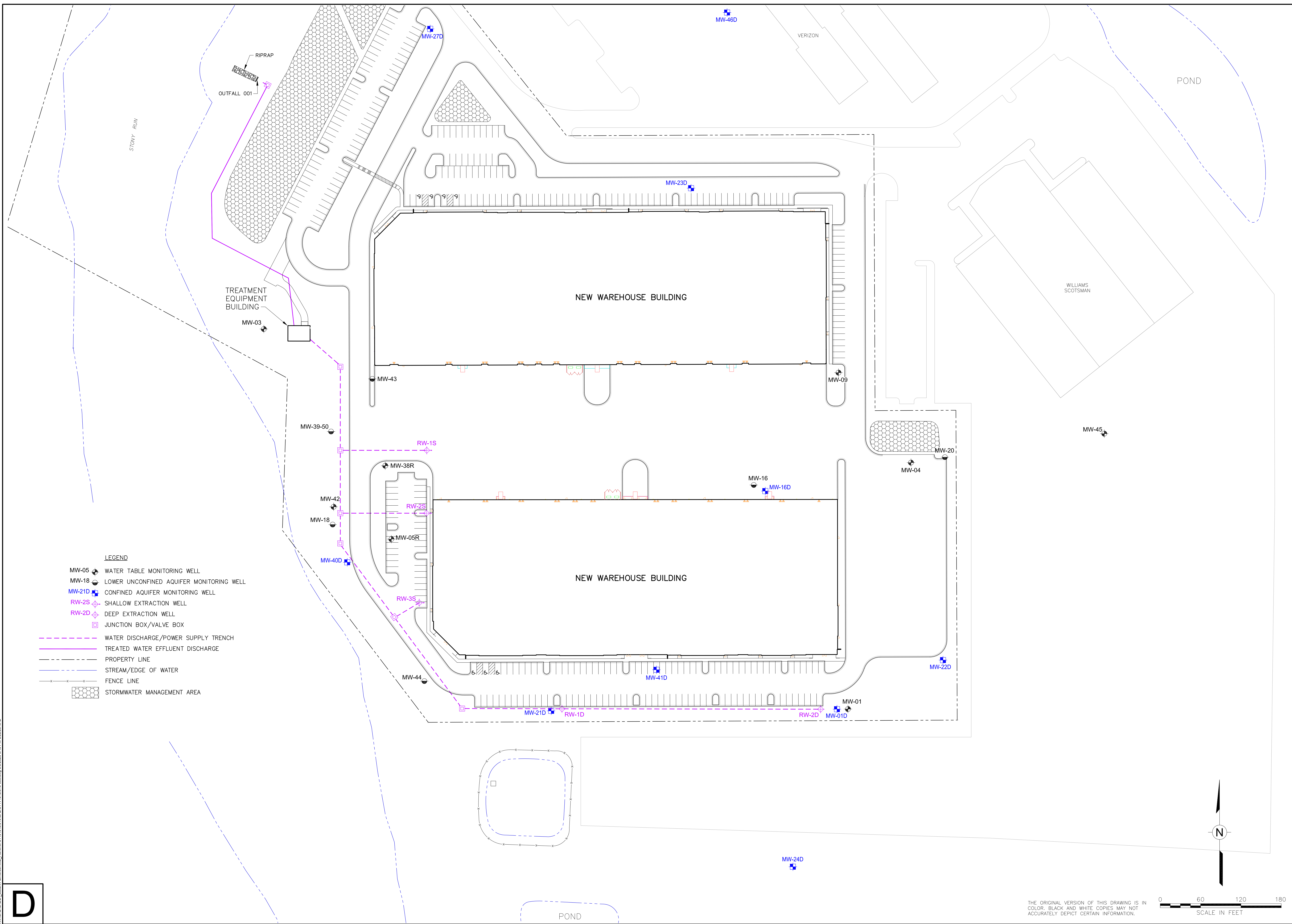
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FIGURE 5
GROUNDWATER RECOVERY WELL RESULTS
(2020)



- LEGEND**
- MW-05 WATER TABLE MONITORING WELL
 - MW-18 LOWER UNCONFINED AQUIFER MONITORING WELL
 - MW-21D CONFINED AQUIFER MONITORING WELL
 - RW-2S SHALLOW EXTRACTION WELL
 - RW-2D DEEP EXTRACTION WELL
 - JUNCTION BOX/VALVE BOX
 - WATER DISCHARGE/POWER SUPPLY TRENCH
 - TREATED WATER EFFLUENT DISCHARGE
 - PROPERTY LINE
 - STREAM/EDGE OF WATER
 - FENCE LINE
 - STORMWATER MANAGEMENT AREA

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HYDRAULIC CONTAINMENT SYSTEM AND MONITORING WELL LOCATIONS

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FIGURE 6

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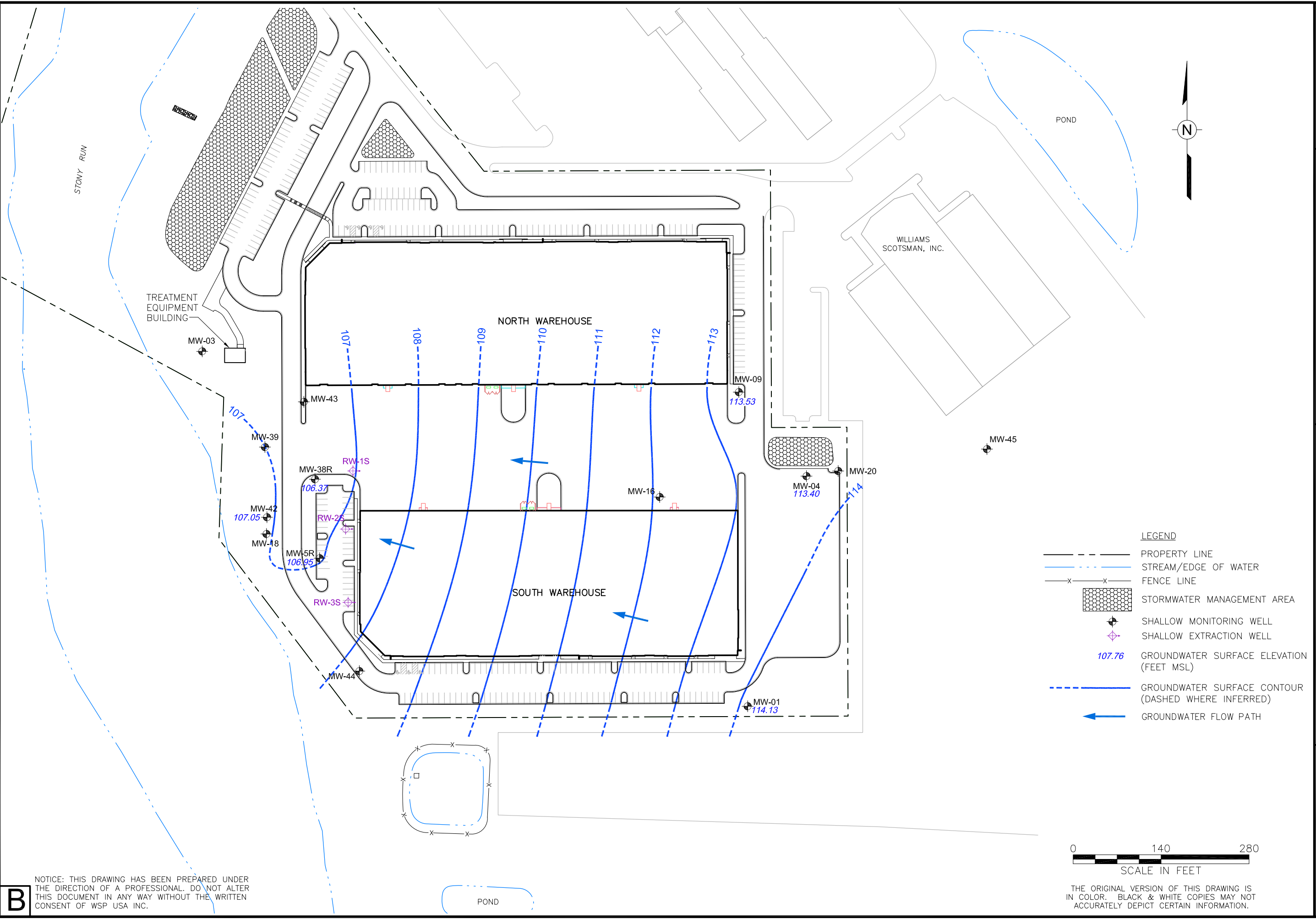
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FIGURE 7
 WATER TABLE CONTOUR MAP
 (MAY 2020)

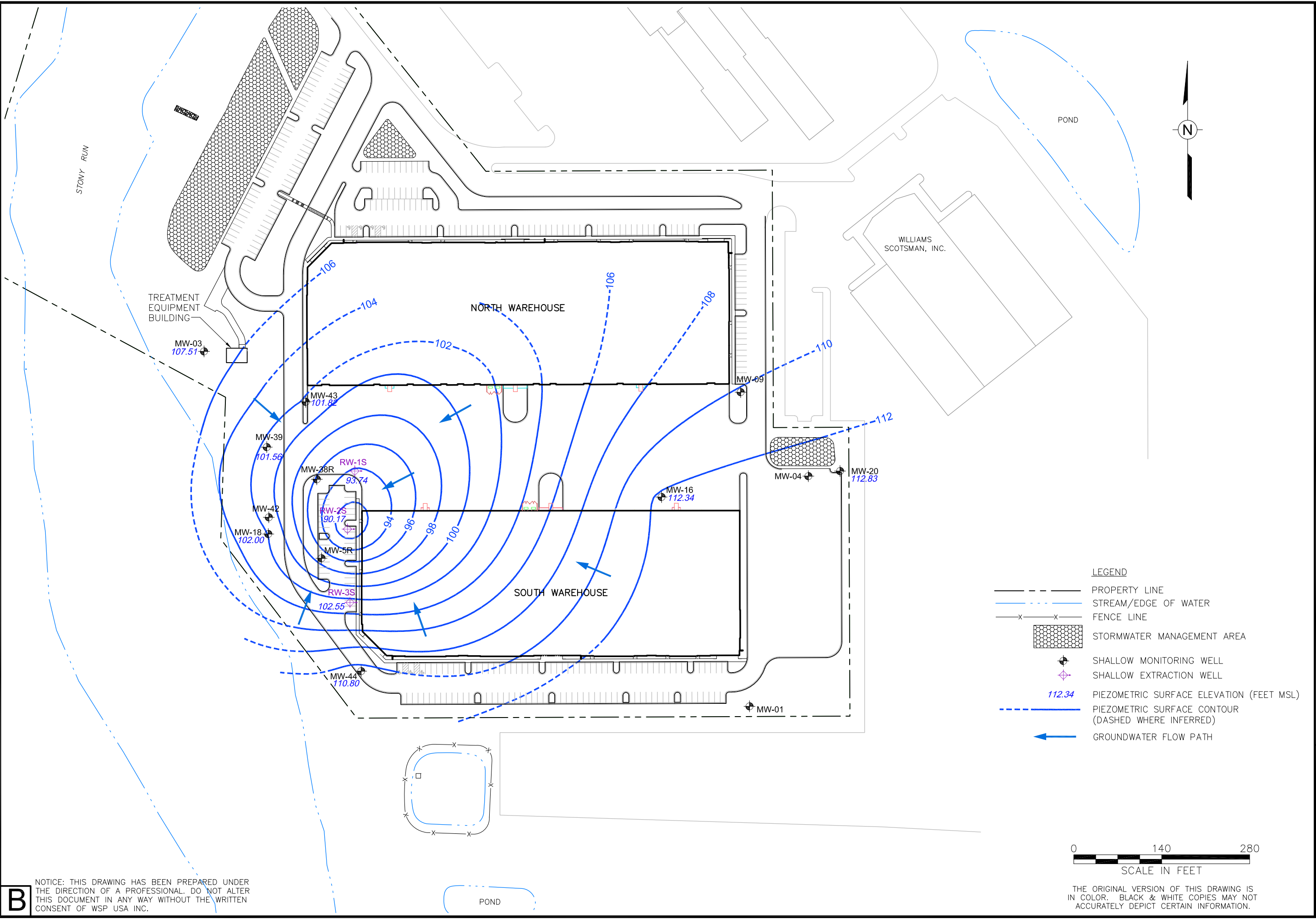
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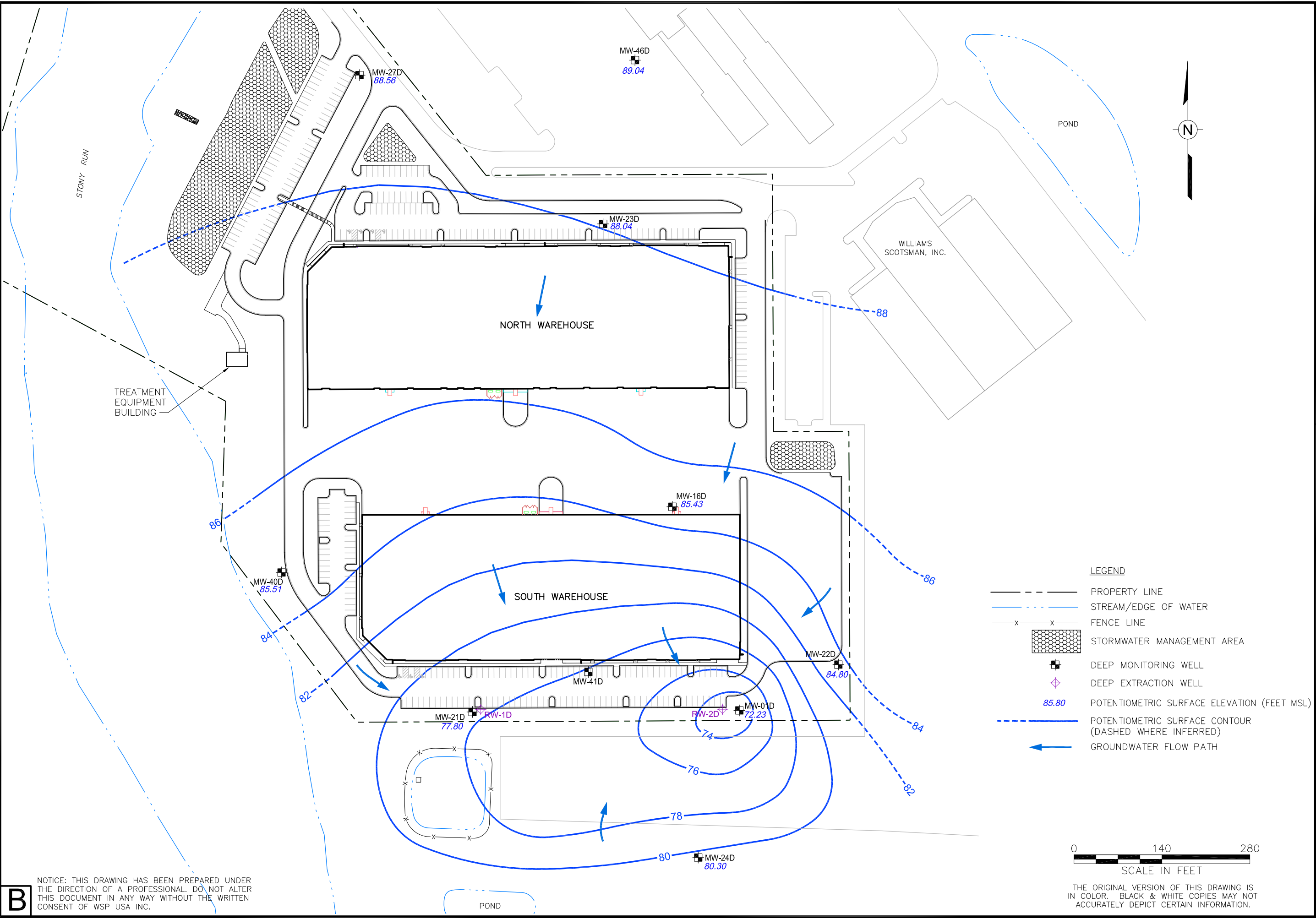
FIGURE 8
 PIEZOMETRIC SURFACE CONTOUR MAP FOR THE LOWER PORTION OF THE SHALLOW ZONE OF THE LOWER PATASPSCO AQUIFER (MAY 2020)

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- LEGEND**
- PROPERTY LINE
 - STREAM/EDGE OF WATER
 - x-x- FENCE LINE
 - [Hatched Box] STORMWATER MANAGEMENT AREA
 - DEEP MONITORING WELL
 - ◆ DEEP EXTRACTION WELL
 - 85.80 POTENTIOMETRIC SURFACE ELEVATION (FEET MSL)
 - - - POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
 - GROUNDWATER FLOW PATH



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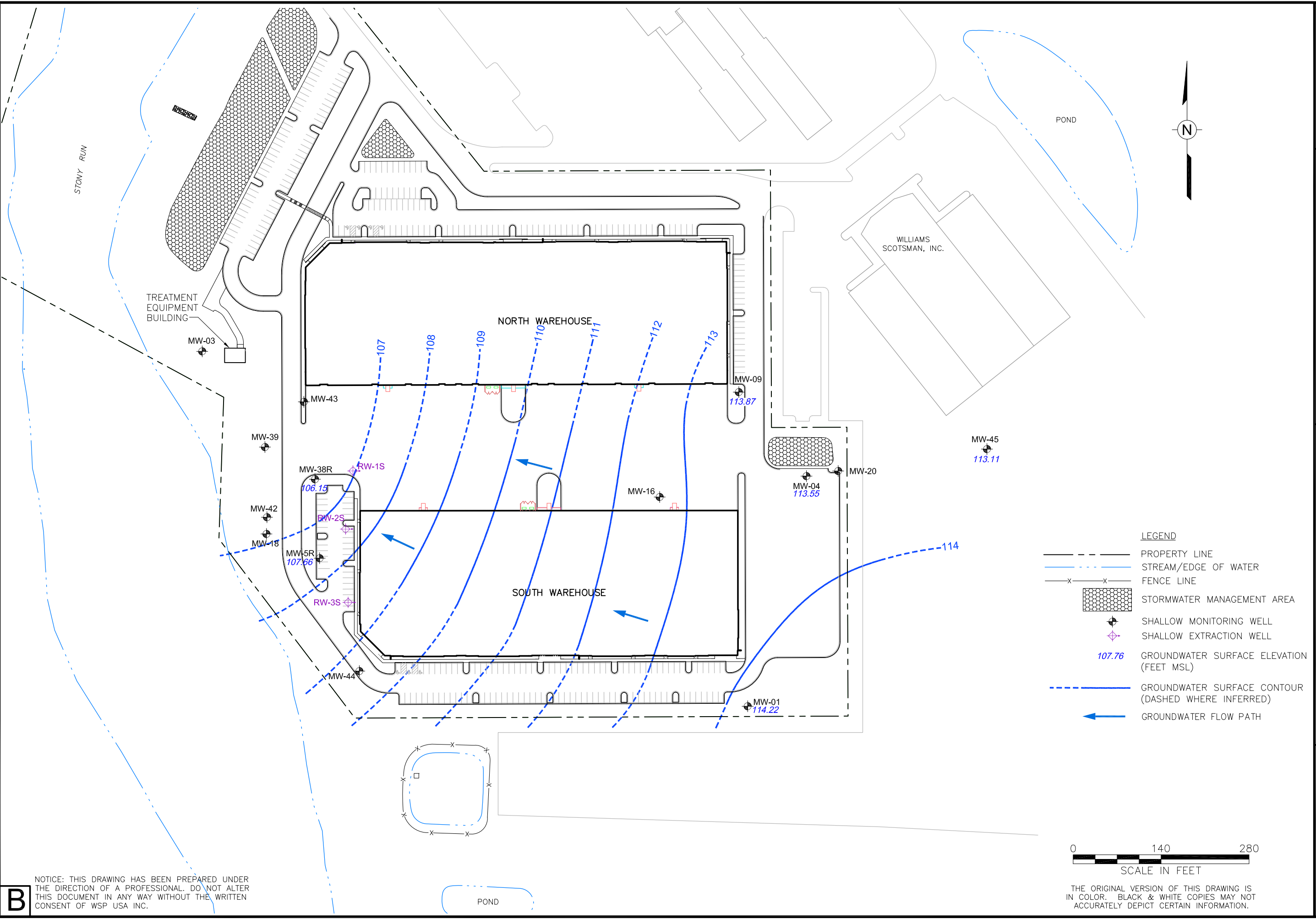
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FIGURE 9
 POTENTIOMETRIC SURFACE CONTOUR MAP
 FOR THE DEEPER PORTION OF THE
 LOWER PATAPSCO AQUIFER (MAY 2020)

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FIGURE 10
 WATER TABLE CONTOUR MAP
 (NOVEMBER 2020)

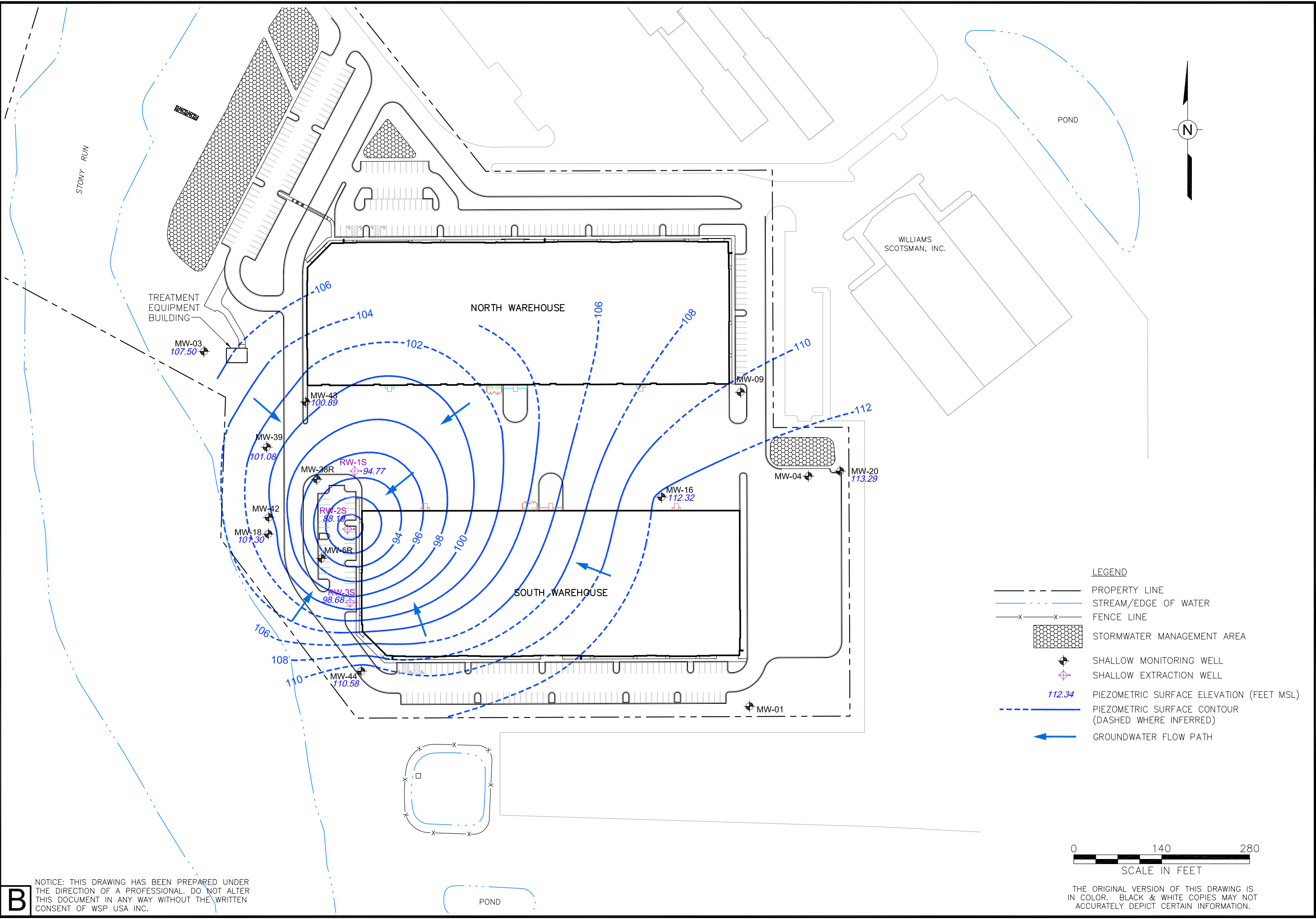
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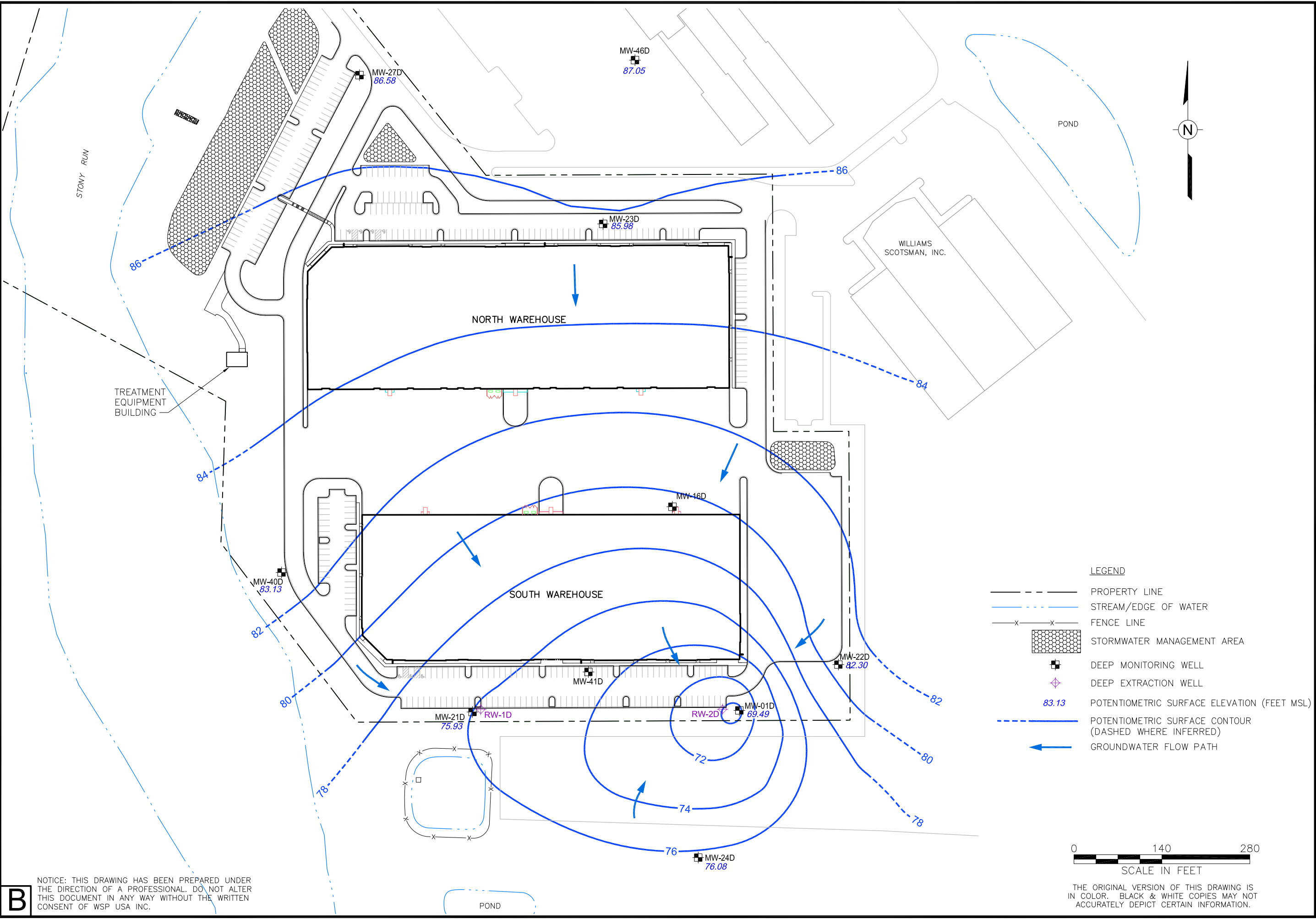
FIGURE 11
 PIEZOMETRIC SURFACE CONTOUR MAP FOR THE LOWER PORTION OF THE SHALLOW ZONE OF THE LOWER PATASPCO AQUIFER (NOVEMBER 2020)

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FIGURE 12
 POTENTIOMETRIC SURFACE CONTOUR MAP
 FOR THE DEEPER PORTION OF THE
 LOWER PATAPSCO AQUIFER (NOVEMBER 2020)

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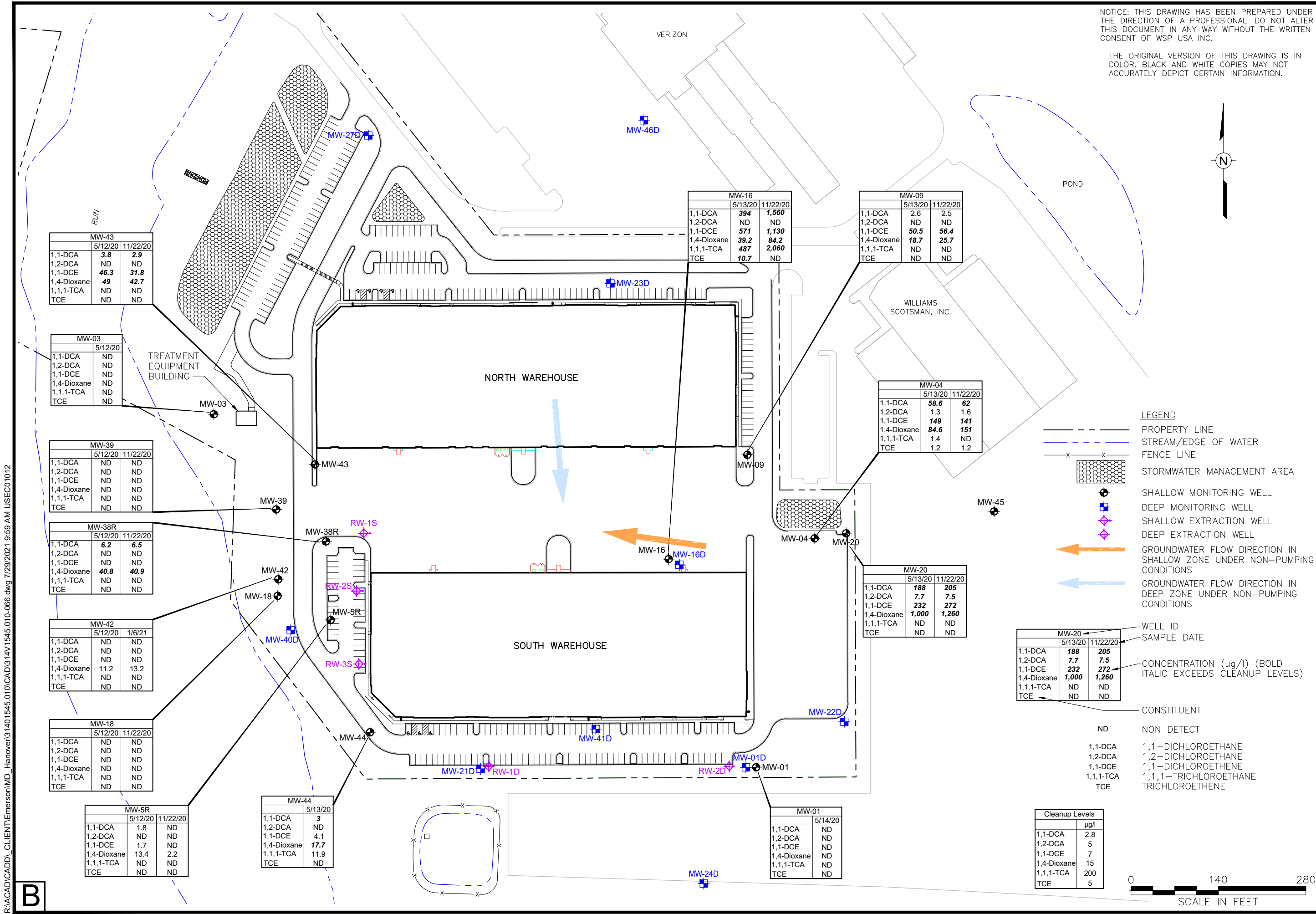
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FIGURE 13
 SAMPLING RESULTS FOR THE MONITORING WELLS
 SCREENED IN THE SHALLOW UNCONFINED PORTION
 OF THE LOWER PATAPSCO AQUIFER (2020)

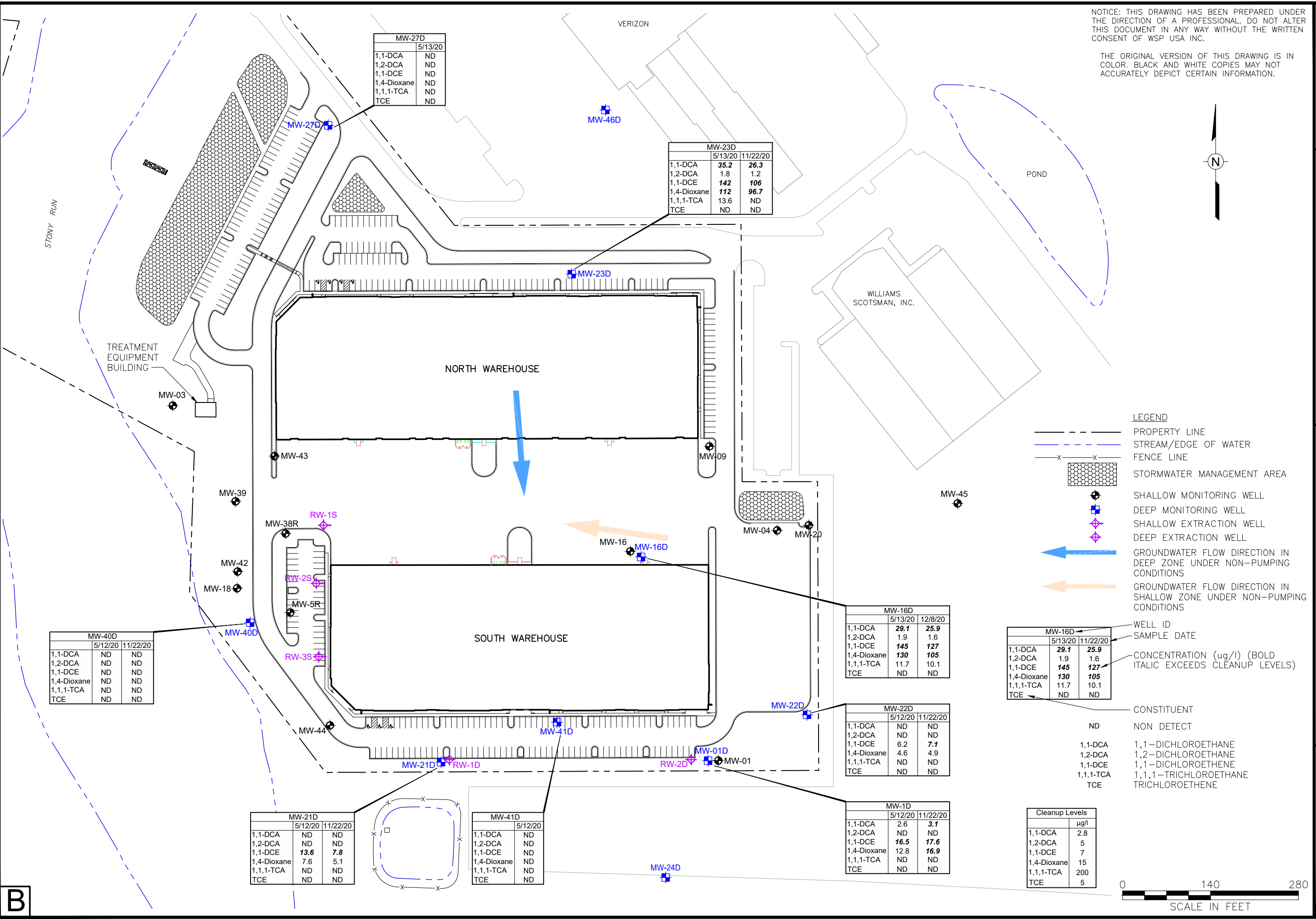
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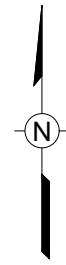
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LEGEND

- PROPERTY LINE
- - - - - STREAM/EDGE OF WATER
- x - x - FENCE LINE
- [Hatched Area] STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- ◇ SHALLOW EXTRACTION WELL
- ◆ DEEP EXTRACTION WELL
- (Blue) GROUNDWATER FLOW DIRECTION IN DEEP ZONE UNDER NON-PUMPING CONDITIONS
- (Orange) GROUNDWATER FLOW DIRECTION IN SHALLOW ZONE UNDER NON-PUMPING CONDITIONS

WELL ID
SAMPLE DATE

	5/13/20	11/22/20
1,1-DCA	29.1	25.9
1,2-DCA	1.9	1.6
1,1-DCE	145	127
1,4-Dioxane	130	105
1,1,1-TCA	11.7	10.1
TCE	ND	ND

CONCENTRATION (ug/l) (BOLD ITALIC EXCEEDS CLEANUP LEVELS)

- ND NON DETECT
- 1,1-DCA 1,1-DICHLOROETHANE
- 1,2-DCA 1,2-DICHLOROETHANE
- 1,1-DCE 1,1-DICHLOROETHENE
- 1,1,1-TCA 1,1,1-TRICHLOROETHANE
- TCE TRICHLOROETHENE

Cleanup Levels	µg/l
1,1-DCA	2.8
1,2-DCA	5
1,1-DCE	7
1,4-Dioxane	15
1,1,1-TCA	200
TCE	5



MW-27D		
	5/13/20	
1,1-DCA	ND	
1,2-DCA	ND	
1,1-DCE	ND	
1,4-Dioxane	ND	
1,1,1-TCA	ND	
TCE	ND	

MW-23D		
	5/13/20	11/22/20
1,1-DCA	35.2	26.3
1,2-DCA	1.8	1.2
1,1-DCE	142	106
1,4-Dioxane	112	96.7
1,1,1-TCA	13.6	ND
TCE	ND	ND

MW-40D		
	5/12/20	11/22/20
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	ND	ND
1,4-Dioxane	ND	ND
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-16D		
	5/13/20	12/8/20
1,1-DCA	29.1	25.9
1,2-DCA	1.9	1.6
1,1-DCE	145	127
1,4-Dioxane	130	105
1,1,1-TCA	11.7	10.1
TCE	ND	ND

MW-22D		
	5/12/20	11/22/20
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	6.2	7.1
1,4-Dioxane	4.6	4.9
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-21D		
	5/12/20	11/22/20
1,1-DCA	ND	ND
1,2-DCA	ND	ND
1,1-DCE	13.6	7.8
1,4-Dioxane	7.6	5.1
1,1,1-TCA	ND	ND
TCE	ND	ND

MW-41D	
	5/12/20
1,1-DCA	ND
1,2-DCA	ND
1,1-DCE	ND
1,4-Dioxane	ND
1,1,1-TCA	ND
TCE	ND

MW-1D		
	5/12/20	11/22/20
1,1-DCA	2.6	3.1
1,2-DCA	ND	ND
1,1-DCE	16.5	17.6
1,4-Dioxane	12.8	16.9
1,1,1-TCA	ND	ND
TCE	ND	ND

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FIGURE 14

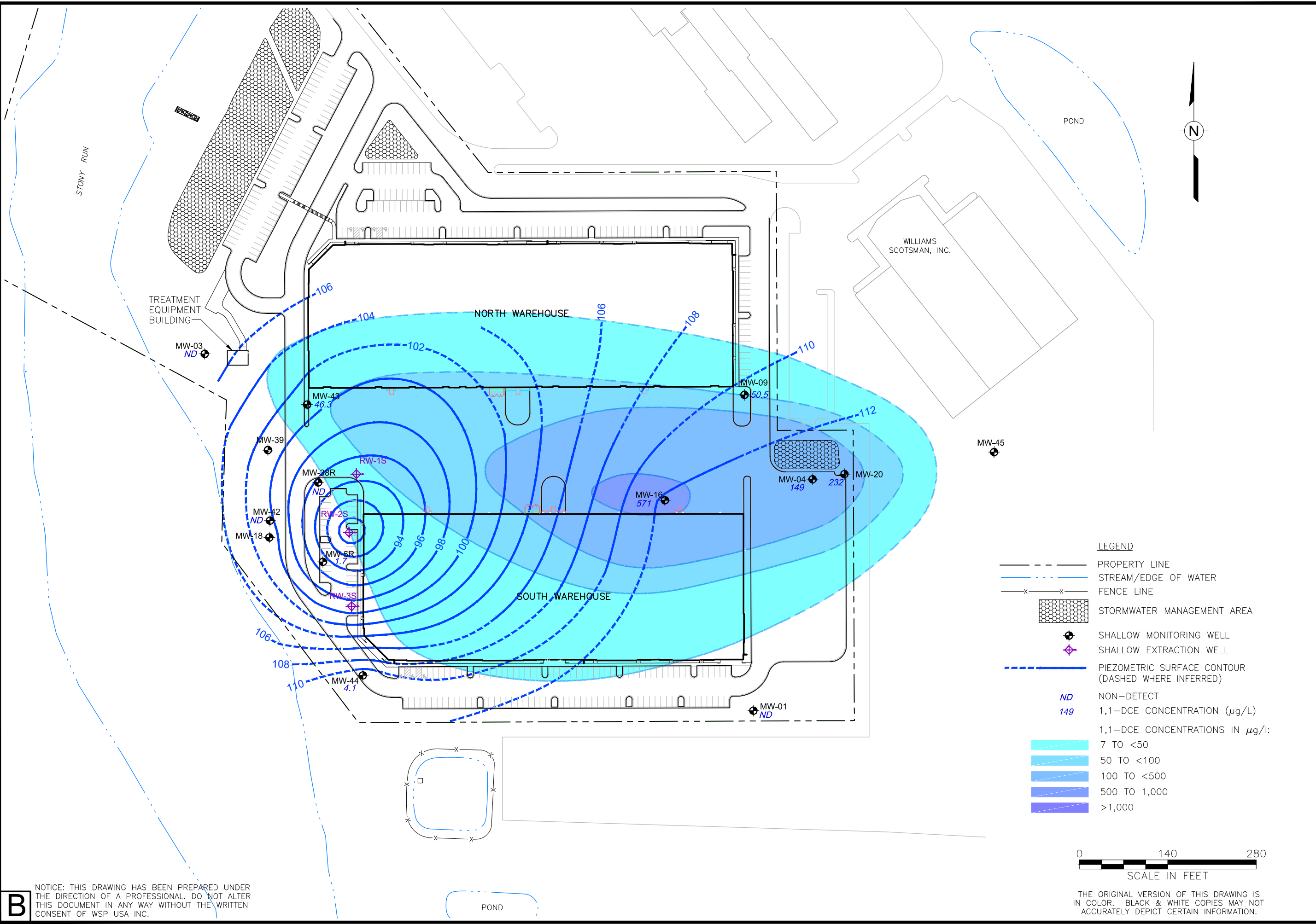
SAMPLING RESULTS FOR THE MONITORING WELLS
SCREENED IN THE DEEPER CONFINED PORTION
OF THE LOWER PATAPSCO AQUIFER (2020)

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LEGEND

- PROPERTY LINE
- STREAM/EDGE OF WATER
- x-x- FENCE LINE
- [Hatched Box] STORMWATER MANAGEMENT AREA
- SHALLOW MONITORING WELL
- ◆ SHALLOW EXTRACTION WELL
- - - - - PIEZOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED)
- ND NON-DETECT
- 149 1,1-DCE CONCENTRATION ($\mu\text{g/L}$)
- 1,1-DCE CONCENTRATIONS IN $\mu\text{g/L}$:
- [Light Blue Box] 7 TO <50
- [Medium Light Blue Box] 50 TO <100
- [Medium Blue Box] 100 TO <500
- [Dark Blue Box] 500 TO 1,000
- [Darkest Blue Box] >1,000

0 140 280
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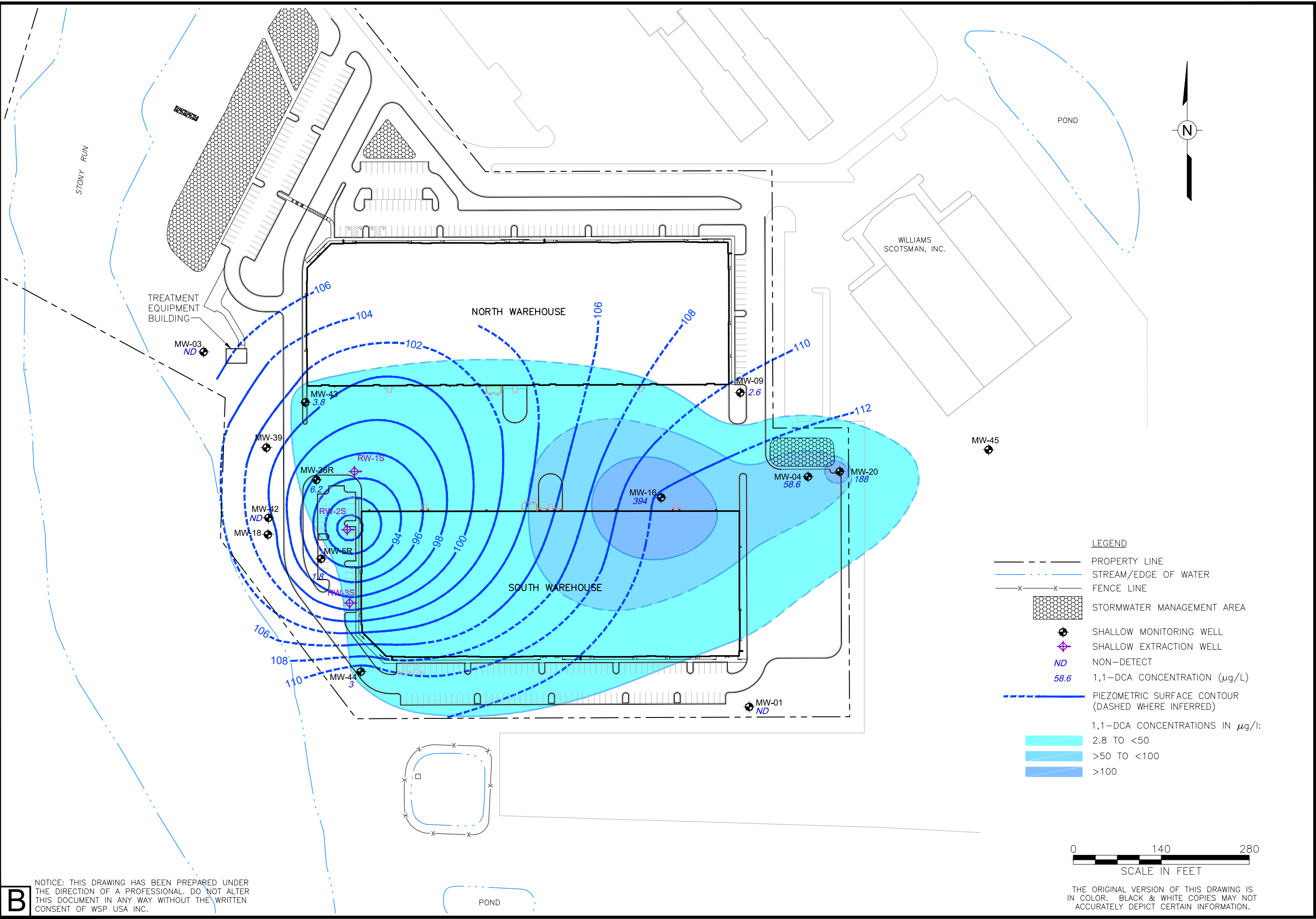
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FIGURE 15
1,1-DCE ISOCONCENTRATIONS DURING GROUNDWATER EXTRACTION FOR THE SHALLOW UNCONFINED PORTION OF THE LOWER PATAPSCO AQUIFER (MAY 2020)

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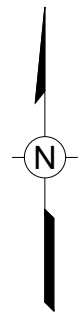
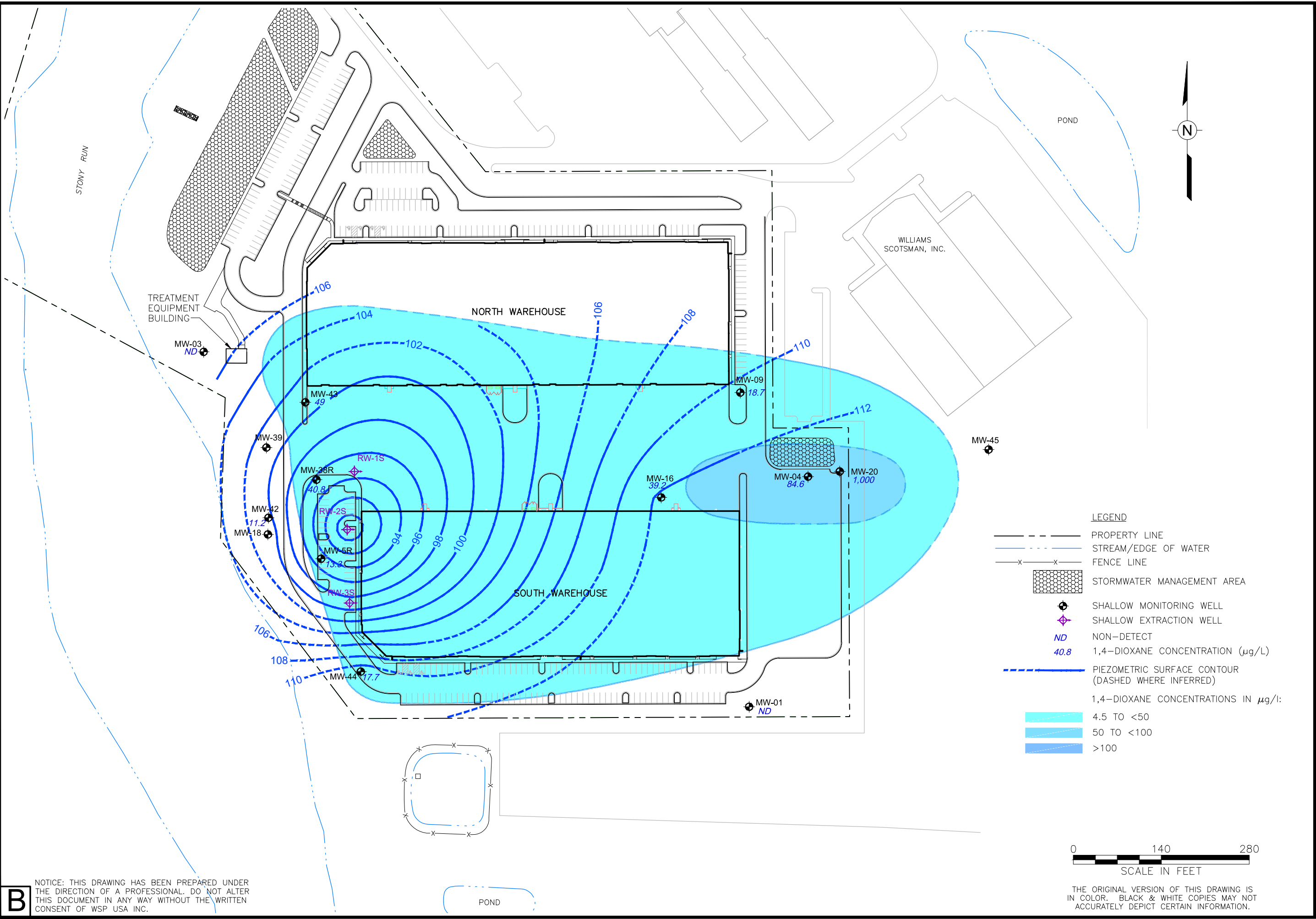
FIGURE 16
 1,1-DCA ISOCONCENTRATIONS DURING
 GROUNDWATER EXTRACTION FOR THE SHALLOW UNCONFINED
 PORTION OF THE LOWER PATAPSCO AQUIFER (MAY 2020)

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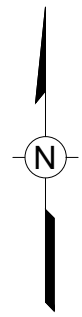
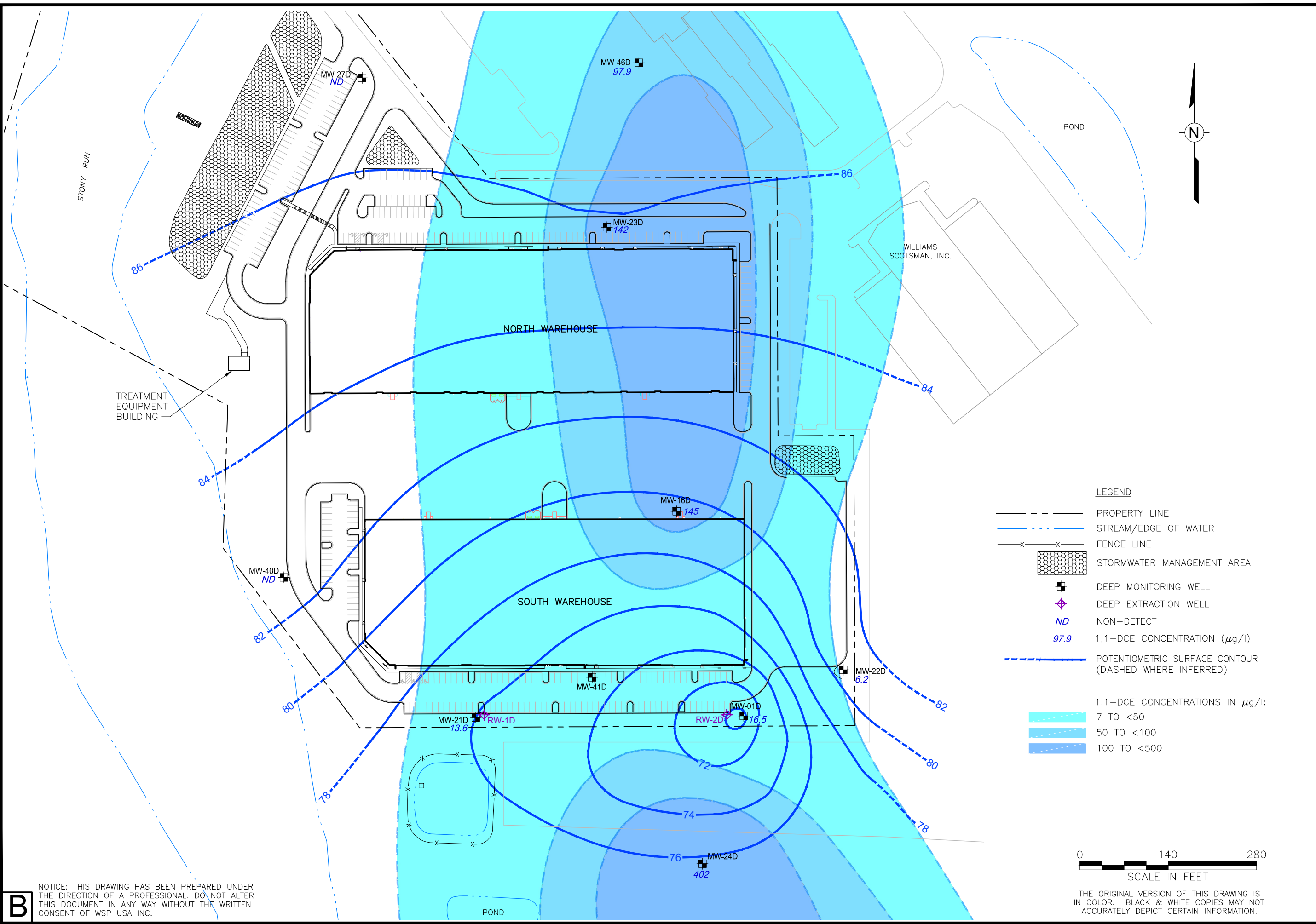
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FIGURE 17
 1,4-DIOXANE ISOCONCENTRATIONS DURING
 GROUNDWATER EXTRACTION FOR THE SHALLOW UNCONFINED
 PORTION OF THE LOWER PATAPSCO AQUIFER (MAY 2020)

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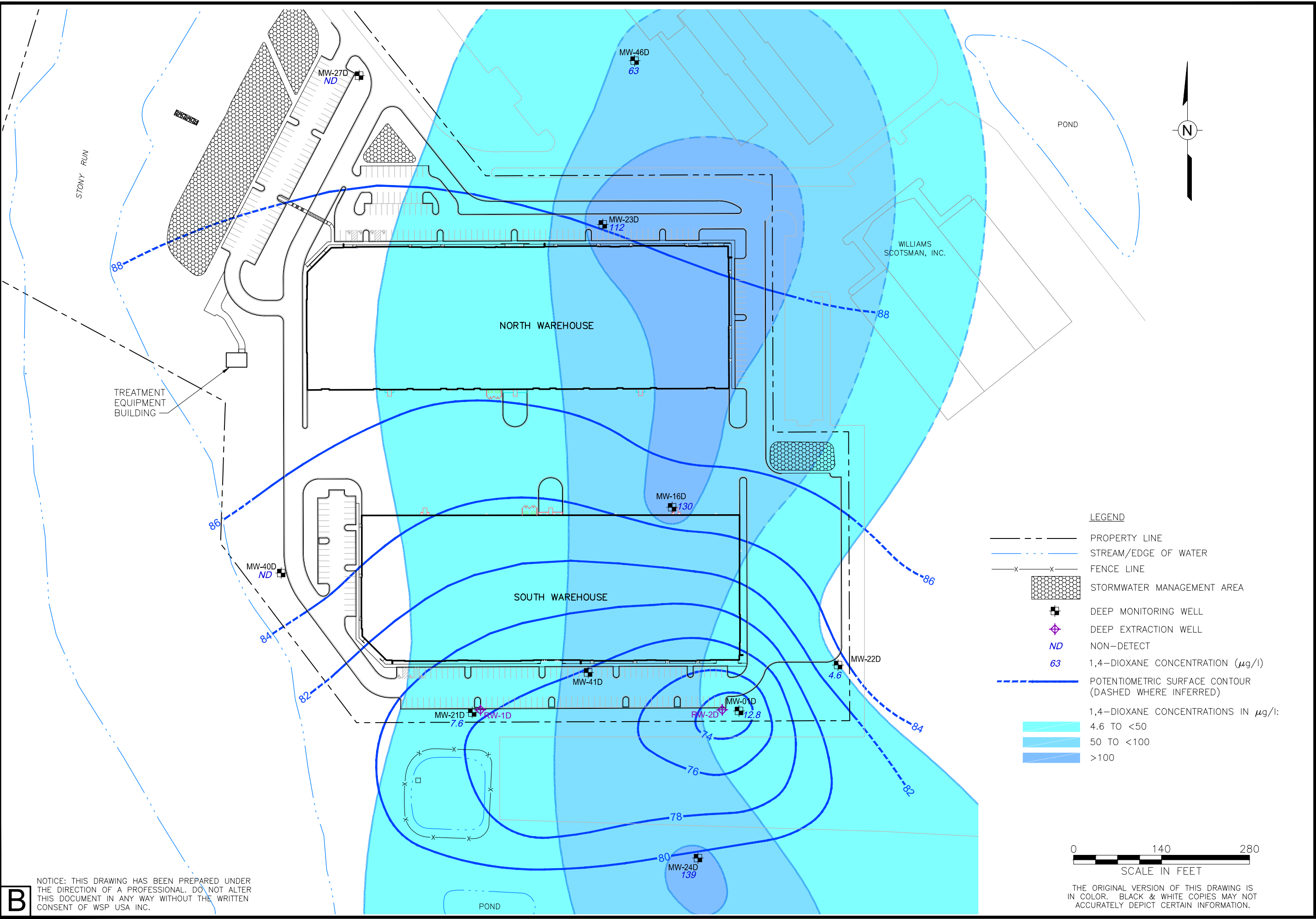
FIGURE 18
 1,1-DCE ISOCONCENTRATIONS DURING
 GROUNDWATER EXTRACTION FOR THE DEEPER CONFINED
 PORTION OF THE LOWER PATAPSCO AQUIFER (MAY 2020)

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FIGURE 19
 1,4-DIOXANE CONCENTRATIONS DURING
 GROUNDWATER EXTRACTION FOR THE DEEPER CONFINED
 PORTION OF THE LOWER PATAPSCO AQUIFER (MAY 2020)

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TABLES



Table 1

**Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)**

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)	Influent VSP-1 3/13/2017	Influent VSP-1 3/15/2017	Influent VSP-1 3/20/2017	Influent VSP-1 3/23/2017	Influent VSP-1 3/29/2017	Influent VSP-1 4/3/2017	Influent VSP-1 4/12/2017	Influent VSP-1 4/19/2017	Influent VSP-1 5/8/2017	Influent VSP-1 6/21/2017
Volatile Organic Compounds (EPA Method 8260)												
1,1,1-Trichloroethane	71-55-6	200 (c)	55	150	92	81	82	62	55	49	41	39
1,1,2,2-Tetrachloroethane	79-34-5	0.076	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	2.8 (d)	180	200	110	140	150	140	140	120	86	59
1,1-Dichloroethene	75-35-4	7 (c)	260	360	260	360	360	390	380	410	350	310
1,2,3-Trichlorobenzene	87-61-6	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	120-82-1	70	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-Chloropropane	96-12-8	0.20	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	106-93-4	0.050	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	95-50-1	600	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	5 (c)	1.6	2.0	2.5	3.1	3.5	3.6	3.5	3.0	2.6	2.1
1,2-Dichloropropane	78-87-5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	541-73-1	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	106-46-7	75	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone (MEK)	78-93-3	560	25	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	591-78-6	--	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	108-10-1	630	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	67-64-1	1,400	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	71-43-2	5	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	74-97-5	--	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	75-27-4	80	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	75-25-2	80	5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	74-83-9	0.75	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	81	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	56-23-5	5	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	75-00-3	2,100 (d)	3.0	10	2.3	2.4	2.3	2.7	2.5	2.5	2.7	2.7
Chloroform	67-66-3	80	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	74-87-3	19	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cyclohexane	110-82-7	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	124-48-1	80	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	75-71-8	--	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	700	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	98-82-8	45	1 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl Acetate	79-20-9	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)	Influent VSP-1 3/13/2017		Influent VSP-1 3/15/2017		Influent VSP-1 3/20/2017		Influent VSP-1 3/23/2017		Influent VSP-1 3/29/2017		Influent VSP-1 4/3/2017		Influent VSP-1 4/12/2017		Influent VSP-1 4/19/2017		Influent VSP-1 5/8/2017		Influent VSP-1 6/21/2017	
			Value	U	Value	U	Value	U	Value	U	Value	U	Value	U	Value	U	Value	U	Value	U	Value	U
Methyl-t-butyl ether	1634-04-4	20	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylcyclohexane	108-87-2	--	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	75-09-2	5	1	U	10		1	U	1	U	1.1		1	U	1	U	1	U	1	U	1	U
Naphthalene	91-20-3	0.17	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Styrene	100-42-5	100	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	127-18-4	5 (c)	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	108-88-3	1,000	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	79-01-6	5 (c)	1.9		10		2.2		2.8		2.8		3.0		3.0		2.9		2.6		2.2	
Trichlorofluoromethane	75-69-4	--	5	U	10	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Vinyl Chloride	75-01-4	2 (c)	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	156-59-2	70 (c)	2.2		10		1.2		1.8		1.9		2.5		2.6		2.2		1.9		1.4	
cis-1,3-Dichloropropene	10061-01-5	--	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
m,p-Xylenes	108-38-3	10,000	2	U	10	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
o-Xylene	95-47-6	10,000	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	156-60-5	100	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	10061-02-6	--	1	U	10	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
TOTAL VOCs:	--	--	538.7		752		470.2		591.1		603.6		603.8		586.6		589.6		486.8		416.4	
Volatile Organic Compounds (EPA Method 8260 - SIM)																						
1,4-Dioxane	71-55-6	15 (c)	250		440		360		330		340		330		290		270		220		190	

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)	Influent VSP-1 7/10/2017		Influent VSP-1 8/3/2017		Influent VSP-1 9/11/2017		Influent VSP-1 10/9/2017		Influent VSP-1 11/7/2017		Influent VSP-1 12/11/2017		Influent VSP-1 1/10/2018		Influent VSP-1 2/7/2018		Influent VSP-1 3/19/2018		Influent VSP-1 4/17/2018	
			Value	U	Value	U	Value	U	Value	U	Value	U	Value	U	Value	U	Value	U	Value	U	Value	U
Volatile Organic Compounds (EPA Method 8260)																						
1,1,1-Trichloroethane	71-55-6	200 (c)	44		41		35		32		32		26		25		26		23		22	
1,1,2,2-Tetrachloroethane	79-34-5	0.076	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	79-00-5	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	75-34-3	2.8 (d)	57		49		40		44		47		48		51		58		61		64	
1,1-Dichloroethene	75-35-4	7 (c)	250		230		240		200		240		250		270		260		290		320	
1,2,3-Trichlorobenzene	87-61-6	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	120-82-1	70	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-Chloropropane	96-12-8	0.20	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dibromoethane (EDB)	106-93-4	0.050	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	95-50-1	600	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	107-06-2	5 (c)	2.1		2.0		1.7		1.6		1.8		1.8		2.0		2.4		2.3		2.3	
1,2-Dichloropropane	78-87-5	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	541-73-1	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	106-46-7	75	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone (MEK)	78-93-3	560	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone	591-78-6	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-Pentanone	108-10-1	630	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	1,400	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzene	71-43-2	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	74-97-5	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	75-27-4	80	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	75-25-2	80	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Bromomethane	74-83-9	0.75	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide	75-15-0	81	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon Tetrachloride	56-23-5	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	108-90-7	100	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	75-00-3	2,100 (d)	2.3		1.8		1.7		2.6		2.6		4.2		4.0		4.1		4.6		5.8	
Chloroform	67-66-3	80	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	74-87-3	19	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane	110-82-7	--	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dibromochloromethane	124-48-1	80	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	75-71-8	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	100-41-4	700	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	98-82-8	45	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl Acetate	79-20-9	--	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)	Influent VSP-1 7/10/2017		Influent VSP-1 8/3/2017		Influent VSP-1 9/11/2017		Influent VSP-1 10/9/2017		Influent VSP-1 11/7/2017		Influent VSP-1 12/11/2017		Influent VSP-1 1/10/2018		Influent VSP-1 2/7/2018		Influent VSP-1 3/19/2018		Influent VSP-1 4/17/2018	
			Value	U	Value	U	Value	U	Value	U	Value	U	Value	U	Value	U	Value	U	Value	U	Value	U
Methyl-t-butyl ether	1634-04-4	20	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylcyclohexane	108-87-2	--	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	75-09-2	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Naphthalene	91-20-3	0.17	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Styrene	100-42-5	100	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	127-18-4	5 (c)	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	108-88-3	1,000	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	79-01-6	5 (c)	2.2		2.0		1.7		1.6		1.7		1.6		1.7		1.8		1.7		1.7	
Trichlorofluoromethane	75-69-4	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Vinyl Chloride	75-01-4	2 (c)	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	156-59-2	70 (c)	1.3		1.3		1	U	1.2		1.3		1.6		1.7		2.0		2.2		2.3	
cis-1,3-Dichloropropene	10061-01-5	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
m,p-Xylenes	108-38-3	10,000	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
o-Xylene	95-47-6	10,000	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	156-60-5	100	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	10061-02-6	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
TOTAL VOCs:	--	--	358.9		327.1		320.1		283.0		326.4		333.2		355.4		354.3		384.8		418.1	
Volatile Organic Compounds (EPA Method 8260 - SIM)																						
1,4-Dioxane	71-55-6	15 (c)	170		170		160		160		150		150		180		170		150		150	

Table 1

**Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)**

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)	Influent VSP-1 5/8/2018		Influent VSP-1 6/5/2018		Influent VSP-1 7/12/2018 (e)		Influent VSP-1 10/3/2018		Influent VSP-1 1/8/2019		Influent VSP-1 4/4/2019		Influent VSP-1 5/8/2019		Influent VSP-1 7/2/2019		Influent VSP-1 10/16/2019		Influent VSP-1 1/9/2020		
Volatile Organic Compounds (EPA Method 8260)																							
1,1,1-Trichloroethane	71-55-6	200	(c)	19		23		24		28		20		27		29		27		20		19	
1,1,2,2-Tetrachloroethane	79-34-5	0.076		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	79-00-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	75-34-3	2.8	(d)	70		76		74		72		63		54		51		44		43		44	
1,1-Dichloroethene	75-35-4	7	(c)	310		310		320		330		330		240		260		230		240		220	
1,2,3-Trichlorobenzene	87-61-6	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
1,2,4-Trichlorobenzene	120-82-1	70		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
1,2-Dibromo-3-Chloropropane	96-12-8	0.20		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5.0	U	5.0	U	5.0	U
1,2-Dibromoethane (EDB)	106-93-4	0.050		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	95-50-1	600		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	107-06-2	5	(c)	2.5		2.6		2.4		2.7		2.2		2		1.8		1.7		1.5		1.5	
1,2-Dichloropropane	78-87-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	541-73-1	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	106-46-7	75		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
2-Butanone (MEK)	78-93-3	560		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone	591-78-6	--		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5.0	U	5.0	U	5.0	U
4-Methyl-2-Pentanone	108-10-1	630		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5.0	U	5.0	U	5.0	U
Acetone	67-64-1	1,400		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzene	71-43-2	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
Bromochloromethane	74-97-5	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
Bromodichloromethane	75-27-4	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
Bromoform	75-25-2	80		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5.0	U	5.0	U	5.0	U
Bromomethane	74-83-9	0.75		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
Carbon Disulfide	75-15-0	81		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Carbon Tetrachloride	56-23-5	5		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
Chlorobenzene	108-90-7	100		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
Chloroethane	75-00-3	2,100	(d)	7.3		7.2		7.8		6.1		5.7		4.5		4.00		3.90		4		3.5	
Chloroform	67-66-3	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
Chloromethane	74-87-3	19		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
Cyclohexane	110-82-7	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Dibromochloromethane	124-48-1	80		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	75-71-8	--		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
Ethylbenzene	100-41-4	700		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
Isopropylbenzene	98-82-8	45		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U
Methyl Acetate	79-20-9	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)	Influent VSP-1 5/8/2018		Influent VSP-1 6/5/2018		Influent VSP-1 7/12/2018 (e)		Influent VSP-1 10/3/2018		Influent VSP-1 1/8/2019		Influent VSP-1 4/4/2019		Influent VSP-1 5/8/2019		Influent VSP-1 7/2/2019		Influent VSP-1 10/16/2019		Influent VSP-1 1/9/2020			
Methyl-t-butyl ether	1634-04-4	20	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U		
Methylcyclohexane	108-87-2	--	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	75-09-2	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U	1.0	U
Naphthalene	91-20-3	0.17	1	U	1	U	1	U	1	U	1	U	1.6		1	U	1.0	U	1.0	U	1.0	U	1.0	U
Styrene	100-42-5	100	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethene	127-18-4	5 (c)	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U	1.0	U
Toluene	108-88-3	1,000	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichloroethene	79-01-6	5 (c)	1.7		1.9		1.8		1.9		1.6		1.6		1.6		1.5		1.2		1.2		1.2	
Trichlorofluoromethane	75-69-4	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5.0	U	5.0	U	5.0	U	5.0	U
Vinyl Chloride	75-01-4	2 (c)	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U	1.0	U
cis-1,2-Dichloroethene	156-59-2	70 (c)	2.5		2.7		2.7		2.6		2.1		1.8		1.7		1.6		1.3		1.2		1.2	
cis-1,3-Dichloropropene	10061-01-5	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U	1.0	U
m,p-Xylenes	108-38-3	10,000	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2.0	U	2.0	U	2.0	U	2.0	U
o-Xylene	95-47-6	10,000	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,2-Dichloroethene	156-60-5	100	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,3-Dichloropropene	10061-02-6	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.0	U	1.0	U	1.0	U	1.0	U
TOTAL VOCs:	--	--	413.0		423.4		432.7		443.3		424.6		332.5		349.1		309.7		311.0		290.4		290.4	
Volatile Organic Compounds (EPA Method 8260 - SIM)																								
1,4-Dioxane	71-55-6	15 (c)	170		140		130		150		150		130		130		150		120		110		110	

Table 1

**Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)**

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)	Influent VSP-1 4/7/2020		Influent VSP-1 7/30/2020		Influent VSP-1 11/12/2020		
			Value	U	Value	U	Value	U	
Volatile Organic Compounds (EPA Method 8260)									
1,1,1-Trichloroethane	71-55-6	200 (c)	21		24		19		
1,1,2,2-Tetrachloroethane	79-34-5	0.076	1.0	U	1.0	U	1.0	U	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	--	1.0	U	1.0	U	1.0	U	
1,1,2-Trichloroethane	79-00-5	5	1.0	U	1.0	U	1.0	U	
1,1-Dichloroethane	75-34-3	2.8 (d)	45		49		47		
1,1-Dichloroethene	75-35-4	7 (c)	220		250		220		
1,2,3-Trichlorobenzene	87-61-6	--	1.0	U	1.0	U	1.0	U	
1,2,4-Trichlorobenzene	120-82-1	70	1.0	U	1.0	U	1.0	U	
1,2-Dibromo-3-Chloropropane	96-12-8	0.20	5.0	U	5.0	U	1.0	U	
1,2-Dibromoethane (EDB)	106-93-4	0.050	1.0	U	1.0	U	1.0	U	
1,2-Dichlorobenzene	95-50-1	600	1.0	U	1.0	U	1.0	U	
1,2-Dichloroethane	107-06-2	5 (c)	1.5		1.6		1.4		
1,2-Dichloropropane	78-87-5	5	1.0	U	1.0	U	1.0	U	
1,3-Dichlorobenzene	541-73-1	--	1.0	U	1.0	U	1.0	U	
1,4-Dichlorobenzene	106-46-7	75	1.0	U	1.0	U	1.0	U	
2-Butanone (MEK)	78-93-3	560	5.0	U	5.0	U	5.0	U	
2-Hexanone	591-78-6	--	5.0	U	5.0	U	5.0	U	
4-Methyl-2-Pentanone	108-10-1	630	5.0	U	5.0	U	5.0	U	
Acetone	67-64-1	1,400	5.0	U	5.0	U	5.0	U	
Benzene	71-43-2	5	1.0	U	1.0	U	1.0	U	
Bromochloromethane	74-97-5	--	1.0	U	1.0	U	1.0	U	
Bromodichloromethane	75-27-4	80	1.0	U	1.0	U	1.0	U	
Bromoform	75-25-2	80	1.0	U	1.0	U	1.0	U	
Bromomethane	74-83-9	0.75	1.0	U	1.0	U	1.0	U	
Carbon Disulfide	75-15-0	81	1.0	U	1.0	U	1.0	U	
Carbon Tetrachloride	56-23-5	5	1.0	U	1.0	U	1.0	U	
Chlorobenzene	108-90-7	100	1.0	U	1.0	U	1.0	U	
Chloroethane	75-00-3	2,100 (d)	3.7		3.7		4.2		
Chloroform	67-66-3	80	1.0	U	1.0	U	1.0	U	
Chloromethane	74-87-3	19	1.0	U	1.0	U	1.0	U	
Cyclohexane	110-82-7	--	10.0	U	10.0	U	1.0	U	
Dibromochloromethane	124-48-1	80	1.0	U	1.0	U	1.0	U	
Dichlorodifluoromethane	75-71-8	--	1.0	U	1.0	U	1.0	U	
Ethylbenzene	100-41-4	700	1.0	U	1.0	U	1.0	U	
Isopropylbenzene	98-82-8	45	1.0	U	1.0	U	1.0	U	
Methyl Acetate	79-20-9	--	10.0	U	10.0	U	1.0	U	

Table 1

Historical Influent Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Cas#	MDE Cleanup Standards for Groundwater Type I/II Aquifers (b)	Influent VSP-1 4/7/2020		Influent VSP-1 7/30/2020		Influent VSP-1 11/12/2020	
			Concentration	U	Concentration	U	Concentration	U
Methyl-t-butyl ether	1634-04-4	20	1.0	U	1.0	U	1.0	U
Methylcyclohexane	108-87-2	--	10.0	U	10.0	U	1.0	U
Methylene Chloride	75-09-2	5	1.0	U	1.0	U	1.0	U
Naphthalene	91-20-3	0.17	1.0	U	1.0	U	1.0	U
Styrene	100-42-5	100	1.0	U	1.0	U	1.0	U
Tetrachloroethene	127-18-4	5 (c)	1.0	U	1.0	U	1.0	U
Toluene	108-88-3	1,000	1.0	U	1.0	U	1.0	U
Trichloroethene	79-01-6	5 (c)	1.2		1.2		1.1	
Trichlorofluoromethane	75-69-4	--	1.0	U	1.0	U	1.0	U
Vinyl Chloride	75-01-4	2 (c)	1.0	U	1.0	U	1.0	U
cis-1,2-Dichloroethene	156-59-2	70 (c)	1.2		1.4		1.2	
cis-1,3-Dichloropropene	10061-01-5	--	1.0	U	1.0	U	1.0	U
m,p-Xylenes	108-38-3	10,000	2.0	U	2.0	U	2.0	U
o-Xylene	95-47-6	10,000	1.0	U	1.0	U	1.0	U
trans-1,2-Dichloroethene	156-60-5	100	1.0	U	1.0	U	1.0	U
trans-1,3-Dichloropropene	10061-02-6	--	1.0	U	1.0	U	1.0	U
TOTAL VOCs:	--	--	293.6		330.9		293.9	
Volatile Organic Compounds (EPA Method 8260 - SIM)								
1,4-Dioxane	71-55-6	15 (c)	260		110		110	

Notes:

a/ MDE = Maryland Department of the Environment; EPA = US Environmental Protection Agency; VOC = volatile organic compound; SIM = Selected Ion Monitoring; U = not detected above the method detection limit; -- = no existing cleanup standard.

All concentrations are in micrograms per liter (µg/L).

Results shown in highlight and **bold** exceed the cleanup standard.

b/ All cleanup standards, except for 1,4-dioxane, are equal to the Maryland Generic Numeric Cleanup Standards for Groundwater, Type I and II Aquifers, from the State of Maryland Interim Final Guidance (October 2018). Accessed May 27, 2020: <https://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/MDE%20Soil%20and%20Groundwater%20Cleanup%20Standards%2010-2018%20Interim%20Final%20Update%203-2.pdf>

c/ Numeric cleanup standards are equal to those in Section 6 of WSP's October 2, 2015, Response Action Plan, Revision 2.

d/ Numeric cleanup standards for 1,1-dichloroethane and chloroethane reflect the current standards promulgated by the State of Maryland in October 2018 and differ from those in Section 6 of WSP's October 2, 2015, Response Action Plan, Revision 2.

e/ Reduced influent monitoring frequency to quarterly effective July 2018.

Table 2

**Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)**

Analyte Name	Units	Cas#	Permit Limits	Sample ID:	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	
				Date:	03/13/2017	3/20/2017	3/29/2017	3/30/2017	4/3/2017	5/8/2017	6/21/2017	7/10/2017	8/3/2017	9/11/2017						
Volatile Organic Compounds (EPA Method 624)																				
1,1,1-Trichloroethane	µg/L	71-55-6	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,1,2-Trichloroethane	µg/L	79-00-5	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,1-Dichloroethane	µg/L	75-34-3	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,1-Dichloroethene	µg/L	75-35-4	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,2-Dichlorobenzene	µg/L	95-50-1	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,2-Dichloroethane	µg/L	107-06-2	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,2-Dichloropropane	µg/L	78-87-5	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,3-Dichlorobenzene	µg/L	541-73-1	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
1,4-Dichlorobenzene	µg/L	106-46-7	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Benzene	µg/L	71-43-2	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Bromodichloromethane	µg/L	75-27-4	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Bromoform	µg/L	75-25-2	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Bromomethane	µg/L	74-83-9	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Carbon Tetrachloride	µg/L	56-23-5	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chlorobenzene	µg/L	108-90-7	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chloroethane	µg/L	75-00-3	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chloroform	µg/L	67-66-3	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Chloromethane	µg/L	74-87-3	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Dibromochloromethane	µg/L	124-48-1	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Dichlorodifluoromethane	µg/L	75-71-8	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Ethylbenzene	µg/L	100-41-4	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Methylene Chloride	µg/L	75-09-2	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Tetrachloroethylene	µg/L	127-18-4	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Toluene	µg/L	108-88-3	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Trichloroethene	µg/L	79-01-6	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Trichlorofluoromethane	µg/L	75-69-4	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Vinyl Chloride	µg/L	75-01-4	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
trans-1,2-dichloroethene	µg/L	156-60-5	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6	5.0 U	5.0	U	5.0	U	5.0	U	NA	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
TOTAL VOCs:			ND		ND		ND		NA		ND		ND		ND		ND		ND	

Table 2

**Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)**

Analyte Name	Units	Cas#	Permit Limits	Sample ID:	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4		
				Date:	03/13/2017	3/20/2017	3/29/2017	3/30/2017	4/3/2017	5/8/2017	6/21/2017	7/10/2017	8/3/2017	9/11/2017							
Total Metals and Hardness (EPA Method 200.8)																					
Calcium	µg/L	7440-70-2		28,600		3,650		3,400		NA		2,840		NA		3,440		NA		NA	
Copper	µg/L	7440-50-8	13	1.0	U	1.0	U	1.0	U	NA		3.2		4.7		4.3		4.6		5.0	
Hardness (Ca & Mg)	mg/L	HARDCAMG		91		15		14		NA		12		15		14		14		15	
Lead	µg/L	7439-92-1	65	1.0	U	1.0	U	1.0	U	NA		1	U	1	U	1.0	U	1.0	U	1.0	U
Magnesium	µg/L	7439-95-4		4,690		1,470		1,260		NA		1,220		NA		1,400		NA		NA	
Nickel	µg/L	7440-02-0	470	1.5		29.9		2.6		NA		7.7		9.4		9.2		9.7		10.1	
Zinc	µg/L	7440-66-6	120	20	U	179		27.2		NA		24.7		20.2		20	U	23.7		22.8	
Dissolved Metals																					
Copper	µg/L	7440-50-8		1.0	U	1.0	U	1.0	U	NA		1.4		3.5		1.9		2.3		1.1	
Lead	µg/L	7439-92-1		1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Nickel	µg/L	7440-02-0		1.0	U	27.3		2.5		NA		8		9.3		9.3		9.3		1	U
Zinc	µg/L	7440-66-6		20	U	163		20	U	NA		20	U	20	U	20	U	20	U	20	U
Total Suspended Solids (SM 2540D)																					
Total Suspended Solids	mg/L	TSS		1.0	U	1.0	U	1.0	U	NA		1.0	U	1.0	U	2.0	U	2.0	U	1.0	U
Biological Oxygen Demand (SM 5210B)																					
Biological Oxygen Demand, 5 Day	mg/L	BOD5		2.0	U	2.0	U	3.0	U	NA		2.0	U	2.0	U	5.0	U	5.0	U	5.0	U
Field Parameters																					
pH	SU	-	6.5 - 8.5	7.29		6.88		6.84		NA		6.56		6.72		7.05		7.02		7.5	
Dissolved Oxygen	mg/L	-	≥ 5	7.08		8.14		10.65		NA		7.35		11.05		13.50		15		17.3	
Daily Flow Rate (b)	gpd	-		43,200		93,600		108,000		NA		103,680		102,240		102,816		99,216		92,880	
Nitrogen																					
Nitrogen, Total	lbs/qtr			NA		NA		NA		5.71		NA		110.68		NA		98.67		NA	
Ammonia (as N)	mg/L	7664-41-7		NA		NA		NA	0.02	U		NA		0.02	U	NA		0.2	U	NA	
Nitrate (as N)	mg/L	7727-37-9		NA		NA		NA	0.68			NA		0.91		NA		0.95		NA	
Nitrite (as N)	mg/L	7727-37-9		NA		NA		NA	0.1	U		NA		0.1	U	NA		0.1	U	NA	
Organic Nitrogen (as N)	mg/L	7727-37-9		NA		NA		NA	0.4	U		NA		0.4	U	NA		0.4	U	NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9		NA		NA		NA	0.4	U		NA		0.4	U	NA		0.4	U	NA	

Table 2

**Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)**

Analyte Name	Units	Cas#	Sample ID: Date:	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	
				10/9/2017	11/7/2017	12/11/2017	1/10/2018	2/7/2018	3/19/2018	4/17/2018	5/8/2018	6/5/2018	7/12/2018	Permit Limits	(c)						
Volatile Organic Compounds (EPA Method 624)																					
1,1,1-Trichloroethane	µg/L	71-55-6		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
1,1-Dichloroethane	µg/L	75-34-3		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
1,1-Dichloroethene	µg/L	75-35-4		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
1,2-Dichloroethane	µg/L	107-06-2		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
1,2-Dichloropropane	µg/L	78-87-5		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Benzene	µg/L	71-43-2		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Bromodichloromethane	µg/L	75-27-4		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Bromoform	µg/L	75-25-2		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Bromomethane	µg/L	74-83-9		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Carbon Tetrachloride	µg/L	56-23-5		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Chlorobenzene	µg/L	108-90-7		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Chloroethane	µg/L	75-00-3		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Chloroform	µg/L	67-66-3		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Chloromethane	µg/L	74-87-3		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Dibromochloromethane	µg/L	124-48-1		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	µg/L	75-71-8		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Ethylbenzene	µg/L	100-41-4		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Methylene Chloride	µg/L	75-09-2		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Tetrachloroethylene	µg/L	127-18-4		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Toluene	µg/L	108-88-3		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Trichloroethene	µg/L	79-01-6		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Trichlorofluoromethane	µg/L	75-69-4		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
Vinyl Chloride	µg/L	75-01-4		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6		5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	1.0	U	1.0	U
TOTAL VOCs:				ND		ND		ND		ND		ND		ND		ND		ND		ND	

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID:	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4		
				Date:	10/9/2017	11/7/2017	12/11/2017	1/10/2018	2/7/2018	3/19/2018	4/17/2018	5/8/2018	6/5/2018	7/12/2018								
Total Metals and Hardness (EPA Method 200.8)																						
Calcium	µg/L	7440-70-2			NA	NA	NA	NA	3,980	4,030	4,280	NA	NA	4,200								
Copper	µg/L	7440-50-8	13		4.6	1.0	U	4.0	4.2	4.0	4.9	2.1	1.3	2.4	5.0							
Hardness (Ca & Mg)	mg/L	HARDCAMG			15	16		16	18	16	17	18	18	16	17							
Lead	µg/L	7439-92-1	65		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U		
Magnesium	µg/L	7439-95-4			NA	NA		NA	NA	1,560	1,620	1,810	NA	NA	1,650							
Nickel	µg/L	7440-02-0	470		10.6	10.8		10.7	11.1	11.2	11.4	8.4	13.2	11.6	12.6							
Zinc	µg/L	7440-66-6	120		24.6	21.2		20.6	28.6	22	26.9	28.4	24.5	32.4	27.9							
Dissolved Metals																						
Copper	µg/L	7440-50-8			3.2	1.0	U	2.8	3.1	2.7	4.1	1.9	1.2	1.4	3.4							
Lead	µg/L	7439-92-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U		
Nickel	µg/L	7440-02-0			10.3	10.6		10.1	11.7	10.8	12.3	8.1	12.3	10.0	11.6							
Zinc	µg/L	7440-66-6			20	U	20	U	20.7	20	U	23.8	20	U	21.2							
Total Suspended Solids (SM 2540D)																						
Total Suspended Solids	mg/L	TSS			1.0	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	2.0	U	2.0	U
Biological Oxygen Demand (SM 5210B)																						
Biological Oxygen Demand, 5 Day	mg/L	BOD5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Field Parameters																						
pH	SU	-	6.5 - 8.5		7.41	6.6		7.8	7.48	7.60	7.48	7.99	7.61	7.53	7.74							
Dissolved Oxygen	mg/L	-	≥ 5		17.6	18.65		17.79	15.6	15.93	15.22	12.13	13.30	12.63	11.76							
Daily Flow Rate (b)	gpd	-			82,878	86,809		95,592	97,690	97,015	88,665	90,352	94,346	97,707	96,390							
Nitrogen																						
Nitrogen, Total	lbs/qtr				93.24	NA		NA	130.22	NA	NA	NA	NA	NA	NA							
Ammonia (as N)	mg/L	7664-41-7			0.2	U	NA	NA	0.2	U	NA	NA	NA	NA	NA							
Nitrate (as N)	mg/L	7727-37-9			0.92	NA		NA	1.4	NA	NA	NA	NA	NA	NA							
Nitrite (as N)	mg/L	7727-37-9			0.1	U	NA	NA	0.1	U	NA	NA	NA	NA	NA							
Organic Nitrogen (as N)	mg/L	7727-37-9			0.4	U	NA	NA	0.4	U	NA	NA	NA	NA	NA							
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			0.4	U	NA	NA	0.4	U	NA	NA	NA	NA	NA							

Table 2

**Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)**

Analyte Name	Units	Cas#	Permit Limits	Sample ID:	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4
				Date:	8/8/2018	9/6/2018	10/3/2018	11/6/2018	12/6/2018	1/8/2019	2/5/2019	3/7/2019	4/4/2019	5/8/2019							
Volatile Organic Compounds (EPA Method 624)																					
1,1,1-Trichloroethane	µg/L	71-55-6		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	µg/L	75-34-3		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	µg/L	75-35-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	µg/L	107-06-2		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloropropane	µg/L	78-87-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8		1.0	U	1.0	U	1.0	U	1.0	U	NA	U	NA	U	NA	U	NA	U	NA	U
Benzene	µg/L	71-43-2		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromodichloromethane	µg/L	75-27-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromoform	µg/L	75-25-2		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromomethane	µg/L	74-83-9		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Carbon Tetrachloride	µg/L	56-23-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chlorobenzene	µg/L	108-90-7		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroethane	µg/L	75-00-3		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroform	µg/L	67-66-3		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloromethane	µg/L	74-87-3		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dibromochloromethane	µg/L	124-48-1		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	µg/L	75-71-8		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Ethylbenzene	µg/L	100-41-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Methylene Chloride	µg/L	75-09-2		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethylene	µg/L	127-18-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Toluene	µg/L	108-88-3		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichloroethene	µg/L	79-01-6		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichlorofluoromethane	µg/L	75-69-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Vinyl Chloride	µg/L	75-01-4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TOTAL VOCs:				ND		ND		ND		ND		ND		ND		ND		ND		ND	

Table 2

**Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)**

Analyte Name	Units	Cas#	Permit Limits	Sample ID:	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	
				Date:	8/8/2018	9/6/2018	10/3/2018	11/6/2018	12/6/2018	1/8/2019	2/5/2019	3/7/2019	4/4/2019	5/8/2019							
Total Metals and Hardness (EPA Method 200.8)																					
Calcium	µg/L	7440-70-2			4,170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Copper	µg/L	7440-50-8	13		4.0	3.8	4.2	2.1	2.9	1.0	U	1.7	3.7	3.9	4.3						
Hardness (Ca & Mg)	mg/L	HARDCAMG			17	18	17	18	18	19	U	18	17	16	18						
Lead	µg/L	7439-92-1	65		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Magnesium	µg/L	7439-95-4			1,690	NA	NA	NA	NA	NA	U	NA	NA	NA	NA	U	NA	NA	NA	U	
Nickel	µg/L	7440-02-0	470		12.1	12.0	12.0	13.3	13	16.6	13.6	12.6	11.6	13.2							
Zinc	µg/L	7440-66-6	120		25.8	26.0	31.8	20	U	23.4	26.5	27.5	25.8	22.4	25.1						
Dissolved Metals																					
Copper	µg/L	7440-50-8			2.6	2.2	2.8	1.2	2.3	1.0	U	1.0	U	3.2	3.2	3.5					
Lead	µg/L	7439-92-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Nickel	µg/L	7440-02-0			11.6	10.9	11.6	11.6	12.1	14	13.2	11.3	13.3	12.4							
Zinc	µg/L	7440-66-6			51.6	20	U	28.4	20	U	20	U	20.5	20.7	20	U	20	U	20	U	
Total Suspended Solids (SM 2540D)																					
Total Suspended Solids	mg/L	TSS			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Biological Oxygen Demand (SM 5210B)																					
Biological Oxygen Demand, 5 Day	mg/L	BOD5			2.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	
Field Parameters																					
pH	SU	-	6.5 - 8.5		6.94	8.05	6.80	6.81	6.97	6.85	6.75	7.2	7.15	6.72							
Dissolved Oxygen	mg/L	-	≥ 5		12.45	13.12	8.50	10.33	12.15	8.82	8.85	7.51	7.17	7.28							
Daily Flow Rate (b)	gpd	-			85,875	96,894	93,553	77,496	87,236	92,672	97,420	98,934	104,205	101,014							
Nitrogen																					
Nitrogen, Total	lbs/qtr				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Ammonia (as N)	mg/L	7664-41-7			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Nitrate (as N)	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Nitrite (as N)	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Organic Nitrogen (as N)	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Table 2

**Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)**

Analyte Name	Units	Cas#	Permit Limits	Sample ID:	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	
				Date:	6/12/2019	7/2/2019	8/1/2019	9/4/2019	10/16/2019	11/4/2019	12/2/2019	1/9/2020	2/4/2020	3/24/2020							
Volatile Organic Compounds (EPA Method 624)																					
1,1,1-Trichloroethane	µg/L	71-55-6	3.4		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
1,1,2,2-Tetrachloroethane	µg/L	79-34-5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
1,1,2-Trichloroethane	µg/L	79-00-5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
1,1-Dichloroethane	µg/L	75-34-3	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
1,1-Dichloroethene	µg/L	75-35-4	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
1,2-Dichlorobenzene	µg/L	95-50-1	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
1,2-Dichloroethane	µg/L	107-06-2	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
1,2-Dichloropropane	µg/L	78-87-5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
1,3-Dichlorobenzene	µg/L	541-73-1	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
1,4-Dichlorobenzene	µg/L	106-46-7	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
2-Chloroethyl Vinyl Ether	µg/L	110-75-8	NA		NA		NA		NA		NA		NA		NA		NA		NA		
Benzene	µg/L	71-43-2	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Bromodichloromethane	µg/L	75-27-4	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Bromoform	µg/L	75-25-2	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Bromomethane	µg/L	74-83-9	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Carbon Tetrachloride	µg/L	56-23-5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Chlorobenzene	µg/L	108-90-7	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Chloroethane	µg/L	75-00-3	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Chloroform	µg/L	67-66-3	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Chloromethane	µg/L	74-87-3	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Dibromochloromethane	µg/L	124-48-1	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Dichlorodifluoromethane	µg/L	75-71-8	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Ethylbenzene	µg/L	100-41-4	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Methylene Chloride	µg/L	75-09-2	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Tetrachloroethylene	µg/L	127-18-4	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Toluene	µg/L	108-88-3	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Trichloroethene	µg/L	79-01-6	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Trichlorofluoromethane	µg/L	75-69-4	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Vinyl Chloride	µg/L	75-01-4	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
cis-1,3-Dichloropropene	µg/L	10061-01-5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
trans-1,2-dichloroethene	µg/L	156-60-5	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
trans-1,3-dichloropropene	µg/L	10061-02-6	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
TOTAL VOCs:			3.4		ND		ND		ND		ND		ND		ND		ND		ND		

Table 2

Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)

Analyte Name	Units	Cas#	Permit Limits	Sample ID:	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	
				Date:	6/12/2019	7/2/2019	8/1/2019	9/4/2019	10/16/2019	11/4/2019	12/2/2019	1/9/2020	2/4/2020	3/24/2020							
Total Metals and Hardness (EPA Method 200.8)																					
Calcium	µg/L	7440-70-2			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Copper	µg/L	7440-50-8	13		5	2.6	1.4	3.8	3.7	3.9	3.6	2.7	1.0	U	3.3						
Hardness (Ca & Mg)	mg/L	HARDCAMG			21	19	17	20	18	17	14	20	13.0		17						
Lead	µg/L	7439-92-1	65		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Magnesium	µg/L	7439-95-4			NA	NA	NA	NA	NA	NA	NA	NA	NA		NA						
Nickel	µg/L	7440-02-0	470		13.9	8.9	8.9	13.8	13.0	13.0	12.3	13.1	4.5		9.2						
Zinc	µg/L	7440-66-6	120		29.5	39.4	22.2	25.2	28.9	28.0	26.8	25.3	20.0	U	23.2						
Dissolved Metals																					
Copper	µg/L	7440-50-8			3.4	2.0	1.0	U	1.6	1.6	1.5	1.1	3.6	1.0	U	3.2					
Lead	µg/L	7439-92-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Nickel	µg/L	7440-02-0			12.6	9.0	8.8	13.0	12.5	12.6	11.8	13.3	1.5		11.6						
Zinc	µg/L	7440-66-6			20.3	20	U	20	U	20.1	20.9	28.8	20	U	22.4	20.0	U	22.4			
Total Suspended Solids (SM 2540D)																					
Total Suspended Solids	mg/L	TSS			2.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	
Biological Oxygen Demand (SM 5210B)																					
Biological Oxygen Demand, 5 Day	mg/L	BOD5			5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	
Field Parameters																					
pH	SU	-	6.5 - 8.5		6.55	6.52	7.01	6.79	6.99	6.99	7.06	6.55	8.14		6.63						
Dissolved Oxygen	mg/L	-	≥ 5		9.86	7.78	7.76	5.75	8.30	6.94	8.46	8.16	8.13		6.95						
Daily Flow Rate (b)	gpd	-			95,834	98,658	93,473	74,748	69,097	96,262	79,991	77,418	85,908		43,238						
Nitrogen																					
Nitrogen, Total	lbs/qtr				NA	NA	NA	NA	NA	NA	NA	NA	NA		NA						
Ammonia (as N)	mg/L	7664-41-7			NA	NA	NA	NA	NA	NA	NA	NA	NA		NA						
Nitrate (as N)	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA		NA						
Nitrite (as N)	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA		NA						
Organic Nitrogen (as N)	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA		NA						
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA		NA						

Table 2

**Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)**

Analyte Name	Units	Cas#	Permit Limits	Sample ID:	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	
				Date:	4/7/2020	5/28/2020	6/29/2020	7/30/2020	8/26/2020	9/28/2020	10/26/2020	11/12/2020	12/3/2020							
Volatile Organic Compounds (EPA Method 624)																				
1,1,1-Trichloroethane	µg/L	71-55-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	µg/L	79-34-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	µg/L	79-00-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethane	µg/L	75-34-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	µg/L	75-35-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichlorobenzene	µg/L	95-50-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloroethane	µg/L	107-06-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,2-Dichloropropane	µg/L	78-87-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,3-Dichlorobenzene	µg/L	541-73-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,4-Dichlorobenzene	µg/L	106-46-7			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
2-Chloroethyl Vinyl Ether	µg/L	110-75-8			NA		NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	71-43-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromodichloromethane	µg/L	75-27-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromoform	µg/L	75-25-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Bromomethane	µg/L	74-83-9			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Carbon Tetrachloride	µg/L	56-23-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chlorobenzene	µg/L	108-90-7			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroethane	µg/L	75-00-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloroform	µg/L	67-66-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloromethane	µg/L	74-87-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dibromochloromethane	µg/L	124-48-1			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Dichlorodifluoromethane	µg/L	75-71-8			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Ethylbenzene	µg/L	100-41-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Methylene Chloride	µg/L	75-09-2			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethylene	µg/L	127-18-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Toluene	µg/L	108-88-3			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichloroethene	µg/L	79-01-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Trichlorofluoromethane	µg/L	75-69-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Vinyl Chloride	µg/L	75-01-4			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
cis-1,3-Dichloropropene	µg/L	10061-01-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,2-dichloroethene	µg/L	156-60-5			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
trans-1,3-dichloropropene	µg/L	10061-02-6			1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
TOTAL VOCs:					ND		ND		ND		ND		ND		ND		ND		ND	

Table 2

**Historical Effluent Results - NPDES Permit Constituents
Former Kop-Flex Facility
Hanover, Maryland (a)**

Analyte Name	Units	Cas#	Permit Limits	Sample ID:	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	
				Date:	4/7/2020	5/28/2020	6/29/2020	7/30/2020	8/26/2020	9/28/2020	10/26/2020	11/12/2020	12/3/2020					
Total Metals and Hardness (EPA Method 200.8)																		
Calcium	µg/L	7440-70-2			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	µg/L	7440-50-8	13		1.8	2.6	5.5	2.7	5.0	6.2	6.7	2.2	2.7					
Hardness (Ca & Mg)	mg/L	HARDCAMG			20	18	19	25	15	20	18	14	24					
Lead	µg/L	7439-92-1	65		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Magnesium	µg/L	7439-95-4			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	µg/L	7440-02-0	470		14.3	15.8	14.5	17.0	13.8	16.3	20.0	16.6	17.7					
Zinc	µg/L	7440-66-6	120		32.1	32.4	29.1	33.6	27.6	28.1	32.6	31.3	27.5					
Dissolved Metals																		
Copper	µg/L	7440-50-8			1.3	1.2	1.0	1.6	3.0	3.8	3.3	1.3	1.3					
Lead	µg/L	7439-92-1			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Nickel	µg/L	7440-02-0			13.8	14.9	14.8	15.0	14.3	15.6	15.0	15.7	17.2					
Zinc	µg/L	7440-66-6			25.1	23.4	24.3	28.6	25.9	23.2	21.5	21.4	22.7					
Total Suspended Solids (SM 2540D)																		
Total Suspended Solids	mg/L	TSS			1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Biological Oxygen Demand (SM 5210B)																		
Biological Oxygen Demand, 5 Day	mg/L	BOD5			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Field Parameters																		
pH	SU	-	6.5 - 8.5		6.76	7.01	6.82	7.23	7.20	6.98	7.63	6.96	7.67					
Dissolved Oxygen	mg/L	-	≥ 5		8.44	8.34	8.72	7.85	8.32	7.92	8.30	9.15	9.01					
Daily Flow Rate (b)	gpd	-			77,089	58,459	59,217	73,109	88,076	57,272	90,297	98,368	100,433					
Nitrogen																		
Nitrogen, Total	lbs/qtr				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ammonia (as N)	mg/L	7664-41-7			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate (as N)	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite (as N)	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organic Nitrogen (as N)	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, Total Kjeldahl	mg/L	7727-37-9			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

- a/ EPA = US Environmental Protection Agency; SM = Standard Method; VOC = volatile organic compound; µg/L = micrograms per liter; mg/L = milligrams per liter; U = not detected above the method detection limit; ND = non-detected sum; NA = compound not analyzed; SU = Standard Units; gpd = gallons per day; lbs/qtr = pounds per quarter; N = Nitrogen.
- b/ Daily Flow Rate determined by average of gallons processed per day per monitoring window.
- c/ Nitrogen parameters no longer analyzed after the first quarter 2018 per Maryland Department of the Environment Correspondance dated March 30, 2018.

Table 3

**Historical Effluent Results - 1,4-Dioxane
Former Kop-Flex Facility
Hanover, Maryland (a)**

Analyte Name	Cas#	Cleanup Goal (b)	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4
			03/13/2017 (c)	03/14/2017	3/15/2017	3/20/2017 (c)	3/23/2017	4/3/2017 (c)	4/12/2017	4/19/2017
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
			Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4
			5/8/2017 (c)	6/21/2017 (c)	7/10/2017 (c)	8/3/2017 (c)	9/11/2017 (c)	10/09/2017 (c)	10/12/2017	10/23/2017
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.0 U	1.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U
			Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4
			10/26/2017	11/7/2017 (c)	12/11/2017 (c)	1/10/2018 (c)	2/07/2018 (c)	3/19/2018 (c)	4/17/2018 (c)	5/8/2018 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.4	1.0 U	1.0 U
			Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4
			6/5/2018 (c)	7/12/2018 (c)	8/8/2018 (c)	9/6/2018 (c)	9/10/2018	9/17/2018	9/17/2018	10/3/2018 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.9	1.6	1.7	4.6	4.8	3.8	1.7
			Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4
			11/6/2018 (c)	11/30/2018	12/6/2018 (c)	12/12/2018	1/8/2019 (c)	2/5/2019 (c)	3/7/2019 (c)	4/2/2019
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	1.0 U	1.1	2.9	1.3	1.6	11.0	1.7
			Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4
			4/4/2019 (c)	5/8/2019 (c)	6/12/2019 (c)	7/2/2019 (c)	8/1/2019 (c)	9/4/2019 (c)	10/16/2019 (c)	11/4/2019 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	10.0	5.6	37.0	1.0 U	1.0 U	7.0	7.6	12.0
			Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4
			12/2/2019 (c)	1/9/2020 (c)	2/4/2020 (c)	3/24/2020 (c)	4/7/2020 (c)	5/28/2020 (c)	6/29/2020 (c)	7/30/2020 (c)
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	12.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.7	1.0 U
			Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4	Effluent VSP-4
			8/26/2020 (c)	9/28/2020 (c)	10/26/2020 (c)	11/12/2020 (c)	12/3/2020 (c)	12/15/2020		
Volatile Organic Compounds (EPA Method 8260 - SIM)										
1,4-Dioxane	71-55-6	15	1.0 U	6.3	2.0	43	2.0	2.2		

Notes:

a/ EPA = US Environmental Protection Agency; SIM = Selected Ion Monitoring; U = not detected above the method detection limit.

All concentrations are in micrograms per liter (µg/L).

Results shown in highlight and **bold** exceed the cleanup goal.

b/ Numeric cleanup standard from Section 6 of WSP's October 2, 2015, Response Action Plan, Revision 2.

c/ VOCs were analyzed by Method 624 to fulfill the NPDES permit requirement. See Table 2 for results.

Table 4

**Summary of System Discharge and Mass Removal
Former Kop-Flex Facility
Hanover, Maryland (a)**

Year	Month	Total Discharged Volume Gals	Water Flow Rate (b) GPM AVG	Estimated VOCs Removed per Month		Estimated 1,4-Dioxane Removed per Month	
				Mass lbs	Volume Gals	Mass lbs	Volume Gals
2017	Total	26,606,357	61.3	86.56	8.56	43.07	5.01
2018	Total	33,439,140	67.3	111.31	11.05	41.49	4.83
2019	Total	33,697,947	69.8	95.45	9.47	36.33	4.23
2020	January	2,399,945	71.1	5.67	0.56	2.20	0.26
	February	2,491,340	70.7	5.88	0.58	2.29	0.27
	March	1,340,388	72.6	3.17	0.31	1.23	0.14
	April	2,312,666	73.5	5.52	0.55	5.02	0.58
	May	1,812,215	73.0	4.33	0.43	3.93	0.46
	June	1,776,502	70.3	4.24	0.42	3.78	0.44
	July	2,266,375	69.0	6.11	0.61	2.08	0.24
	August	2,730,352	67.9	7.36	0.73	2.51	0.29
	September	1,718,149	69.4	4.63	0.46	1.49	0.17
	October	2,799,218	69.3	6.68	0.66	2.52	0.29
	November	2,951,043	69.2	7.04	0.70	1.65	0.19
	December	3,113,432	69.7	7.43	0.74	2.81	0.33
2020	Total	27,711,625	70.5	68.06	6.75	31.51	3.67
Cumulative		121,455,069		361.37	35.84	152.39	17.73

Notes:

a/ GPM = gallons per minute; AVG = average; lbs = pounds; gals = gallons.

b/ Average water flow rate in GPM is based on fully operational days only.

Table 5

**Summary of Recovery Well Flow Rates
Former Kop-Flex Facility
Hanover, Maryland (a)**

Average Recovery Well Flow Rates					
Location:	RW-1S	RW-2S	RW-3S	RW-1D	RW-2D
2018 Average:	4.47	1.80	2.40	28.43	28.73
2019 Average:	4.85	1.72	1.41	28.48	29.34
Month of Operation					
January 2020	3.44	1.24	1.41	22.52	20.22
February 2020	4.99	2.29	2.22	30.73	32.78
March 2020	2.08	0.89	0.87	12.07	12.81
April 2020	5.46	2.30	2.19	14.36	33.92
May 2020	2.75	1.35	1.10	16.04	16.80
June 2020	3.23	1.60	1.27	18.44	19.20
July 2020	4.13	2.00	1.45	22.00	22.56
August 2020	4.84	2.33	1.63	25.43	26.15
September 2020	3.65	1.83	1.59	18.14	20.15
October 2020	5.23	2.61	2.41	22.04	29.41
November 2020	5.33	2.65	2.52	28.84	29.40
December 2020	5.31	2.67	2.56	29.52	29.94
2020 Average:	4.20	1.98	1.77	21.68	24.45

Average Combined Flow Rate of System during 2020 (GPM): 54.08

Notes:

a/ Flow rates are listed in gallons per minute (GPM).

Table 6

**Summary of Recovery Well Volumes
Former Kop-Flex Facility
Hanover, Maryland (a)**

Summary of Recovery Well Total Volumes by Month						
Location:	RW-1S	RW-2S	RW-3S	RW-1D	RW-2D	Total
2017 Total	<i>1.659</i>	<i>1.315</i>	<i>1.005</i>	<i>10.626</i>	<i>12.218</i>	<i>26.823</i>
2018 Total	<i>2.348</i>	<i>0.943</i>	<i>1.259</i>	<i>14.942</i>	<i>15.099</i>	<i>34.592</i>
2019 Total	<i>2.489</i>	<i>0.890</i>	<i>0.721</i>	<i>14.613</i>	<i>15.052</i>	<i>33.764</i>
Month of Operation						
January 2020	0.173	0.062	0.071	1.654	1.019	2.980
February 2020	0.201	0.092	0.090	0.531	1.322	2.236
March 2020	0.111	0.048	0.046	0.643	0.683	1.530
April 2020	0.220	0.093	0.088	0.579	1.368	2.348
May 2020	0.103	0.051	0.041	0.601	0.629	1.424
June 2020	0.172	0.085	0.068	0.982	1.023	2.330
July 2020	0.196	0.095	0.069	1.046	1.072	2.478
August 2020	0.195	0.094	0.066	1.025	1.054	2.434
September 2020	0.184	0.092	0.080	0.914	1.016	2.286
October 2020	0.188	0.094	0.087	0.794	1.059	2.221
November 2020	0.215	0.107	0.102	1.163	1.186	2.772
December 2020	0.252	0.127	0.122	1.403	1.423	3.326
Percentage of Total:	8%	4%	3%	40%	45%	
2020 Total:	2.212	1.040	0.929	11.334	12.852	28.366
Cumulative Total:	8.707	4.188	3.915	51.515	55.221	123.546

Notes:

a/ Volumes of water are listed in millions of gallons.

Table 7

**2020 Recovery Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)**

Parameters	Groundwater Cleanup Standards (µg/L) (b)	Shallow Wells						Deep Wells			
		RW-1S		RW-2S		RW-3S		RW-1D		RW-2D	
		5/13/20	11/22/20	5/12/20	11/22/20	5/12/20	11/22/20	5/12/20	11/22/20	5/12/20	11/22/20
VOCs											
Chloroethane	2,100	16.3	12.8	2 U	1 U	1 U	1 U	3.9	4.0	1 U	1 U
1,1-Dichloroethane	2.8	98.2	81.2	24.9	18.6	3.4	2.8	48.4	42.0	21.4	17.9
1,2-Dichloroethane	5	3.0	2.5 U	2 U	1 U	1 U	1 U	2 U	2 U	1.6	1.0 U
1,1-Dichloroethene	7	447	344	140	129	5.9	4.2	202	179	145	131
1,4-Dioxane	15 (c)	298	351	99.8	97.0	17.2	13.8	81.8	90.9	78.2	74.5
1,1,1-Trichloroethane	200	95.7	65.4	232	191	1 U	1 U	5.1	2 U	5.3	5.5
Trichloroethene	5	3.2	2.5 U	2 U	1.4	1 U	1 U	2 U	2 U	1 U	1 U
Vinyl chloride	2	3.6	3.4	2 U	1 U	1 U	1 U	2 U	2 U	1 U	1 U

Notes:

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

Only detected VOC concentrations are provided.

All concentrations are in micrograms per liter (µg/L).

Results shown in **bold** exceed the cleanup standard.

b/ All cleanup standards, except for 1,4-dioxane, are equal to the Maryland Generic Numeric Cleanup Standards for Groundwater, Type I and II Aquifers, from the State of Maryland Interim Final Guidance (October 2018). Accessed May 27, 2020:
<https://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/MDE%20Soil%20and%20Groundwater%20Cleanup%20Standards%202010-2018%20Interim%20Final%20Update%203-2.pdf>

c/ Numeric cleanup standard from WSP's October 2, 2015, Response Action Plan, Revision 2.

Table 8

**Historical Groundwater Sample Results - Recovery Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)**

Well ID	Zone	Sample Date	VOCs (µg/L)		
			1,1-DCA	1,1-DCE	1,4-Dioxane
Groundwater Cleanup Standard (c)			2.8	7	15 (d)
RW-1S	Shallow	12/7/2016	468	957	1,420
		5/1/2017	711	1,210	1,370
		8/31/2017	192	434	586
		11/14/2017	196	544	580
		5/30/2018	93	381	377
		11/7/2018	105	458	467
		5/21/2019	89.1	384	374
		11/19/2019	77.4	348	299
		5/13/2020	98.2	447	298
		11/22/2020	81.2	344	351
		% ND	0%	0%	0%
		Min D	77.4	344	298
		Max D	711	1,210	1,420
		Mean D	211.1	550.7	612.2
% Decline	89%	72%	75%		
Trend	Decreasing	Decreasing	Decreasing		
RW-2S	Shallow	12/6/2016	198	971	1,190
		5/1/2017	95.7	622	949
		8/31/2017	71.7	390	482
		11/14/2017	83.5	401	549
		5/30/2018	33.0	203	200
		11/7/2018	29.1	177	200
		5/21/2019	36.5	244	448
		11/19/2019	22.4	132	111
		5/13/2020	24.9	140	99.8
		11/22/2020	18.6	129	97.0
		% ND	0%	0%	0%
		Min D	18.6	129	97
		Max D	198	971	1,190
		Mean D	61.3	340.9	432.6
% Decline	91%	87%	92%		
Trend	Decreasing	Decreasing	Decreasing		

Table 8

**Historical Groundwater Sample Results - Recovery Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)**

Well ID	Zone	Sample Date	VOCs (µg/L)		
			1,1-DCA	1,1-DCE	1,4-Dioxane
Groundwater Cleanup Standard (c)			2.8	7	15 (d)
RW-3S	Shallow	12/6/2016	4.6	7.2	5.9
		5/1/2017	1.0 U	1.2	3.8
		8/31/2017	1.0 U	1.7	5.9
		11/14/2017	1.8	1.8	10.6
		5/30/2018	1.9	2.6	10.4
		11/7/2018	2.1	2.6	12.4
		5/21/2019	2.1	2.7	15.2
		11/19/2019	2.9	4.7	16.6
		5/12/2020	3.4	5.9	17.2
		11/22/2020	2.8	4.2	13.8
		% ND	20%	0%	0%
		Min D	1.8	1.2	3.8
		Max D	4.6	7.2	17.2
		Mean D	2.7	3.5	11.2
% Decline	39%	42%	20%		
Trend	<i>Increasing</i>	<i>Increasing</i>	<i>Increasing</i>		
RW-1D	Deep	12/6/2016	4.4	39.3	34.4
		5/1/2017	10.4	88.9	51.9
		8/31/2017	15.7	99.7	52.8
		11/14/2017	30.4	174	65.5
		5/30/2018	77.1	392	139
		11/7/2018	78.1	363	155
		5/21/2019	50.8	224	112
		11/19/2019	49.9	240	89.7
		5/12/2020	48.4	202	81.8
		11/22/2020	42	179	90.9
		% ND	0%	0%	0%
		Min D	4.4	39.3	34.4
		Max D	78.1	392	155
		Mean D	40.7	200.2	87.3
% Decline	46%	54%	41%		
Trend	<i>NT</i>	<i>NT</i>	<i>Increasing</i>		

Table 8

**Historical Groundwater Sample Results - Recovery Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)**

Well ID	Zone	Sample Date	VOCs (µg/L)		
			1,1-DCA	1,1-DCE	1,4-Dioxane
Groundwater Cleanup Standard (c)			2.8	7	15 (d)
RW-2D	Deep	12/6/2016	64	257	206
		5/1/2017	56.6	486	214
		8/31/2017	42.4	306	149
		11/14/2017	44	295	172
		5/30/2018	24.9	175	106
		11/7/2018	25.4	185	99.8
		5/21/2019	16.9	115	72.7
		11/19/2019	21.6	149	85.5
		5/12/2020	21.4	145	78.2
		11/22/2020	17.9	131	74.5
		% ND	0%	0%	0%
		Min D	16.9	115	72.7
		Max D	64	486	214
		Mean D	33.5	224.4	125.8
% Decline	72%	73%	65%		
Trend	<i>Decreasing</i>	<i>Decreasing</i>	<i>Decreasing</i>		

Notes:

- a/ Select constituents are presented above, see Appendix E for complete analytical data.
- b/ VOC = volatile organic compound; DCA = dichloroethane; DCE = dichloroethene;
U = compound not detected above reported limit; % = percent; ND = non-detect; min = minimum;
max = maximum; D = detection; NT = no trend.
All concentrations are in micrograms per liter (µg/L).
Results shown in **bold** exceed the cleanup standard.
- c/ All cleanup standards, except for 1,4-dioxane, are equal to the Maryland Generic Numeric Cleanup Standards for Groundwater, Type I and II Aquifers, from the State of Maryland Interim Final Guidance (October 2018). Accessed May 27, 2020:
<https://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/MDE%20Soil%20and%20Groundwater%20Cleanup%20Standards%2010-2018%20Interim%20Final%20Update%203-2.pdf>
- d/ Numeric cleanup standard from WSP's October 2, 2015, Response Action Plan, Revision 2.

Table 9

**Groundwater Sample Trend Evaluation
Former Kop-Flex Facility
Hanover, Maryland (a, b)**

Well ID	1,1-DCA		1,1-DCE		1,4-Dioxane	
	Trend	% Change	Trend	% Change	Trend	% Change
Shallow Monitoring Wells						
MW-1	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>
MW-3	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	78%
MW-4	NT	76%	Decreasing	86%	NT	74%
MW-5R	<i>NA</i>	72%	<i>NT</i>	81%	<i>NT</i>	87%
MW-9	<i>NT</i>	44%	NT	46%	NT	73%
MW-16	NT	80%	Decreasing	96%	Decreasing	94%
MW-18	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	96%
MW-20	Increasing	0%	NT	5%	Increasing	22%
MW-38R	NT	22%	<i>NA</i>	<i>NA</i>	NT	35%
MW-39	<i>NA</i>	<i>NA</i>	<i>NA</i>	71%	<i>NA</i>	67%
MW-42	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NT</i>	32%
MW-43	Decreasing	86%	Decreasing	82%	Decreasing	82%
MW-44	NT	80%	<i>NT</i>	82%	<i>NT</i>	73%
Deep Monitoring Wells						
MW-1D	Decreasing	97%	Decreasing	96%	NT	95%
MW-16D	Decreasing	54%	Decreasing	50%	Decreasing	48%
MW-21D	<i>NA</i>	93%	Decreasing	93%	Decreasing	91%
MW-22D	<i>NA</i>	80%	Decreasing	81%	Decreasing	80%
MW-23D	NT	33%	NT	49%	Decreasing	45%
MW-27D	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>	72%
MW-40D	<i>NA</i>	84%	Decreasing	97%	<i>NA</i>	89%
MW-41D	<i>NA</i>	<i>NA</i>	<i>NA</i>	55%	<i>NT</i>	64%
Shallow Recovery Wells						
RW-1S	Decreasing	89%	Decreasing	72%	Decreasing	75%
RW-2S	Decreasing	91%	Decreasing	87%	Decreasing	92%
RW-3S	Increasing	39%	Increasing	42%	Increasing	20%
Deep Recovery Wells						
RW-1D	NT	46%	NT	54%	Increasing	41%
RW-2D	Decreasing	72%	Decreasing	73%	Decreasing	65%

average % decline
DCA DCE Dioxane
58% 69% 68%

average % decline
DCA DCE Dioxane
74% 74% 73%

average % decline
DCA DCE Dioxane
73% 67% 62%

average % decline
DCA DCE Dioxane
59% 64% 53%

Bold indicates most recent sample greater than Maximum Contaminant Level (MCL)

Italics indicates most recent sample non-detect

Orange shading indicates increasing trend

Green shading indicates decreasing trend

Notes:

- a/ Mann-Kendall statistical evaluation conducted on VOCs with equal to or greater than 50% detection at individual monitoring wells with 4 or more sample results; 95% confidence limit used for statistical calculation.
NT = no trend; NA = not analyzed; VOC = volatile organic compound;
DCA = dichloroethane; DCE = dichloroethene.
- b/ Percent changes calculated using the historical maximum concentration and the most recent sampling data; 1/2 of the method detection limit for non-detect values; 0% change reflects concentration increases.

Table 10

**May 2020 Foulant Characterization Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)**

<u>Sampling ID</u>	<u>Sampling Location</u>	<u>DRO</u>	<u>DRO - SGT</u>	<u>HEM</u>	<u>HEM - SGT</u>	<u>TOC</u>	<u>Fulvic Acid</u>	<u>Humic Acid</u>
MW-01	Shallow Background MW	0.1 U	0.1 U	5.2 U	5.2 U	0.91	1.7	0.23 J
MW-27D	Deep Background MW	0.12	0.1 U	5.2 U	5.2 U	0.83	1.7	0.79
MW-100 (b)	Deep Background MW	0.11	0.1 U	5.2 U	5.2 U	1.3	1.8	0.20 J
VSP-1S	Combined Shallow RW Discharge	0.1 U	0.1 U	5.4 U	5.4 U	1.3	2.2	0.66
VSP-1D	Combined Deep RW Discharge	0.1 U	0.1 U	5.4 U	5.4 U	0.61	2.0	0.66
VSP-100 (c)	Combined Deep RW Discharge	0.1 U	0.1 U	5.3 U	5.3 U	0.50	1.5	0.33 J
T-1100	Lead Resin Vessel Effluent	0.1 U	0.1 U	5.4 U	5.4 U	0.24 J	1.6	0.33 J
VSP-4	System Effluent	0.1 U	0.1 U	5.2 U	5.2 U	6.6	0.88	8.7

Notes:

- a/ MW = monitoring well; RW = recovery well; DRO = diesel range organics; SGT = silica gel treatment; HEM = hexane extractable material;
 TOC = total organic carbon; U = result is below method detection limit; J = result is below method calibration limit, but above method detection limit.
 All concentrations are in milligrams per liter (mg/L).
- b/ Duplicate of sample collected from well MW-27D.
- c/ Duplicate of sample collected from VSP-1D sample port.

Table 11

**July 2020 Foulant Characterization Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)**

<u>Sampling ID</u>	<u>Sampling Location</u>	<u>TOC</u>	<u>DOC</u>
VSP-1S	Combined Shallow RW Discharge	0.86 J	1.3
VSP-1D	Combined Deep RW Discharge	0.5 U	0.92 J
VSP-1200	Lead Resin Vessel Effluent	0.5 U	0.53 J
VSP-4	System Effluent	0.5 U	0.53 J
VSP-100 (b)	System Effluent	0.5 U	0.51 J
Condensate	Condensate from resin steam regeneration	9.2	9.0

Notes:

a/ RW = recovery well; TOC = total organic carbon; DOC = dissolved organic carbon; U = result is below method detection limit;

J = result is below method calibration limit, but above method detection limit.

All concentrations are in milligrams per liter (mg/L).

b/ Duplicate of sample collected from VSP-4 sample port.

Table 12

**December 2020 Treatment System Metals Sampling Results
Former Kop-Flex Facility Site
Hanover, Maryland (a, b)**

Sample ID: Sample Location:	VSP-2 After EQ tank & before bag filters	VSP-3 After bag filters & before resin	T-1200 Lead Ef Between resin vessels	Effluent VSP-4 After resin; System discharge
Analyte Name				
Dissolved Metals (µg/L; EPA Method 200.8)				
Aluminum	129	120	185	100 U
Copper	4.8	4.8	11.7	2.2
Iron	100 U	100 U	100 U	100 U
Lead	1.0 U	1.0 U	1.0 U	1.0 U
Nickel	14.5	14.5	14.8	17.5
Zinc	25.8	26.2	41.1	25.1
Total Metals (µg/L; EPA Method 200.8)				
Aluminum	135	126	182	100 U
Copper	5.5	5.6	16.4	3.7
Iron	100 U	100 U	100 U	100 U
Lead	1.0 U	1.0 U	1.0 U	1.0 U
Nickel	15.0	14.8	14.8	17.0
Zinc	40.1	24.5	59.5	26.3
Hardness (mg/L; SM 2340B)				
Hardness	7.8	7.8	7.7	8.0

Notes:

a/ µg/L = micrograms per liter; mg/L = milligrams per liter; EPA = US Environmental Protection Agency;

SM = Standard Method; U = non-detect.

b/ All samples were collected on December 15, 2020.

Table 13

Well Construction
Former Kop-Flex Facility
Hanover, Maryland (a)

Well ID	Installation Date	Well Diameter (inches)	TOC Elevation (ft amsl)	Total Depth (ft btoc)	Screen Length / Open Borehole (feet)	Screen Interval			
						Depth (ft btoc)	Elevation (ft amsl)		
<i>Shallow (Unconfined) Zone</i>									
MW-01	03/30/96	2	113.6	36	10.0	26.0	- 36.0	87.60	- 77.60
MW-03	04/01/96	2	113.6	21.7	10.0	11.7	- 21.7	101.90	- 91.90
MW-04	04/02/96	2	124.4	34.3	10.0	24.3	- 34.3	100.10	- 90.10
MW-5R	09/13/16	2	123.5	33	10.0	23.0	- 33.0	100.50	- 90.50
MW-09	12/10/96	2	125.1	25	10.0	15.0	- 25.0	110.10	- 100.10
MW-16	08/2010	2	124.0	50.2	10.0	40.2	- 50.2	83.80	- 73.80
MW-18	11/30/11	2	125.1	58.3	10.0	48.3	- 58.3	76.80	- 66.80
MW-20	11/29/11	2	125.4	50	5.0	45.0	- 50.0	80.40	- 75.40
MW-38R	09/13/16	2	125.4	33.3	10.0	23.3	- 33.3	102.10	- 92.10
MW-39	04/04/14	2	124.6	54	10.0	44.0	- 54.0	80.60	- 70.60
MW-42	09/13/16	2	125.9	33.2	10.0	23.2	- 33.2	102.70	- 92.70
MW-43	09/14/16	2	122.8	47.5	10.0	37.5	- 47.5	85.30	- 75.30
MW-44	09/15/16	2	127.1	42.8	10.0	32.8	- 42.8	94.30	- 84.30
<i>Deep (Confined) Zone</i>									
MW-1D	12/03/11	2	129.4	112.2	10.0	102.2	- 112.2	27.20	- 17.20
MW-16D	12/19/10	2	124.1	100.2	10.0	90.2	- 100.2	33.90	- 23.90
MW-21D	03/22/12	2	126.3	106	10.0	96.0	- 106.0	30.30	- 20.30
MW-22D	03/23/12	2	128.9	114.9	10.0	104.9	- 114.9	24.00	- 14.00
MW-23D	03/21/12	2	125.2	95	10.0	85.0	- 95.0	40.20	- 30.20
MW-27D	08/27/13	2	117.2	117.3	10.0	107.3	- 117.3	9.90	- -0.10
MW-40D	09/21/16	2	124.1	95.8	10.0	85.8	- 95.8	38.30	- 28.30
MW-41D	09/23/16	2	127.1	164	10.0	154.0	- 164.0	-26.90	- -36.90
RECOVERY WELLS									
<i>Shallow (Unconfined) Zone</i>									
RW-1S	09/12/16	1	122.9	62	35.0	27.0	- 62.0	95.90	- 60.90
RW-2S	09/11/16	1	123.5	60.5	35.0	25.5	- 60.5	98.00	- 63.00
RW-3S	09/11/16	1	125.4	62	35.0	27.0	- 62.0	98.40	- 63.40
<i>Deep (Confined) Zone</i>									
RW-1D	09/09/16	1	126.9	126	40.0	86.0	- 126.0	40.90	- 0.90
RW-2D	08/31/16	1	127.4	145.6	40.0	105.6	- 145.6	21.80	- -18.20

Notes:

a/ TOC = top of casing; ft amsl = feet above mean sea level; ft btoc = feet below top of casing.

Table 14

**Historical Water Level Measurements in
Monitoring Wells and Recovery Well Piezometers
Former Kop-Flex Facility
Hanover, Maryland (a)**

Well ID	Zone	TOC elevation	12/7/2016 (b)		2/1/2017 (b)		3/21/2017		4/7/2017		4/10/2017		4/13/2017	
			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	Depth to Water	Groundwater Elevation
MW-01	Shallow	129.8	NM	-	15.98	113.82	16.16	113.64	15.93	113.87	15.95	113.85	15.94	113.86
MW-03	Shallow	113.6	6.78	106.82	6.83	106.77	6.79	106.81	6.41	107.19	6.76	106.84	6.91	106.69
MW-04	Shallow	124.4	12.28	112.12	11.14	113.26	11.17	113.23	11.05	113.35	11.09	113.31	11.06	113.34
MW-5R	Shallow	123.5	15.87	107.63	13.49	110.01	15.98	107.52	16.15	107.35	16.38	107.12	16.45	107.05
MW-09	Shallow	125.1	10.84	114.26	11.30	113.80	11.51	113.59	11.41	113.69	11.41	113.69	11.51	113.59
MW-16	Shallow	124.0	10.92	113.08	11.12	112.88	11.66	112.34	11.74	112.26	11.81	112.19	11.82	112.18
MW-18	Shallow	125.1	20.77	104.33	20.84	104.26	22.85	102.25	22.85	102.25	23.11	101.99	23.18	101.92
MW-20	Shallow	125.4	NM	-	12.24	113.16	12.5	112.90	12.33	113.07	12.31	113.09	12.3	113.10
MW-38R	Shallow	125.4	15.58	109.82	15.76	109.64	19.64	105.76	19.6	105.80	20.81	104.59	19.81	105.59
MW-39	Shallow	124.6	NM	-	20.96	103.64	22.64	101.96	22.55	102.05	21.86	102.74	23	101.60
MW-42	Shallow	125.9	16.18	109.72	16.26	109.64	19.28	106.62	19.33	106.57	19.52	106.38	19.49	106.41
MW-43	Shallow	122.8	19.25	103.55	19.31	103.49	20.68	102.12	20.31	102.49	20.61	102.19	21.81	100.99
MW-44	Shallow	127.1	14.93	112.17	15.25	111.85	17.7	109.40	17.08	110.02	17.18	109.92	17.35	109.75
MW-45	Shallow	126.7	NM	-	NM	-	14.1	112.62	13.85	112.87	13.85	112.87	13.85	112.87
RW-1S	Shallow	122.9	12.96	109.94	13.17	109.73	12.96	109.94	20.36	102.54	20.6	102.30	20.56	102.34
RW-2S	Shallow	123.5	14.12	109.38	14.02	109.48	28.55	94.95	28.88	94.62	29.81	93.69	29	94.50
RW-3S	Shallow	125.4	14.29	111.11	14.24	111.16	20.34	105.06	23.49	101.91	23.59	101.81	23.69	101.71
MW-1D	Deep	129.4	42.81	86.59	42.22	87.18	56.15	73.25	56.06	73.34	56.22	73.18	56.44	72.96
MW-16D	Deep	124.1	34.91	89.19	34.72	89.38	37.55	86.55	37.6	86.50	38.02	86.08	38.1	86.00
MW-21D	Deep	126.3	37.8	88.50	37.59	88.71	47.12	79.18	47.26	79.04	47.57	78.73	47.61	78.69
MW-22D	Deep	128.9	40.78	88.07	40.49	88.36	43.28	85.57	43.3	85.55	43.59	85.26	43.76	85.09
MW-23D	Deep	125.2	35.14	90.06	34.74	90.46	36.33	88.87	36.29	88.91	36.72	88.48	36.81	88.39
MW-24D	Deep	129.1	46.3	82.80	45.73	83.37	47.44	81.66	47.71	81.39	48	81.10	48.16	80.94
MW-27D	Deep	117.2	29.66	87.54	26.78	90.42	27.73	89.47	27.68	89.52	28.18	89.02	28.3	88.90
MW-40D	Deep	124.1	35.14	88.96	34.94	89.16	37.19	86.91	37.51	86.59	37.98	86.12	37.98	86.12
MW-41D	Deep	127.1	41.98	85.12	41.44	85.66	44.00	83.10	44.06	83.04	44.48	82.62	44.56	82.54
MW-46D	Deep	124.8	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-
RW-1D	Deep	126.9	38.53	88.37	38.19	88.71	58.69	68.21	59.02	67.88	59.06	67.84	59.02	67.88
RW-2D	Deep	127.4	42.31	85.09	41.62	85.78	68.82	58.58	68.51	58.89	68.39	59.01	68.78	58.62

Table 14

**Historical Water Level Measurements in
Monitoring Wells and Recovery Well Piezometers
Former Kop-Flex Facility
Hanover, Maryland (a)**

Well ID	Zone	TOC elevation	4/17/2017		5/1/2017		5/8/2017		8/31/2017		10/25/2017		11/14/2017	
			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	Depth to Water	Groundwater Elevation
MW-01	Shallow	129.8	15.90	113.90	15.92	113.88	15.81	113.99	15.49	114.31	NA	NA	14.17	115.63
MW-03	Shallow	113.6	6.90	106.70	6.96	106.64	6.87	106.73	7.59	106.01	NA	NA	7.27	106.33
MW-04	Shallow	124.4	11.13	113.27	10.95	113.45	10.91	113.49	10.66	113.74	NA	NA	10.97	113.43
MW-5R	Shallow	123.5	16.47	107.03	16.60	106.90	16.60	106.90	16.90	106.60	NA	NA	16.78	106.72
MW-09	Shallow	125.1	11.48	113.62	11.41	113.69	11.34	113.76	11.09	114.01	NA	NA	NA	NA
MW-16	Shallow	124.0	12.08	111.92	11.99	112.01	11.81	112.19	11.90	112.10	NA	NA	12.00	112.00
MW-18	Shallow	125.1	23.19	101.91	23.30	101.80	23.28	101.82	24.63	100.47	NA	NA	24.41	100.69
MW-20	Shallow	125.4	13.38	112.02	13.01	112.39	12.24	113.16	12.39	113.01	NA	NA	11.98	113.42
MW-38R	Shallow	125.4	19.84	105.56	19.94	105.46	19.96	105.44	20.16	105.24	NA	NA	19.93	105.47
MW-39	Shallow	124.6	23.01	101.59	23.05	101.55	23.00	101.60	24.51	100.09	NA	NA	23.93	100.67
MW-42	Shallow	125.9	19.55	106.35	19.68	106.22	19.67	106.23	19.95	105.95	NA	NA	19.82	106.08
MW-43	Shallow	122.8	20.92	101.88	21.11	101.69	20.90	101.90	21.73	101.07	NA	NA	21.66	101.14
MW-44	Shallow	127.1	17.23	109.87	17.31	109.79	17.27	109.83	17.18	109.92	NA	NA	17.00	110.10
MW-45	Shallow	126.7	13.75	112.97	13.67	113.05	13.60	113.12	13.20	113.52	NA	NA	13.80	112.92
RW-1S	Shallow	122.9	20.60	102.30	20.80	102.10	20.79	102.11	21.49	101.41	NA	NA	21.98	100.92
RW-2S	Shallow	123.5	29.14	94.36	29.61	93.89	29.74	93.76	32.10	91.40	NA	NA	30.76	92.74
RW-3S	Shallow	125.4	23.73	101.67	24.32	101.08	24.46	100.94	26.20	99.20	NA	NA	28.47	96.93
MW-1D	Deep	129.4	56.37	73.03	56.40	73.00	56.29	73.11	56.70	72.70	58.17	71.23	58.09	71.31
MW-16D	Deep	124.1	37.94	86.16	37.98	86.12	38.08	86.02	41.1	83.00	40.71	83.39	40.63	83.47
MW-21D	Deep	126.3	47.58	78.72	47.54	78.76	47.61	78.69	56.7	69.60	50.61	75.69	50.53	75.77
MW-22D	Deep	128.9	43.73	85.12	43.82	85.03	43.81	85.04	46.71	82.14	46.74	82.11	46.25	82.60
MW-23D	Deep	125.2	36.61	88.59	36.71	88.49	36.77	88.43	39.9	85.30	39.21	85.99	39.04	86.16
MW-24D	Deep	129.1	48.29	80.81	48.35	80.75	48.37	80.73	55.82	73.28	52.15	76.95	51.99	77.11
MW-27D	Deep	117.2	28.03	89.17	28.21	88.99	28.21	88.99	31.11	86.09	30.52	86.68	30.34	86.86
MW-40D	Deep	124.1	37.85	86.25	38.01	86.09	38.04	86.06	41.00	83.10	40.75	83.35	40.50	83.60
MW-41D	Deep	127.1	44.43	82.67	44.61	82.49	44.62	82.48	49.18	77.92	47.94	79.16	47.71	79.39
MW-46D	Deep	124.8	NM	-	NM	-	NM	-	NM	-	NM	-	NM	-
RW-1D	Deep	126.9	59.26	67.64	58.88	68.02	58.99	67.91	60.23	66.67	62.62	64.28	63.62	63.28
RW-2D	Deep	127.4	68.63	58.77	68.70	58.70	68.44	58.96	70.11	57.29	68.90	58.50	68.95	58.45

Table 14

**Historical Water Level Measurements in
Monitoring Wells and Recovery Well Piezometers
Former Kop-Flex Facility
Hanover, Maryland (a)**

Well ID	Zone	TOC elevation	5/30/2018		11/7/2018		5/21/2019		11/19/2019		5/12/2020		11/22/2020	
			Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater	
			Depth to Water	Elevation	Depth to Water	Elevation	Depth to Water	Elevation	Depth to Water	Elevation	Depth to Water	Elevation	Depth to Water	Elevation
MW-01	Shallow	129.8	15.52	114.28	13.99	115.81	13.98	115.82	16.47	113.33	15.67	114.13	15.58	114.22
MW-03	Shallow	113.6	7.17	106.43	6.43	107.17	7.08	106.52	7.02	106.58	6.09	107.51	6.1	107.50
MW-04	Shallow	124.4	10.19	114.21	9.16	115.24	8.80	115.60	11.07	113.33	11.00	113.40	10.85	113.55
MW-5R	Shallow	123.5	15.89	107.61	15.51	107.99	15.74	107.76	16.61	106.89	16.55	106.95	15.84	107.66
MW-09	Shallow	125.1	10.78	114.32	9.16	115.94	9.61	115.49	12.00	113.10	11.57	113.53	11.23	113.87
MW-16	Shallow	124.0	11.76	112.24	10.96	113.04	9.37	114.63	12.43	111.57	11.66	112.34	11.68	112.32
MW-18	Shallow	125.1	23.80	101.30	23.13	101.97	22.97	102.13	21.12	103.98	23.10	102.00	23.80	101.30
MW-20	Shallow	125.4	12.15	113.25	11.74	113.66	10.64	114.76	12.98	112.42	12.57	112.83	12.11	113.29
MW-38R	Shallow	125.4	19.35	106.05	18.67	106.73	19.13	106.27	19.83	105.57	19.03	106.37	19.25	106.15
MW-39	Shallow	124.6	23.72	100.88	23.09	101.51	23.00	101.60	23.94	100.66	23.04	101.56	23.52	101.08
MW-42	Shallow	125.9	19.16	106.74	18.55	107.35	18.91	106.99	19.44	106.46	18.85	107.05	NM	-
MW-43	Shallow	122.8	20.47	102.33	20.60	102.20	21.46	101.34	22.04	100.76	20.98	101.82	21.91	100.89
MW-44	Shallow	127.1	16.32	110.78	15.78	111.32	15.91	111.19	17.24	109.86	16.30	110.80	16.52	110.58
MW-45	Shallow	126.7	12.98	113.74	12.00	114.72	11.75	114.97	14.55	112.17	NM	-	13.61	113.11
RW-1S	Shallow	122.9	22.88	100.02	23.97	98.93	26.42	96.48	28.64	94.26	29.16	93.74	28.13	94.77
RW-2S	Shallow	123.5	28.37	95.13	27.48	96.02	31.16	92.34	31.70	91.80	33.33	90.17	35.31	88.19
RW-3S	Shallow	125.4	26.91	98.49	24.39	101.01	22.10	103.30	23.24	102.16	22.85	102.55	26.72	98.68
MW-1D	Deep	129.4	58.03	71.37	57.22	72.18	56.55	72.85	59.49	69.91	57.17	72.23	59.91	69.49
MW-16D	Deep	124.1	40.37	83.73	39.33	84.77	38.30	85.80	40.99	83.11	38.67	85.43	NM	-
MW-21D	Deep	126.3	50.38	75.92	49.61	76.69	48.38	77.92	50.75	75.55	48.50	77.80	50.37	75.93
MW-22D	Deep	128.9	46.30	82.55	35.31	93.54	44.02	84.83	46.20	82.65	44.05	84.80	46.55	82.30
MW-23D	Deep	125.2	38.87	86.33	37.72	87.48	36.88	88.32	39.40	85.80	37.16	88.04	39.22	85.98
MW-24D	Deep	129.1	50.94	78.16	50.72	78.38	49.67	79.43	51.12	77.98	48.80	80.30	53.02	76.08
MW-27D	Deep	117.2	30.20	87.00	29.17	88.03	28.15	89.05	30.68	86.52	28.64	88.56	30.62	86.58
MW-40D	Deep	124.1	40.44	83.66	39.60	84.50	38.50	85.60	41.16	82.94	38.59	85.51	40.97	83.13
MW-41D	Deep	127.1	47.56	79.54	46.56	80.54	45.42	81.68	48.50	78.60	45.28	81.82	48.65	78.45
MW-46D	Deep	124.8	37.37	87.40	32.65	92.12	35.47	89.30	37.90	86.87	35.73	89.04	37.72	87.05
RW-1D	Deep	126.9	62.75	64.15	62.97	63.93	62.44	64.46	64.86	62.04	NM	-	NM	-
RW-2D	Deep	127.4	69.21	58.19	68.34	59.06	68.19	59.21	71.36	56.04	69.35	58.05	69.72	57.68

Notes:

a/ Vertical datum is NAVD-88.

TOC = top of casing; NM = not measured; NA = not available because the well had not been installed; - = value not calculated.

Light gray shading denotes wells screened in the shallow (unconfined) zone; blue shading denotes wells screened in the deep (confined) zone.

Continuous pumping of the groundwater recovery well system started on March 29, 2017.

Water levels from both shallow and deep recovery wells were measured in piezometers co-located with the wells.

b/ Water level measurements representative of non-pumping conditions in the aquifer system.

Table 15

2020 Monitoring Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Parameters	Groundwater Cleanup Standards (µg/L) (b)	Shallow Wells													
		Well ID: MW-01 Date Sampled: 5/13/20	MW-03 5/12/20	MW-04 5/13/20 11/22/20		MW-5R 5/12/20 11/22/20		MW-09 5/13/20 11/22/20		MW-16 5/13/20 Duplicate (d) 11/22/20		MW-18 5/12/20 11/22/20			
VOCs															
Chloroethane	2,100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	10.9	25 U	20 U	1 U	1 U
1,1-Dichloroethane	2.8	1 U	1 U	58.6	62.0	1.8	1 U	2.6	2.5	394	425	1,560	1 U	1 U	
1,2-Dichloroethane	5	1 U	1 U	1.3	1.6	1 U	1 U	1 U	1 U	5 U	5 U	20 U	1 U	1 U	
1,1-Dichloroethene	7	1 U	1 U	149	141	1.7	1 U	50.5	56.4	571	594	1,130	1 U	1 U	
1,4-Dioxane	15 (c)	2 U	2 U	84.6	151	13.4	2.2	18.7	25.7	39.2	35	84.2	2 U	2 U	
Methyl tert-butyl ether	20	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	5 U	5 U	20 U	1 U	1 U	
1,1,1-Trichloroethane	200	1 U	1 U	1.4	1 U	1 U	1 U	1 U	1 U	487	518	2,060	1 U	1 U	
Trichloroethene	5	1 U	1 U	1.2	1.2	1 U	1 U	1 U	1 U	10.7	12	20 U	1 U	1 U	

Table 15

2020 Monitoring Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Parameters	Groundwater Cleanup Standards (µg/L) (b)	Shallow Wells										
		MW-20		MW-38R		MW-39		MW-42		MW-43		MW-44
		Date Sampled:	5/13/20	11/22/20	5/12/20	11/22/20	5/12/20	11/22/20	5/12/20	1/6/21	5/12/20	11/22/20
VOCs												
Chloroethane	2,100	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	2.8	188	205	6.2	6.5	1 U	1 U	1 U	1 U	3.8	2.9	3.0
1,2-Dichloroethane	5	7.7	7.5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	7	232	272	1 U	1 U	1 U	1 U	1 U	1 U	46.3	31.8	4.1
1,4-Dioxane	15 (c)	1,000	1,260	40.8	40.9	2 U	2 U	11.2	13.2	49	42.7	17.7
Methyl tert-butyl ether	20	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	3.4	1 U	1 U
1,1,1-Trichloroethane	200	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	11.9
Trichloroethene	5	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Table 15

2020 Monitoring Well Sampling Results
Former Kop-Flex Facility
Hanover, Maryland (a)

Parameters	Groundwater Cleanup Standards (µg/L) (b)	Deep Wells														
		MW-1D		MW-16D			MW-21D		MW-22D		MW-23D		MW-27D	MW-40D		MW-41D
Well ID:		5/12/20	11/22/20	5/13/20	12/8/20	Duplicate (d)	5/12/20	11/22/20	5/12/20	11/22/20	5/13/20	11/22/20	5/13/20	5/12/20	11/22/20	5/12/20
Chloroethane	2,100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	2.8	2.6	3.1	29.1	25.9	24.4	1 U	1 U	1 U	1 U	35.2	26.3	1 U	1 U	1 U	1 U
1,2-Dichloroethane	5	1 U	1 U	1.9	1.6	1.7	1 U	1 U	1 U	1 U	1.8	1.2	1 U	1 U	1 U	1 U
1,1-Dichloroethene	7	16.5	17.6	145	127	108	13.6	7.8	6.2	7.1	142	106	1 U	1 U	1 U	1 U
1,4-Dioxane	15 (c)	12.8	16.9	130	105	118	7.6	5.1	4.6	4.9	112	96.7	2 U	2 U	2 U	1 U
Methyl tert-butyl ether	20	1 U	1 U	1 U	1 U	1 U	2.9	3.0	1 U	1 U	1 U	1 U	1 U	3.1	1 U	1 U
1,1,1-Trichloroethane	200	1 U	1 U	11.7	10.1	8.9	1 U	1 U	1 U	1 U	13.6	1 U	1 U	1 U	1 U	1 U
Trichloroethene	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:

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

Only detected VOC concentrations are provided.

All concentrations are in micrograms per liter (µg/L).

Results shown in **bold** exceed the cleanup standard.

b/ All cleanup standards, except for 1,4-dioxane, are equal to the Maryland Generic Numeric Cleanup Standards for Groundwater, Type I and II Aquifers, from the State of Maryland Interim Final Guidance (October 2018). Accessed May 27, 2020:

[https://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/MD E%20Soil%20and%20Groundwater%20Cleanup%20Standards%202010-2018%20Interim%20Final%20Update%203-2.pdf](https://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/MD%20Soil%20and%20Groundwater%20Cleanup%20Standards%202010-2018%20Interim%20Final%20Update%203-2.pdf)

c/ Numeric cleanup standard from WSP's October 2, 2015, Response Action Plan, Revision 2.

d/ Duplicate sample listed to the right of the original sample.

Table 16

**Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)**

Well ID	Zone	Sample Date	VOCs (µg/l)		
			1,1-DCA	1,1-DCE	1,4-Dioxane
Groundwater Quality Standard (c)			2.8	7	15 (d)
MW-1	Shallow	5/14/2020	1.0 U	1.0 U	1.0 U
		% ND	100%	100%	100%
		Min D	NA	NA	NA
		Max D	NA	NA	NA
		Mean D	NA	NA	NA
		% Decline	NA	NA	NA
		Trend	NA	NA	NA
MW-3	Shallow	12/8/2016	1.0 U	1.0 U	4.6
		5/1/2017	1.0 U	1.0 U	2.0 U
		5/30/2018	1.0 U	1.0 U	2.0 U
		5/21/2019	1.0 U	1.0 U	2.0 U
		5/12/2020	1.0 U	1.0 U	2.0 U
		% ND	100%	100%	80%
		Min D	NA	NA	4.6
Max D	NA	NA	4.6		
Mean D	NA	NA	4.6		
% Decline	NA	NA	78%		
Trend	NA	NA	NA		
MW-4	Shallow	12/7/2016	259	1,020	576
		5/2/2017	103	459	252
		11/15/2017	29.2	151	121
		5/30/2018	33.3	153	92.7
		11/7/2018	23.3	89.9	1.0 U
		5/21/2019	57.7	142	111
		11/19/2019	45.1	126	94.2
		5/13/2020	58.6	149	84.6
		11/22/2020	62.0	141	151
		% ND	0%	0%	11%
		Min D	23.3	89.9	84.6
		Max D	259	1,020	576
		Mean D	74.6	270.1	185.3
% Decline	76%	86%	74%		
Trend	NT	Decreasing	NT		

Table 16

**Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)**

Well ID	Zone	Sample Date	VOCs (µg/l)		
			1,1-DCA	1,1-DCE	1,4-Dioxane
Groundwater Quality Standard (c)			2.8	7	15 (d)
MW-5R	Shallow	12/7/2016	1.0 U	1.0 U	16.5
		5/1/2017	1.4	1.4	16.5
		11/15/2017	1.6	2.5	11.0
		5/30/2018	1.8	2.7	11.5
		11/7/2018	1.0 U	1.3	2.0 U
		5/21/2019	1.0 U	1.0 U	7.6
		11/19/2019	1.0 U	1.0 U	6.8
		5/12/2020	1.8	1.7	13.4
		11/22/2020	1.0 U	1.0 U	2.2
		% ND	56%	44%	11%
		Min D	1.4	1.3	2.2
		Max D	1.8	2.7	16.5
		Mean D	1.7	1.9	10.7
% Decline	72%	81%	87%		
Trend	NA	NT	NT		
MW-9	Shallow	12/8/2016	4.5	104	95.5
		5/2/2017	2.9	63.8	20.8
		11/15/2017	3.1	60.2	32.4
		5/30/2018	2.2	49.2	23.4
		11/7/2018	4.5	75.9	37.4
		5/21/2019	3.6	70.8	32.8
		11/19/2019	2.6	48.7	24.4
		5/13/2020	2.6	50.5	18.7
		11/22/2020	2.5	56.4	25.7
		% ND	0%	0%	0%
		Min D	2.2	48.7	18.7
		Max D	4.5	104	95.5
		Mean D	3.2	64.4	34.6
% Decline	44%	46%	73%		
Trend	NT	NT	NT		

Table 16

**Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)**

Well ID	Zone	Sample Date	VOCs (µg/l)		
			1,1-DCA	1,1-DCE	1,4-Dioxane
Groundwater Quality Standard (c)			2.8	7	15 (d)
MW-16	Shallow	12/8/2016	6,420	26,200	1,450
		5/2/2017	7,910	10,500	971
		11/15/2017	7,110	7,740	836
		5/30/2018	6,250	4,690	636
		11/7/2018	7,360	7,800	866
		5/22/2019	343	1,160	1,230
		11/19/2019	608	1,440	81.9
		5/13/2020	394	571	39.2
		5/13/2020 (e)	425	594	35
		11/22/2020	1,560	1,130	84.2
		% ND	0%	0%	0%
		Min D	343	571	35
		Max D	7,910	26,200	1,450
		Mean D	3,838	6,183	622.9
% Decline	80%	96%	94%		
Trend	NT	Decreasing	Decreasing		
MW-18	Shallow	12/7/2016	1.0 U	1.0 U	2.0 U
		5/1/2017	1.0 U	1.0 U	2.0 U
		11/15/2017	1.0 U	1.0 U	24.9
		5/30/2018	1.0 U	1.0 U	2.0 U
		11/7/2018	1.0 U	1.0 U	2.0 U
		5/21/2019	1.0 U	1.0 U	2.0 U
		11/19/2019	1.0 U	1.0 U	2.0 U
		5/12/2020	1.0 U	1.0 U	2.0 U
		11/22/2020	1.0 U	1.0 U	2.0 U
		% ND	100%	100%	89%
		Min D	NA	NA	24.9
		Max D	NA	NA	24.9
		Mean D	NA	NA	24.9
		% Decline	NA	NA	96%
Trend	NA	NA	NA		

Table 16

**Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)**

Well ID	Zone	Sample Date	VOCs (µg/l)		
			1,1-DCA	1,1-DCE	1,4-Dioxane
Groundwater Quality Standard (c)			2.8	7	15 (d)
MW-20	Shallow	12/9/2016	99.7	173	767
		5/2/2017	161	286	967
		11/15/2017	136	223	969
		5/30/2018	115	205	966
		11/7/2018	145	233	986
		5/21/2019	157	226	1,620
		11/19/2019	175	244	1,220
		5/13/2020	188	232	1,000
		11/22/2020	205	272	1,260
		% ND	0%	0%	0%
		Min D	99.7	173	767
		Max D	205	286	1,620
		Mean D	153.5	232.7	1,084
% Decline	0%	5%	22%		
Trend	Increasing	NT	Increasing		
MW-38R	Shallow	12/9/2016	3.8	1.0 U	18.3
		5/1/2017	6.0	1.0 U	42.6
		11/15/2017	8.3	1.0 U	62.5
		5/30/2018	4.3	1.0 U	40.7
		11/7/2018	6.9	1.0 U	39.4
		5/21/2019	4.7	1.0 U	43.2
		11/19/2019	7.7	1.0 U	51.5
		5/12/2020	6.2	1.0 U	40.8
		11/22/2020	6.5	1.0 U	40.9
		% ND	0%	100%	0%
		Min D	3.8	NA	18.3
		Max D	8.3	NA	62.5
		Mean D	6	NA	42.2
% Decline	22%	NA	35%		
Trend	NT	NA	NT		

Table 16

**Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)**

Well ID	Zone	Sample Date	VOCs (µg/l)		
			1,1-DCA	1,1-DCE	1,4-Dioxane
Groundwater Quality Standard (c)			2.8	7	15 (d)
MW-39	Shallow	12/7/2016	1.0 U	1.7	2.5
		5/1/2017	1.0 U	1.1	3.0
		11/15/2017	1.0 U	0.6 J	2.2
		5/30/2018	1.0 U	1.0 U	2.0 U
		11/7/2018	1.0 U	1.0 U	2.0 U
		5/21/2019	1.0 U	1.0 U	2.0 U
		11/19/2019	1.0 U	1.0 U	2.0 U
		5/12/2020	1.0 U	1.0 U	2.0 U
		11/22/2020	1.0 U	1.0 U	2.0 U
		% ND	100%	67%	67%
		Min D	NA	0.6	2.2
		Max D	NA	1.7	3
		Mean D	NA	1.1	2.6
% Decline	NA	71%	67%		
Trend	NA	NA	NA		
MW-42	Shallow	12/7/2016	1.0 U	1.0 U	4.8
		5/1/2017	1.0 U	1.0 U	8.0
		11/15/2017	1.0 U	1.0 U	19.3
		5/30/2018	1.0 U	1.0 U	7.4
		11/7/2018	1.0 U	1.0 U	10.3
		5/21/2019	1.0 U	1.0 U	10.6
		11/19/2019	1.0 U	1.0 U	5.6
		5/12/2020	1.0 U	1.0 U	11.2
		1/6/2021	1.0 U	1.0 U	13.2
		% ND	100%	100%	0%
		Min D	NA	NA	4.8
		Max D	NA	NA	19.3
		Mean D	NA	NA	10
% Decline	NA	NA	32%		
Trend	NA	NA	NT		

Table 16

**Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)**

Well ID	Zone	Sample Date	VOCs (µg/l)		
			1,1-DCA	1,1-DCE	1,4-Dioxane
Groundwater Quality Standard (c)			2.8	7	15 (d)
MW-43	Shallow	12/7/2016	15.9	171	237
		5/1/2017	21.3	177	206
		11/15/2017	15.9	159	165
		5/30/2018	5.9	68	57.6
		11/7/2018	13.8	118	107
		5/21/2019	5.2	53.9	52.0
		11/19/2019	4.3	48.5	55.2
		5/12/2020	3.8	46.3	49.0
		11/22/2020	2.9	31.8	42.7
		% ND	0%	0%	0%
		Min D	2.9	31.8	42.7
		Max D	21.3	177	237
		Mean D	9.9	97.1	107.9
% Decline	86%	82%	82%		
Trend	<i>Decreasing</i>	<i>Decreasing</i>	<i>Decreasing</i>		
MW-44	Shallow	12/7/2016	1.0 U	1.0 U	2.0 U
		5/1/2017	6.6	5.9	49.1
		5/30/2018	1.4	1.4	8.4
		5/21/2019	14.9	22.4	64.4
		5/13/2020	3.0	4.1	17.7
		% ND	20%	20%	20%
		Min D	1.4	1.4	8.4
		Max D	14.9	22.4	64.4
		Mean D	6.5	8.5	34.9
		% Decline	80%	82%	73%
		Trend	<i>NT</i>	<i>NT</i>	<i>NT</i>

Table 16

**Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)**

Well ID	Zone	Sample Date	VOCs (µg/l)		
			1,1-DCA	1,1-DCE	1,4-Dioxane
Groundwater Quality Standard (c)			2.8	7	15 (d)
MW-1D	Deep	1/2/2017	72	375	236
		5/3/2017	105	407	329
		11/15/2017	80	277	243
		5/30/2018	14.9	71.4	64.4
		11/7/2018	7.1	38.8	2.0 U
		5/21/2019	2.1	13.7	12.8
		11/19/2019	3.4	17.7	17.9
		5/18/2020	2.6	16.5	12.8
		11/22/2020	3.1	17.6	16.9
		% ND	0%	0%	11%
		Min D	2.1	13.7	12.8
		Max D	105	407	329
		Mean D	32.2	137.2	116.6
		% Decline	97%	96%	95%
Trend	Decreasing	Decreasing	NT		
MW-16D	Deep	12/8/2016	56.6	254	202
		5/2/2017	43.7	235	182
		11/15/2017	29.7	179	192
		5/30/2018	26.4	180	153
		5/30/2018 (e)	27.1	188	156
		11/7/2018	27.5	161	158
		11/7/2018 (e)	28.9	180	135
		5/22/2019	28.5	172	148
		5/22/2019 (e)	27.6	151	146
		11/19/2019	25.6	133	140
		11/19/2019 (e)	26.6	142	119
		5/13/2020	29.1	145	130
		12/8/2020	25.9	127	105
		% ND	0%	0%	0%
		Min D	25.6	127	105
		Max D	56.6	254	202
Mean D	31	172.8	151.2		
% Decline	54%	50%	48%		
Trend	Decreasing	Decreasing	Decreasing		

Table 16

**Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)**

Well ID	Zone	Sample Date	VOCs (µg/l)		
			1,1-DCA	1,1-DCE	1,4-Dioxane
Groundwater Quality Standard (c)			2.8	7	15 (d)
MW-21D	Deep	12/16/2016	2.6	23.4	18.6
		5/1/2017	6.9	111	57.5
		11/15/2017	2.0	14.4	18.5
		5/30/2018	1.0	38.8	32.2
		11/7/2018	1.0 U	30.0	18.0
		5/21/2019	1.0 U	9.9	8.4
		11/19/2019	1.0 U	4.1	4.1
		5/18/2020	1.0 U	13.6	7.6
		11/22/2020	1.0 U	7.8	5.1
		% ND	56%	0%	0%
		Min D	1	4.1	4.1
		Max D	6.9	111	57.5
		Mean D	3.1	28.1	18.9
% Decline	93%	93%	91%		
Trend	NA	Decreasing	Decreasing		
MW-22D	Deep	12/7/2016	2.5	31.5	24.5
		5/2/2017	2.5	36.9	24.6
		11/15/2017	1.72	24.4	19.6
		5/30/2018	1.0 U	13.1	7.9
		11/7/2018	1.0 U	9.7	2.0 U
		5/21/2019	1.0 U	6.3	5.1
		11/19/2019	1.0 U	5.6	4.9
		5/18/2020	1.0 U	6.2	4.6
		11/22/2020	1.0 U	7.1	4.9
		% ND	67%	0%	11%
		Min D	1.72	5.6	4.6
		Max D	2.5	36.9	24.6
		Mean D	2.2	15.6	12
% Decline	80%	81%	80%		
Trend	NA	Decreasing	Decreasing		

Table 16

**Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)**

Well ID	Zone	Sample Date	VOCs (µg/l)		
			1,1-DCA	1,1-DCE	1,4-Dioxane
Groundwater Quality Standard (c)			2.8	7	15 (d)
MW-23D	Deep	1/2/2017	26.4	140	151
		5/1/2017	39.1	208	177
		11/15/2017	31.1	179	158
		5/30/2018	30.5	172	148
		11/7/2018	36.2	185	146
		5/21/2019	18.5	96.4	70.7
		11/19/2019	22.7	107	109
		5/13/2020	35.2	142	112
		11/22/2020	26.3	106	96.7
		% ND	0%	0%	0%
		Min D	18.5	96.4	70.7
		Max D	39.1	208	177
		Mean D	29.6	148.4	129.8
% Decline	33%	49%	45%		
Trend	NT	NT	Decreasing		
MW-27D	Deep	12/7/2016	1.0 U	1.0 U	2.0 U
		5/1/2017	1.0 U	1.0 U	3.6
		5/30/2018	1.0 U	1.0 U	2.0 U
		5/21/2019	1.0 U	1.0 U	2.0 U
		5/13/2020	1.0 U	1.0 U	2.0 U
		% ND	100%	100%	80%
		Min D	NA	NA	3.6
		Max D	NA	NA	3.6
		Mean D	NA	NA	3.6
		% Decline	NA	NA	72%
Trend	NA	NA	NA		

Table 16

**Historical Groundwater Sample Results - Monitoring Wells
Former Kop-Flex Facility
Hanover, Maryland (a, b)**

Well ID	Zone	Sample Date	VOCs (µg/l)		
			1,1-DCA	1,1-DCE	1,4-Dioxane
Groundwater Quality Standard (c)			2.8	7	15 (d)
MW-40D	Deep	12/9/2016	2.9	18.1	9.4
		5/1/2017	3.1	17.4	8.5
		11/15/2017	0.9 J	5.2	5.2
		5/30/2018	1.0 U	2.9	2.0 U
		11/7/2018	1.0 U	4.4	2.7
		5/21/2019	1.0 U	1.0 U	2.0 U
		11/19/2019	1.0 U	1.0 U	2.0 U
		5/18/2020	1.0 U	1.0 U	2.0 U
		11/22/2020	1.0 U	1.0 U	2.0 U
		% ND	67%	44%	56%
		Min D	0.9	2.9	2.7
		Max D	3.1	18.1	9.4
Mean D	2.3	9.6	6.5		
% Decline	84%	97%	89%		
Trend	NA	Decreasing	NA		
MW-41D	Deep	12/16/2016	1.0 U	1.0 U	2.8
		5/17/2017	1.0 U	1.0 U	2.4
		5/30/2018	1.0 U	1.1	2.0 U
		5/21/2019	1.0 U	1.0 U	2.1
		5/18/2020	1.0 U	1.0 U	2.0 U
		% ND	100%	80%	40%
		Min D	NA	1.1	2.1
		Max D	NA	1.1	2.8
		Mean D	NA	1.1	2.4
		% Decline	NA	55%	64%
		Trend	NA	NA	NT

Notes:

- a/ Select constituents are presented above, see Appendix E for complete analytical data.
- b/ VOC = volatile organic compound; DCA = dichloroethane; DCE = dichloroethene;
 J = estimated concentration; U = compound not detected above reported limit; % = percent;
 ND = non-detect; min = minimum; max = maximum; D = detection; NT = no trend; NA = not applicable.
 All concentrations are in micrograms per liter (µg/L).
 Results shown in **bold** exceed the cleanup standard.
- c/ All cleanup standards, except for 1,4-dioxane, are equal to the Maryland Generic Numeric Cleanup Standards for Groundwater, Type I and II Aquifers, from the State of Maryland Interim Final Guidance (October 2018). Accessed May 27, 2020:
<https://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Documents/www.mde.state.md.us/assets/document/MDE%20Soil%20and%20Groundwater%20Cleanup%20Standards%202010-2018%20Interim%20Final%20Update%203-2.pdf>
- d/ Numeric cleanup standard from WSP's October 2, 2015, Response Action Plan, Revision 2.
- e/ Duplicate of previous sample.

APPENDIX

A LAB REPORTS FOR SYSTEM SAMPLING



Project Name: Kop Flex
PSS Project No.: 20010902

January 23, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **20010902**
Project Name: Kop Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04



Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20010902**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on February 13, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop Flex
PSS Project No.: 20010902

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 01/09/2020 at 11:10 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20010902-001	Effluent VSP-4	WASTE WATER	01/09/20 09:30

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C** Results Pending Final Confirmation.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail** The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J** The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL** This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND** Not Detected at or above the reporting limit.
- RL** PSS Reporting Limit.
- U** Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20010902

Sample ID: Effluent VSP-4 **Date/Time Sampled: 01/09/2020 09:30** **PSS Sample ID: 20010902-001**
Matrix: WASTE WATER **Date/Time Received: 01/09/2020 11:10**

Total Metals + Hardness Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	2.7	ug/L	1.0		1	01/10/20	01/14/20 14:38	1064
Lead	ND	ug/L	1.0		1	01/10/20	01/10/20 16:44	1064
Nickel	13.1	ug/L	1.00		1	01/10/20	01/14/20 14:38	1064
Zinc	25.3	ug/L	20.0		1	01/10/20	01/14/20 14:38	1064
Hardness (Ca & Mg)	20	mg/L	0.66		1	01/10/20	01/10/20 16:44	1064

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Chloromethane	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Vinyl Chloride	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Bromomethane	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Chloroethane	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Methylene Chloride	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Chloroform	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Benzene	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Trichloroethene	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Bromodichloromethane	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Toluene	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Tetrachloroethylene	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Dibromochloromethane	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Chlorobenzene	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Ethylbenzene	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20010902

Sample ID: Effluent VSP-4 **Date/Time Sampled: 01/09/2020 09:30** **PSS Sample ID: 20010902-001**
Matrix: WASTE WATER **Date/Time Received: 01/09/2020 11:10**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Bromoform	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	01/09/20	01/09/20 17:57	1011
Surrogate(s)	Recovery		Limits					
<i>Dibromofluoromethane</i>	97	%	87-120		1	01/09/20	01/09/20 17:57	1011
<i>4-Bromofluorobenzene</i>	103	%	85-147		1	01/09/20	01/09/20 17:57	1011
<i>Toluene-D8</i>	100	%	88-110		1	01/09/20	01/09/20 17:57	1011

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	01/09/20	01/09/20 18:08	1061

Biochemical Oxygen Demand Analytical Method: SM 5210B -2011

Start time: 09-Jan-20 15:20

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		01/14/20	01/14/20 14:50	4005

Case Narrative

Project Name: Kop Flex

PSS Project No.: 20010902

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

20010902: Analyses associated with analyst code 4005 were performed by Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

General Comments:

Per client, do not report dissolved metals results.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

Lab Chronology

Project Name: Kop Flex
 PSS Project No.: 20010902

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	20010902-001	W	79932	171030	01/10/2020 10:17	01/10/2020 16:44
	79932-1-BKS	BKS	79932-1-BKS	W	79932	171030	01/10/2020 10:17	01/10/2020 16:23
	79932-1-BLK	BLK	79932-1-BLK	W	79932	171030	01/10/2020 10:17	01/10/2020 16:19
	20200108HRP001 S	MS	20010809-001 S	W	79932	171030	01/10/2020 10:17	01/10/2020 16:32
	Covanta S	MS	20010915-002 S	W	79932	171030	01/10/2020 10:17	01/10/2020 18:42
	20200108HRP001 SD	MSD	20010809-001 S	W	79932	171030	01/10/2020 10:17	01/10/2020 16:36
	79932-1-BLK	Reanalysis	79932-1-BLK	W	79932	171115	01/10/2020 10:17	01/14/2020 14:16
	Effluent VSP-4	Reanalysis	20010902-001	W	79932	171115	01/10/2020 10:17	01/14/2020 14:38
EPA 200.8	79945-1-BKS	BKS	79945-1-BKS	W	79945	171032	01/10/2020 15:18	01/10/2020 18:55
	79945-1-BLK	BLK	79945-1-BLK	W	79945	171032	01/10/2020 15:18	01/10/2020 18:51
	Effluent S	MS	20010827-001 S	W	79945	171032	01/10/2020 15:18	01/10/2020 19:04
	Effluent SD	MSD	20010827-001 S	W	79945	171032	01/10/2020 15:18	01/10/2020 19:08
	79945-1-BKS	Reanalysis	79945-1-BKS	W	79945	171117	01/10/2020 15:18	01/14/2020 15:14
	79945-1-BLK	Reanalysis	79945-1-BLK	W	79945	171117	01/10/2020 15:18	01/14/2020 14:16
EPA 624 .1	Effluent VSP-4	Initial	20010902-001	W	79926	170977	01/09/2020 09:24	01/09/2020 17:57
	79926-1-BKS	BKS	79926-1-BKS	W	79926	170977	01/09/2020 09:24	01/09/2020 10:32
	79926-1-BLK	BLK	79926-1-BLK	W	79926	170977	01/09/2020 09:24	01/09/2020 12:25
	BSSE-200107 S	MS	20010706-001 S	W	79926	170977	01/09/2020 09:24	01/09/2020 14:11
	BSSE-200107 SD	MSD	20010706-001 S	W	79926	170977	01/09/2020 09:24	01/09/2020 14:33
SM 2540D -2011	Effluent VSP-4	Initial	20010902-001	W	170988	170988	01/09/2020 18:08	01/09/2020 18:08
	170988-1-BLK	BLK	170988-1-BLK	W	170988	170988	01/09/2020 18:08	01/09/2020 18:08
	13623-Eff-1/20 D	MD	20010813-001 D	W	170988	170988	01/09/2020 18:08	01/09/2020 18:08
SM 5210B -2011	Effluent VSP-4	Initial	20010902-001	W	171303	171303	01/14/2020 14:50	01/14/2020 14:50

Project Name Kop Flex
PSS Project No.: 20010902

Analytical Method: SM 2540D -2011

Seq Number: 170988 Matrix: Water
MB Sample Id: 170988-1-BLK

Parameter	MB Result	LOD	RL	Units	Flag
Suspended Solids	ND	0.5000	1.000	mg/L	

Analytical Method: EPA 200.8

Seq Number: 171030 Matrix: Water
MB Sample Id: 79932-1-BLK LCS Sample Id: 79932-1-BKS

Prep Method: E200.8_PREP
Date Prep: 01/10/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	5.738	40.00	43.21	108	85-115	ug/L	
Lead	<1.000	40.00	41.43	104	85-115	ug/L	
Nickel	<1.000	40.00	45.30	113	85-115	ug/L	
Zinc	<20.00	200	223.9	112	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 171032 Matrix: Water
MB Sample Id: 79945-1-BLK LCS Sample Id: 79945-1-BKS

Prep Method: E200.8_PREP
Date Prep: 01/10/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	38.62	97	85-115	ug/L	
Lead	<1.000	40.00	43.86	110	85-115	ug/L	
Nickel	<1.000	40.00	40.51	101	85-115	ug/L	
Zinc	<20.00	200	204	102	85-115	ug/L	

Project Name Kop Flex
PSS Project No.: 20010902

Analytical Method: EPA 624 .1

Seq Number: 170977

MB Sample Id: 79926-1-BLK

Matrix: Water

LCS Sample Id: 79926-1-BKS

Prep Method: E624PREP

Date Prep: 01/09/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	46.09	92	54-148	ug/L	
Chloromethane	<1.000	50.00	46.74	93	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	47.82	96	5-195	ug/L	
Bromomethane	<1.000	50.00	50.86	102	15-185	ug/L	
Chloroethane	<1.000	50.00	44.14	88	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	45.25	91	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	46.00	92	50-150	ug/L	
Methylene Chloride	<1.000	50.00	48.14	96	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	47.83	96	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	45.69	91	70-130	ug/L	
Chloroform	<1.000	50.00	45.71	91	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	45.59	91	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	46.14	92	70-130	ug/L	
Benzene	<1.000	50.00	45.19	90	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	44.51	89	70-130	ug/L	
Trichloroethene	<1.000	50.00	45.10	90	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	46.70	93	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	47.15	94	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	44.61	89	25-175	ug/L	
Toluene	<1.000	50.00	45.42	91	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	44.23	88	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	44.73	89	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	44.81	90	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	44.35	89	70-135	ug/L	
Chlorobenzene	<1.000	50.00	44.99	90	65-135	ug/L	
Ethylbenzene	<1.000	50.00	47.68	95	60-140	ug/L	
Bromoform	<1.000	50.00	42.00	84	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	43.83	88	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	47.50	95	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	46.41	93	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	47.07	94	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	103		99		87-120	%
4-Bromofluorobenzene	101		102		85-147	%
Toluene-D8	101		100		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

1 *CLIENT: <u>WSP</u> *OFFICE LOC: <u>Herndon, VA</u>					PSS Work Order #: <u>20016902</u>			PAGE <u>1</u> OF <u>1</u>									
*PROJECT MGR: <u>Eric Johnson</u> *PHONE NO.: <u>(703) 709-6500</u>					Matrix Codes: SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe												
EMAIL: <u>eric.johnson@wsp.com</u> FAX NO.: ()					CONTAINERS	Analysis/Method Required		HCl		HNO ₃							
*PROJECT NAME: <u>Kop Flex</u> PROJECT NO.: <u>31401545.010/04</u>						C = COMP		*		VCCs (624)		BOD					
SITE LOCATION: <u>Hanover, MD</u> P.O. NO.:						G = GRAB		TSS		Total metals + hardness		Dissolved metals					
SAMPLER(S): <u>Shannon Burke</u> DW CERT NO.:																	
2	LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No.	SAMPLE TYPE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	REMARKS
	1	<u>Effluent VSP-4</u>	<u>1/9/20</u>	<u>0930</u>	<u>WW</u>	<u>7</u>	<u>G</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Zn, Cu, Ni, Pb</u>
Relinquished By: (1)		Date	Time	Received By:				*Requested TAT (One TAT per COC)				# of Coolers: <u>1 TB: 1.4°C</u>					
<u>Shannon Burke</u>		<u>1/9/20</u>	<u>1110</u>	<u>[Signature]</u>				<input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other				Custody Seal: <u>ABS</u>					
Relinquished By: (2)		Date	Time	Received By:				Data Deliverables Required:				Ice Present: <u>YES</u> Temp: <u>0.1-0.3°C</u>					
								<input type="checkbox"/> COA <input type="checkbox"/> QC <input type="checkbox"/> SUMM <input type="checkbox"/> CLP LIKE OTHER				Shipping Carrier: <u>Client</u>					
Relinquished By: (3)		Date	Time	Received By:				Special Instructions: <u>Standard 10-day TAT, Lab to filter dissolved metals</u>									
Relinquished By: (4)		Date	Time	Received By:				DW COMPLIANCE?		EDD FORMAT TYPE		STATE RESULTS REPORTED TO:					
								YES <input type="checkbox"/>				<input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV OTHER					

Sample Receipt Checklist

Project Name: Kop Flex
PSS Project No.: 20010902

Client Name WSP USA - Herndon
Disposal Date 02/13/2020

Received By Thomas Wingate
Date Received 01/09/2020 11:10:00 AM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? N/A
Seal(s) Signed / Dated? N/A

Ice Present
Temp (deg C) .3
Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
Chain of Custody Yes

Sampler Name Shannon Burke
MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
Intact? Yes
Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
Total No. of Containers Received 7

Preservation

Total Metals (pH<2) Yes
Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
Orthophosphorus, filtered within 15 minutes of collection N/A
Cyanides (pH>12) N/A
Sulfide (pH>9) N/A
TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
TOX, TKN, NH3, Total Phos (pH<2) N/A
VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
Do VOA vials have zero headspace? Yes
624 VOC (Rcvd at least one unpreserved VOA vial) No
524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

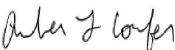
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 01/09/2020

PM Review and Approval:



Amber Confer

Date: 01/23/2020

Project Name: Kop Flex
PSS Project No.: 20010903

January 23, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **20010903**
Project Name: Kop Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04



Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20010903**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on February 13, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop Flex
PSS Project No.: 20010903

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 01/09/2020 at 11:10 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20010903-001	Effluent VSP-4	WASTE WATER	01/09/20 09:30
20010903-002	Influent VSP-1	GROUND WATER	01/09/20 09:10
20010903-003	TB-010920	WATER	01/09/20 00:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20010903

Sample ID: Effluent VSP-4 **Date/Time Sampled: 01/09/2020 09:30** **PSS Sample ID: 20010903-001**
Matrix: WASTE WATER **Date/Time Received: 01/09/2020 11:10**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

Qualifier(s): See Batch 171328 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	01/22/20	01/22/20 16:07	1045
Surrogate(s)	Recovery		Limits					
<i>Toluene-D8</i>	<i>104</i>	<i>%</i>	<i>80-120</i>		<i>1</i>	<i>01/22/20</i>	<i>01/22/20 16:07</i>	<i>1045</i>

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20010903

Sample ID: Influent VSP-1 **Date/Time Sampled: 01/09/2020 09:10** **PSS Sample ID: 20010903-002**
Matrix: GROUND WATER **Date/Time Received: 01/09/2020 11:10**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	01/11/20	01/11/20 13:27	1011
Benzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Bromochloromethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Bromodichloromethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Bromoform	ND	ug/L	5.0		1	01/11/20	01/11/20 13:27	1011
Bromomethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
2-Butanone (MEK)	ND	ug/L	10		1	01/11/20	01/11/20 13:27	1011
Carbon Disulfide	ND	ug/L	10		1	01/11/20	01/11/20 13:27	1011
Carbon tetrachloride	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Chlorobenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Chloroethane	3.5	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Chloroform	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Chloromethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Cyclohexane	ND	ug/L	10		1	01/11/20	01/11/20 13:27	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	01/11/20	01/11/20 13:27	1011
Dibromochloromethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
1,1-Dichloroethane	44	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
1,2-Dichloroethane	1.5	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
cis-1,2-Dichloroethene	1.2	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
1,1-Dichloroethene	220	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Ethylbenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	01/11/20	01/11/20 13:27	1011
Isopropylbenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Methyl Acetate	ND	ug/L	10		1	01/11/20	01/11/20 13:27	1011
Methylcyclohexane	ND	ug/L	10		1	01/11/20	01/11/20 13:27	1011
Methylene chloride	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20010903

Sample ID: Influent VSP-1 **Date/Time Sampled: 01/09/2020 09:10** **PSS Sample ID: 20010903-002**
Matrix: GROUND WATER **Date/Time Received: 01/09/2020 11:10**
 TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	01/11/20	01/11/20 13:27	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Naphthalene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Styrene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Tetrachloroethene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Toluene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
1,1,1-Trichloroethane	19	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Trichloroethene	1.2	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	01/11/20	01/11/20 13:27	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Vinyl chloride	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
m&p-Xylene	ND	ug/L	2.0		1	01/11/20	01/11/20 13:27	1011
o-Xylene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:27	1011
Surrogate(s)	Recovery		Limits					
4-Bromofluorobenzene	99 %		87-109		1	01/11/20	01/11/20 13:27	1011
Dibromofluoromethane	101 %		93-111		1	01/11/20	01/11/20 13:27	1011
Toluene-D8	101 %		91-109		1	01/11/20	01/11/20 13:27	1011

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B
 Qualifier(s): See Batch 171328 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	110	ug/L	5.0		5	01/22/20	01/22/20 16:29	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	103 %		80-120		5	01/22/20	01/22/20 16:29	1045

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20010903

Sample ID: TB-010920 **Date/Time Sampled: 01/09/2020 00:00** **PSS Sample ID: 20010903-003**
Matrix: WATER **Date/Time Received: 01/09/2020 11:10**
TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	01/11/20	01/11/20 13:04	1011
Benzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Bromochloromethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Bromodichloromethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Bromoform	ND	ug/L	5.0		1	01/11/20	01/11/20 13:04	1011
Bromomethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
2-Butanone (MEK)	ND	ug/L	10		1	01/11/20	01/11/20 13:04	1011
Carbon Disulfide	ND	ug/L	10		1	01/11/20	01/11/20 13:04	1011
Carbon tetrachloride	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Chlorobenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Chloroethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Chloroform	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Chloromethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Cyclohexane	ND	ug/L	10		1	01/11/20	01/11/20 13:04	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	01/11/20	01/11/20 13:04	1011
Dibromochloromethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Ethylbenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	01/11/20	01/11/20 13:04	1011
Isopropylbenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Methyl Acetate	ND	ug/L	10		1	01/11/20	01/11/20 13:04	1011
Methylcyclohexane	ND	ug/L	10		1	01/11/20	01/11/20 13:04	1011
Methylene chloride	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20010903

Sample ID: TB-010920 **Date/Time Sampled: 01/09/2020 00:00** **PSS Sample ID: 20010903-003**
Matrix: WATER **Date/Time Received: 01/09/2020 11:10**
 TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	01/11/20	01/11/20 13:04	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Naphthalene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Styrene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Tetrachloroethene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Toluene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Trichloroethene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	01/11/20	01/11/20 13:04	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Vinyl chloride	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
m&p-Xylene	ND	ug/L	2.0		1	01/11/20	01/11/20 13:04	1011
o-Xylene	ND	ug/L	1.0		1	01/11/20	01/11/20 13:04	1011
Surrogate(s) Recovery Limits								
4-Bromofluorobenzene	104	%	87-109		1	01/11/20	01/11/20 13:04	1011
Dibromofluoromethane	99	%	93-111		1	01/11/20	01/11/20 13:04	1011
Toluene-D8	100	%	91-109		1	01/11/20	01/11/20 13:04	1011

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B
 Qualifier(s): See Batch 171328 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	01/22/20	01/22/20 15:44	1045
Surrogate(s) Recovery Limits								
Toluene-D8	106	%	80-120		1	01/22/20	01/22/20 15:44	1045

Case Narrative

Project Name: Kop Flex

PSS Project No.: 20010903

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

Analytical:

1,4-Dioxane by GC/MS - SIM

Batch: 171328

Laboratory control spike/laboratory spike duplicate (LCS/LCSD) Relative Percent Difference (RPD) exceedances identified; see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop Flex
 PSS Project No.: 20010903

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SW-846 8260 B	Influent VSP-1	Initial	20010903-002	W	79949	171020	01/11/2020 08:59	01/11/2020 13:27
	TB-010920	Initial	20010903-003	W	79949	171020	01/11/2020 08:59	01/11/2020 13:04
	79949-1-BKS	BKS	79949-1-BKS	W	79949	171020	01/11/2020 08:59	01/11/2020 09:54
	79949-1-BLK	BLK	79949-1-BLK	W	79949	171020	01/11/2020 08:59	01/11/2020 11:25
	DW-2-20-01-10 S	MS	20011004-001 S	W	79949	171020	01/11/2020 08:59	01/11/2020 15:20
	DW-2-20-01-10 SD	MSD	20011004-001 S	W	79949	171020	01/11/2020 08:59	01/11/2020 15:43
SW-846 8260 B-Modified	Effluent VSP-4	Initial	20010903-001	W	80100	171328	01/22/2020 12:44	01/22/2020 16:07
	Influent VSP-1	Initial	20010903-002	W	80100	171328	01/22/2020 12:44	01/22/2020 16:29
	TB-010920	Initial	20010903-003	W	80100	171328	01/22/2020 12:44	01/22/2020 15:44
	80100-1-BKS	BKS	80100-1-BKS	W	80100	171328	01/22/2020 12:44	01/22/2020 13:36
	80100-1-BLK	BLK	80100-1-BLK	W	80100	171328	01/22/2020 12:44	01/22/2020 15:22
	80100-1-BSD	BSD	80100-1-BSD	W	80100	171328	01/22/2020 12:44	01/22/2020 14:03

Project Name Kop Flex
PSS Project No.: 20010903

Analytical Method: SW-846 8260 B

Seq Number: 171020

MB Sample Id: 79949-1-BLK

Matrix: Water

LCS Sample Id: 79949-1-BKS

Prep Method: SW5030B

Date Prep: 01/11/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<10.00	50.00	45.03	90	55-120	ug/L	
Benzene	<1.000	50.00	44.48	89	87-123	ug/L	
Bromochloromethane	<1.000	50.00	43.93	88	74-136	ug/L	
Bromodichloromethane	<1.000	50.00	46.11	92	83-125	ug/L	
Bromoform	<5.000	50.00	44.06	88	72-129	ug/L	
Bromomethane	<1.000	50.00	46.41	93	45-167	ug/L	
2-Butanone (MEK)	<10.00	50.00	43.67	87	45-136	ug/L	
Carbon Disulfide	<10.00	50.00	44.58	89	87-123	ug/L	
Carbon tetrachloride	<1.000	50.00	45.38	91	79-133	ug/L	
Chlorobenzene	<1.000	50.00	44.49	89	87-127	ug/L	
Chloroethane	<1.000	50.00	43.78	88	81-122	ug/L	
Chloroform	<1.000	50.00	44.46	89	76-129	ug/L	
Chloromethane	<1.000	50.00	45.27	91	59-121	ug/L	
Cyclohexane	<10.00	50.00	48.57	97	83-122	ug/L	
1,2-Dibromo-3-chloropropane	<5.000	50.00	45.58	91	63-140	ug/L	
Dibromochloromethane	<1.000	50.00	43.70	87	73-139	ug/L	
1,2-Dibromoethane	<1.000	50.00	46.19	92	80-127	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	47.18	94	82-129	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	46.27	93	88-127	ug/L	
Dichlorodifluoromethane	<1.000	50.00	43.05	86	70-131	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	45.89	92	84-129	ug/L	
1,1-Dichloroethane	<1.000	50.00	43.71	87	85-120	ug/L	
1,2-Dichloroethane	<1.000	50.00	44.27	89	86-125	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	44.80	90	86-126	ug/L	
1,1-Dichloroethene	<1.000	50.00	44.86	90	85-123	ug/L	
1,2-Dichloropropane	<1.000	50.00	46.80	94	83-120	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	44.17	88	81-125	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	44.43	89	79-121	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	46.52	93	87-120	ug/L	
Ethylbenzene	<1.000	50.00	47.30	95	82-128	ug/L	
2-Hexanone (MBK)	<5.000	50.00	48.05	96	56-116	ug/L	
Isopropylbenzene	<1.000	50.00	49.47	99	81-128	ug/L	
Methyl Acetate	<10.00	50.00	45.37	91	68-129	ug/L	
Methylcyclohexane	<10.00	50.00	48.33	97	84-127	ug/L	
Methylene chloride	<1.000	50.00	45.41	91	85-119	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	46.23	92	57-116	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	46.03	92	61-130	ug/L	
Naphthalene	<1.000	50.00	47.67	95	74-114	ug/L	
Styrene	<1.000	50.00	45.66	91	76-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	46.47	93	79-131	ug/L	
Tetrachloroethene	<1.000	50.00	44.64	89	85-131	ug/L	
Toluene	<1.000	50.00	44.89	90	82-127	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	50.06	100	79-123	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	50.66	101	78-123	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	44.47	89	87-125	ug/L	
Trichloroethene	<1.000	50.00	44.88	90	87-124	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	45.43	91	84-127	ug/L	
Trichlorofluoromethane	<5.000	50.00	43.88	88	85-130	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	46.86	94	81-132	ug/L	
Vinyl chloride	<1.000	50.00	46.98	94	66-133	ug/L	
m&p-Xylene	<2.000	100	95.35	95	78-126	ug/L	

Project Name Kop Flex
PSS Project No.: 20010903

Analytical Method: SW-846 8260 B

Seq Number: 171020

MB Sample Id: 79949-1-BLK

Matrix: Water

LCS Sample Id: 79949-1-BKS

Prep Method: SW5030B

Date Prep: 01/11/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	48.05	96	75-130	ug/L	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	
4-Bromofluorobenzene	103		101		87-109	%	
Dibromofluoromethane	99		98		93-111	%	
Toluene-D8	99		100		91-109	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 171328

MB Sample Id: 80100-1-BLK

Matrix: Water

LCS Sample Id: 80100-1-BKS

Prep Method: SW5030B

Date Prep: 01/22/20

LCSD Sample Id: 80100-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	26.98	90	34.09	114	50-150	24	20	ug/L	F
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units			
Toluene-D8	104		105		109		80-120	%			

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

1 *CLIENT: WSP		*OFFICE LOC. Herndon, VA		PSS Work Order #: 20010903				PAGE 1 OF 1	
*PROJECT MGR: Eric Johnson		*PHONE NO.: (703) 709-6500		Matrix Codes: SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe					
EMAIL: eric.johnson@wsp.com		FAX NO.: ()		No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used HCl HCl	Analysis/Method Required ③ *	1,4-dioxane (8108) VOCs (82603)	REMARKS
*PROJECT NAME: Kop Flex		PROJECT NO.: 31401545.010/04							
SITE LOCATION: Hanover, MD		P.O. NO.:							
SAMPLER(S): Shannon Burke		DW CERT NO.:							
LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)					
1	Effluent VSP-4	1/9/20	0930	WW	3	G	X		
2	Influent VSP-1	1/9/20	0910	GW	6	G	X	X	
3	TB-010920	1/9/20	—	—	4	—	X	X	
5 Relinquished By: (1)		Date	Time	Received By:		4 *Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			# of Coolers:
Relinquished By: (2)		Date	Time	Received By:		Data Deliverables Required: COA <input type="checkbox"/> QC <input type="checkbox"/> SUMM <input type="checkbox"/> CLP <input type="checkbox"/> LIKE <input type="checkbox"/> OTHER <input type="checkbox"/>			Custody Seal: ABS
Relinquished By: (3)		Date	Time	Received By:		Special Instructions: Standard 10-day TAT			Ice Present: PRES Temp: 6.1-6.8°C
Relinquished By: (4)		Date	Time	Received By:		DW COMPLIANCE? YES <input type="checkbox"/>			Shipping Carrier: Citicorp
						EDD FORMAT TYPE	STATE RESULTS REPORTED TO: MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER <input type="checkbox"/>		

6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED

Sample Receipt Checklist

Project Name: Kop Flex
 PSS Project No.: 20010903

Client Name WSP USA - Herndon
Disposal Date 02/13/2020

Received By Thomas Wingate
Date Received 01/09/2020 11:10:00 AM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? N/A
 Seal(s) Signed / Dated? N/A

Ice Present
 Temp (deg C) .3
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Shannon Burke
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 3
 Total No. of Containers Received 13

Preservation

Total Metals (pH<2) N/A
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) N/A
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

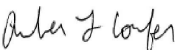
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 01/09/2020

PM Review and Approval:



Amber Confer
 Page 13 of 13

Date: 01/09/2020

Project Name: Kop Flex
PSS Project No.: 20012207

March 5, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **20012207**
Project Name: Kop Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04



Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20012207**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on February 26, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal

Laboratory Manager



Project Name: Kop Flex
PSS Project No.: 20012207

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 01/22/2020 at 12:15 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20012207-001	Effluent VSP-4	WASTE WATER	01/22/20 10:50

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20012207

Sample ID: Effluent VSP-4 **Date/Time Sampled: 01/22/2020 10:50** **PSS Sample ID: 20012207-001**
Matrix: WASTE WATER **Date/Time Received: 01/22/2020 12:15**

Dissolved Metals Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	3.6	ug/L	1.0		1	01/23/20	01/24/20 17:31	1064
Lead	ND	ug/L	1.0		1	01/23/20	01/24/20 17:31	1064
Nickel	13.3	ug/L	1.00		1	01/23/20	01/24/20 17:31	1064
Zinc	22.4	ug/L	20.0		1	01/23/20	01/24/20 17:31	1064

Case Narrative

Project Name: Kop Flex

PSS Project No.: 20012207

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Lab Chronology

Project Name: Kop Flex
 PSS Project No.: 20012207

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	20012207-001	W	80106	171411	01/23/2020 16:45	01/24/2020 17:31
	80106-1-BKS	BKS	80106-1-BKS	W	80106	171411	01/23/2020 16:45	01/24/2020 17:14
	80106-1-BLK	BLK	80106-1-BLK	W	80106	171411	01/23/2020 16:45	01/24/2020 17:09
	NPDES 1st Qtr 2020 S	MS	20012203-001 S	W	80106	171411	01/23/2020 16:45	01/24/2020 17:23
	NPDES 1st Qtr 2020 SD	MSD	20012203-001 S	W	80106	171411	01/23/2020 16:45	01/24/2020 17:27

Project Name Kop Flex
PSS Project No.: 20012207

Analytical Method: EPA 200.8

Seq Number: 171411

MB Sample Id: 80106-1-BLK

Matrix: Water

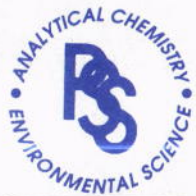
LCS Sample Id: 80106-1-BKS

Prep Method: E200.8_PREP

Date Prep: 01/23/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	37.46	94	85-115	ug/L	
Lead	<1.000	40.00	38.43	96	85-115	ug/L	
Nickel	<1.000	40.00	39.64	99	85-115	ug/L	
Zinc	<20.00	200	200.1	100	85-115	ug/L	

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

① *CLIENT: WSP		*OFFICE LOC. Herndon, VA		PSS Work Order #: 20012207			PAGE 1 OF 1																																								
*PROJECT MGR: Eric Johnson		*PHONE NO.: (703) 709-6500		Matrix Codes: SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe																																											
EMAIL: eric.johnson@wsp.com		FAX NO.: ()		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">CONTAINERS</td> <td style="width:5%;">No.</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">SAMPLE TYPE</td> <td>Preservatives Used</td> <td>HNO₃</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Analysis/Method Required</td> <td colspan="16" rowspan="3" style="text-align:center; vertical-align:middle;">③ * Dissolved metals</td> </tr> <tr> <td>C = COMP</td> </tr> <tr> <td>G = GRAB</td> </tr> </table>						CONTAINERS	No.	SAMPLE TYPE	Preservatives Used	HNO ₃															Analysis/Method Required	③ * Dissolved metals																C = COMP	G = GRAB
CONTAINERS	No.	SAMPLE TYPE	Preservatives Used								HNO ₃																																				
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*PROJECT NAME: Kop Flex		PROJECT NO.: 31401545.010/04																																													
SITE LOCATION: Hanover, MD		P.O. NO.:																																													
SAMPLER(S): Shannah Burke		DW CERT NO.:																																													
②																																															
LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)						REMARKS																																					
	VSP SUB																																														
1	Effluent VSP-4	1/22/20	1050	WW	1	6	X			Field Filtered																																					
⑤																																															
Relinquished By: (1)		Date	Time	Received By:		④ *Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			# of Coolers:																																						
Shannah Burke		1/22/20	215	[Signature]					Custody Seal: ABS																																						
Relinquished By: (2)		Date	Time	Received By:		Data Deliverables Required: COA QC SUMM CLP LIKE OTHER			Ice Present: PRES Temp: 33°C																																						
						<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____			Shipping Carrier: Client																																						
Relinquished By: (3)		Date	Time	Received By:		Special Instructions: Standard 10-day TAT																																									
Relinquished By: (4)		Date	Time	Received By:		DW COMPLIANCE? YES <input type="checkbox"/>		EDD FORMAT TYPE _____		STATE RESULTS REPORTED TO: MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER _____																																					

6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED

Sample Receipt Checklist

Project Name: Kop Flex
PSS Project No.: 20012207

Client Name WSP USA - Herndon
Disposal Date 02/26/2020

Received By Thomas Wingate
Date Received 01/22/2020 12:15:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? N/A
Seal(s) Signed / Dated? N/A

Ice Present
Temp (deg C) 3.3
Temp Blank Present No

Documentation

COC agrees with sample labels? Yes
Chain of Custody Yes

Sampler Name Shannon Burke
MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
Intact? Yes
Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
Total No. of Containers Received 1

Preservation


Total Metals (pH<2) N/A
Dissolved Metals, filtered within 15 minutes of collection (pH<2) Yes
Orthophosphorus, filtered within 15 minutes of collection N/A
Cyanides (pH>12) N/A
Sulfide (pH>9) N/A
TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
TOX, TKN, NH3, Total Phos (pH<2) N/A
VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) N/A
Do VOA vials have zero headspace? N/A
624 VOC (Rcvd at least one unpreserved VOA vial) N/A
524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: 
Thomas Wingate

Date: 01/22/2020

PM Review and Approval: 
Amber Confer

Date: 01/22/2020

Project Name: Kop Flex
PSS Project No.: 20020405

February 18, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **20020405**
Project Name: Kop Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04



Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20020405**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on March 10, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal

Laboratory Manager



Project Name: Kop Flex
PSS Project No.: 20020405

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 02/04/2020 at 01:00 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20020405-001	Effluent VSP-4	WASTE WATER	02/04/20 12:20

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20020405

Sample ID: Effluent VSP-4 **Date/Time Sampled: 02/04/2020 12:20** **PSS Sample ID: 20020405-001**
Matrix: WASTE WATER **Date/Time Received: 02/04/2020 13:00**

Dissolved Metals Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	ND	ug/L	1.0		1	02/07/20	02/07/20 16:59	1064
Lead	ND	ug/L	1.0		1	02/07/20	02/07/20 16:59	1064
Nickel	1.5	ug/L	1.0		1	02/07/20	02/07/20 16:59	1064
Zinc	ND	ug/L	20		1	02/07/20	02/07/20 16:59	1064

Total Metals + Hardness Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	ND	ug/L	1.0		1	02/05/20	02/05/20 23:43	1064
Lead	ND	ug/L	1.0		1	02/05/20	02/05/20 23:43	1064
Nickel	4.5	ug/L	1.0		1	02/05/20	02/05/20 23:43	1064
Zinc	ND	ug/L	20		1	02/05/20	02/05/20 23:43	1064
Hardness (Ca & Mg)	13	mg/L	0.66		1	02/05/20	02/05/20 23:43	1064

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Chloromethane	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Vinyl Chloride	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Bromomethane	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Chloroethane	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Methylene Chloride	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Chloroform	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Benzene	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Trichloroethene	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20020405

Sample ID: Effluent VSP-4 **Date/Time Sampled: 02/04/2020 12:20** **PSS Sample ID: 20020405-001**
Matrix: WASTE WATER **Date/Time Received: 02/04/2020 13:00**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Bromodichloromethane	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Toluene	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Tetrachloroethylene	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Dibromochloromethane	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Chlorobenzene	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Ethylbenzene	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Bromoform	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	02/05/20	02/05/20 16:47	1011
Surrogate(s)	Recovery		Limits					
<i>Dibromofluoromethane</i>	109 %		87-120		1	02/05/20	02/05/20 16:47	1011
<i>4-Bromofluorobenzene</i>	102 %		85-147		1	02/05/20	02/05/20 16:47	1011
<i>Toluene-D8</i>	103 %		88-110		1	02/05/20	02/05/20 16:47	1011

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	02/05/20	02/05/20 09:58	1061

Biochemical Oxygen Demand Analytical Method: SM 5210B -2011

Start time: 05-Feb-20 15:40

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		02/10/20	02/10/20 14:50	4005

Case Narrative

Project Name: Kop Flex

PSS Project No.: 20020405

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

20020405: Analyses associated with analyst code 4005 were performed by Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

Lab Chronology

Project Name: Kop Flex
 PSS Project No.: 20020405

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	20020405-001	W	80245	171707	02/05/2020 11:09	02/05/2020 23:43
	80245-1-BKS	BKS	80245-1-BKS	W	80245	171707	02/05/2020 11:09	02/05/2020 23:39
	80245-1-BLK	BLK	80245-1-BLK	W	80245	171707	02/05/2020 11:09	02/05/2020 23:34
	Effluent VSP-4 S	MS	20020405-001 S	W	80245	171707	02/05/2020 11:09	02/05/2020 23:48
	Effluent VSP-4 SD	MSD	20020405-001 S	W	80245	171707	02/05/2020 11:09	02/05/2020 23:53
EPA 200.8	Effluent VSP-4	Initial	20020405-001	W	80285	171760	02/07/2020 12:31	02/07/2020 16:59
	80285-1-BKS	BKS	80285-1-BKS	W	80285	171760	02/07/2020 12:31	02/07/2020 16:55
	80285-1-BLK	BLK	80285-1-BLK	W	80285	171760	02/07/2020 12:31	02/07/2020 16:07
	Effluent VSP-4 S	MS	20020405-001 S	W	80285	171760	02/07/2020 12:31	02/07/2020 17:04
	Effluent VSP-4 SD	MSD	20020405-001 S	W	80285	171760	02/07/2020 12:31	02/07/2020 17:08
EPA 624 .1	Effluent VSP-4	Initial	20020405-001	W	80267	171692	02/05/2020 12:31	02/05/2020 16:47
	80267-1-BKS	BKS	80267-1-BKS	W	80267	171692	02/05/2020 12:31	02/05/2020 14:09
	80267-1-BLK	BLK	80267-1-BLK	W	80267	171692	02/05/2020 12:31	02/05/2020 15:40
	Effluent VSP-4 S	MS	20020405-001 S	W	80267	171692	02/05/2020 12:31	02/05/2020 19:48
	Effluent VSP-4 SD	MSD	20020405-001 S	W	80267	171692	02/05/2020 12:31	02/05/2020 20:11
SM 2540D -2011	Effluent VSP-4	Initial	20020405-001	W	171644	171644	02/05/2020 09:58	02/05/2020 09:58
	171644-1-BLK	BLK	171644-1-BLK	W	171644	171644	02/05/2020 09:58	02/05/2020 09:58
	601 D	MD	20020307-002 D	W	171644	171644	02/05/2020 09:58	02/05/2020 09:58
SM 5210B -2011	Effluent VSP-4	Initial	20020405-001	W	171957	171957	02/10/2020 14:50	02/10/2020 14:50

Project Name Kop Flex
PSS Project No.: 20020405

Analytical Method: SM 2540D -2011

Seq Number: 171644 Matrix: Water
MB Sample Id: 171644-1-BLK

Parameter	MB Result	LOD	RL	Units	Flag
Suspended Solids	ND	0.5000	1.000	mg/L	

Analytical Method: EPA 200.8

Seq Number: 171707 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 80245-1-BLK LCS Sample Id: 80245-1-BKS Date Prep: 02/05/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	41.18	103	85-115	ug/L	
Lead	<1.000	40.00	39.00	98	85-115	ug/L	
Nickel	<1.000	40.00	38.48	96	85-115	ug/L	
Zinc	<20.00	200	193.4	97	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 171760 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 80285-1-BLK LCS Sample Id: 80285-1-BKS Date Prep: 02/07/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	40.63	102	85-115	ug/L	
Lead	<1.000	40.00	41.25	103	85-115	ug/L	
Nickel	<1.000	40.00	43.27	108	85-115	ug/L	
Zinc	<20.00	200	212	106	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 171707 Matrix: Waste Water Prep Method: E200.8_PREP
Parent Sample Id: 20020405-001 MS Sample Id: 20020405-001 S Date Prep: 02/05/20
MSD Sample Id: 20020405-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	<1.000	40.00	41.44	104	41.92	105	70-130	1	25	ug/L	
Lead	<1.000	40.00	39.34	98	38.84	97	70-130	1	25	ug/L	
Nickel	4.511	40.00	43.88	98	44.34	100	70-130	2	25	ug/L	
Zinc	<20.00	200	213.8	107	217.6	109	70-130	2	25	ug/L	

Project Name Kop Flex

PSS Project No.: 20020405

Analytical Method: EPA 200.8

Seq Number: 171760

Parent Sample Id: 20020405-001

Matrix: Waste Water

MS Sample Id: 20020405-001 S

Prep Method: E200.8_PREP

Date Prep: 02/07/20

MSD Sample Id: 20020405-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	<1.000	40.00	40.85	102	39.99	100	70-130	2	25	ug/L	
Lead	<1.000	40.00	39.95	100	39.43	99	70-130	1	25	ug/L	
Nickel	1.492	40.00	44.31	107	43.83	106	70-130	1	25	ug/L	
Zinc	<20.00	200	228.5	114	226.5	113	70-130	1	25	ug/L	

Analytical Method: EPA 624 .1

Seq Number: 171692

MB Sample Id: 80267-1-BLK

Matrix: Water

LCS Sample Id: 80267-1-BKS

Prep Method: E624PREP

Date Prep: 02/05/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	48.03	96	54-148	ug/L	
Chloromethane	<1.000	50.00	52.52	105	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	56.70	113	5-195	ug/L	
Bromomethane	<1.000	50.00	50.75	102	15-185	ug/L	
Chloroethane	<1.000	50.00	51.19	102	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	54.58	109	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	51.13	102	50-150	ug/L	
Methylene Chloride	<1.000	50.00	51.37	103	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	52.49	105	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	51.51	103	70-130	ug/L	
Chloroform	<1.000	50.00	51.32	103	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	52.33	105	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	55.44	111	70-130	ug/L	
Benzene	<1.000	50.00	49.39	99	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	52.64	105	70-130	ug/L	
Trichloroethene	<1.000	50.00	50.49	101	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.66	103	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	54.70	109	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	49.93	100	25-175	ug/L	
Toluene	<1.000	50.00	50.59	101	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	50.62	101	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.81	102	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	50.94	102	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	49.48	99	70-135	ug/L	
Chlorobenzene	<1.000	50.00	48.61	97	65-135	ug/L	
Ethylbenzene	<1.000	50.00	52.09	104	60-140	ug/L	
Bromoform	<1.000	50.00	49.95	100	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	45.24	90	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	49.72	99	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	49.11	98	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	49.79	100	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	106		100		87-120	%
4-Bromofluorobenzene	103		97		85-147	%
Toluene-D8	101		102		88-110	%

Project Name Kop Flex

PSS Project No.: 20020405

Analytical Method: EPA 624 .1

Seq Number: 171692

Parent Sample Id: 20020405-001

Matrix: Waste Water

MS Sample Id: 20020405-001 S

Prep Method: E624PREP

Date Prep: 02/05/20

MSD Sample Id: 20020405-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	48.04	96	46.91	94	43-150	2	27	ug/L	
Chloromethane	<1.000	50.00	53.04	106	51.18	102	1-273	4	60	ug/L	
Vinyl Chloride	<1.000	50.00	59.24	118	56.67	113	1-251	4	66	ug/L	
Bromomethane	<1.000	50.00	53.90	108	53.09	106	1-242	2	61	ug/L	
Chloroethane	<1.000	50.00	50.88	102	52.32	105	14-230	3	78	ug/L	
Trichlorofluoromethane	<1.000	50.00	53.80	108	52.36	105	17-181	3	84	ug/L	
1,1-Dichloroethene	<1.000	50.00	54.96	110	51.77	104	1-234	6	32	ug/L	
Methylene Chloride	<1.000	50.00	53.13	106	51.45	103	1-221	3	28	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	49.19	98	48.45	97	54-156	1	45	ug/L	
1,1-Dichloroethane	<1.000	50.00	52.44	105	50.81	102	59-155	3	40	ug/L	
Chloroform	<1.000	50.00	54.15	108	52.72	105	51-138	3	54	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	54.79	110	53.51	107	52-162	3	36	ug/L	
Carbon Tetrachloride	<1.000	50.00	56.72	113	54.92	110	70-140	3	41	ug/L	
Benzene	<1.000	50.00	51.79	104	50.66	101	37-151	3	61	ug/L	
1,2-Dichloroethane	<1.000	50.00	54.58	109	54.26	109	49-155	0	49	ug/L	
Trichloroethene	<1.000	50.00	51.97	104	50.80	102	70-157	2	48	ug/L	
1,2-Dichloropropane	<1.000	50.00	53.21	106	52.77	106	1-210	0	55	ug/L	
Bromodichloromethane	<1.000	50.00	56.64	113	55.37	111	35-155	2	56	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	50.52	101	50.30	101	1-227	0	58	ug/L	
Toluene	<1.000	50.00	52.63	105	51.03	102	47-150	3	41	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	51.56	103	50.85	102	17-183	1	86	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	52.75	106	52.70	105	52-150	1	45	ug/L	
Tetrachloroethylene	<1.000	50.00	51.18	102	49.51	99	64-148	3	39	ug/L	
Dibromochloromethane	<1.000	50.00	52.00	104	51.99	104	53-149	0	50	ug/L	
Chlorobenzene	<1.000	50.00	51.32	103	50.57	101	37-160	2	53	ug/L	
Ethylbenzene	<1.000	50.00	55.70	111	53.99	108	37-162	3	63	ug/L	
Bromoform	<1.000	50.00	53.76	108	52.39	105	45-169	3	42	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	51.51	103	52.40	105	46-157	2	61	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	52.32	105	52.36	105	59-156	0	43	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	51.30	103	51.31	103	18-190	0	57	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	53.01	106	53.42	107	18-190	1	57	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
Dibromofluoromethane	102		102		87-120	%
4-Bromofluorobenzene	100		101		85-147	%
Toluene-D8	102		101		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

1 *CLIENT: WSP		*OFFICE LOC. Herndon, VA		PSS Work Order #: 20020405		PAGE 1 OF 1		
*PROJECT MGR: Eric Johnson *PHONE NO.: (703) 709-6500				Matrix Codes: SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe				
EMAIL: eric.johnson@wsp.com FAX NO.: ()				Analysis/Method Required				
*PROJECT NAME: Kop Flex PROJECT NO.: 31401545.010/04				Preservatives Used: HCl N/A N/A HNO ₃ HNO ₃				
SITE LOCATION: Hanover, MD P.O. NO.:				*CONTAINERS: 3				
SAMPLER(S): Shannan Burke DW CERT NO.:				Analysis/Method Required: VOCs (EPA 624) BOD TSS Total Metals + Hardness (200.8) Dissolved Metals (200.8)				
LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No.	C	G	REMARKS
1	Effluent VSP-4	2/4/20	1220	WW	7	G	X X X X X	
5 Relinquished By: (1) <i>[Signature]</i>		Date: 2/4/20	Time: 1300	Received By: <i>[Signature]</i>	4 *Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			# of Coolers: 1 TB=11.7°C
Relinquished By: (2)		Date:	Time:	Received By:	Data Deliverables Required: COA QC SUMM CLP LIKE OTHER <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			Custody Seal: Cooler=Intact
Relinquished By: (3)		Date:	Time:	Received By:	Special Instructions: Standard 10-day TAT Dissolved metals field-filtered			Ice Present: PRES Temp: 8.1-11.1°C
Relinquished By: (4)		Date:	Time:	Received By:	DW COMPLIANCE? YES <input type="checkbox"/>		EDD FORMAT TYPE:	STATE RESULTS REPORTED TO: MD DE PA VA WV OTHER

6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED

Sample Receipt Checklist

Project Name: Kop Flex
PSS Project No.: 20020405

Client Name WSP USA - Herndon
Disposal Date 03/10/2020

Received By Thomas Wingate
Date Received 02/04/2020 01:00:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
Seal(s) Signed / Dated? Yes

Ice Present
Temp (deg C) 11.5
Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
Chain of Custody Yes

Sampler Name Shannon Burke
MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
Intact? Yes
Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
Total No. of Containers Received 7

Preservation

Total Metals (pH<2) Yes
Dissolved Metals, filtered within 15 minutes of collection (pH<2) Yes
Orthophosphorus, filtered within 15 minutes of collection N/A
Cyanides (pH>12) N/A
Sulfide (pH>9) N/A
TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
TOX, TKN, NH3, Total Phos (pH<2) N/A
VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
Do VOA vials have zero headspace? Yes
624 VOC (Rcvd at least one unpreserved VOA vial) No
524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

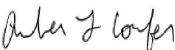
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 02/04/2020

PM Review and Approval:



Amber Confer
Page 11 of 11

Date: 02/04/2020

Project Name: Kop Flex
PSS Project No.: 20020406

February 18, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **20020406**
Project Name: Kop Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04



Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20020406**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on March 10, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop Flex
PSS Project No.: 20020406

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 02/04/2020 at 01:00 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20020406-001	Effluent VSP-4	WASTE WATER	02/04/20 12:20
20020406-002	TB-020420	WATER	02/04/20 10:44
20020406-002	TB-020420	WATER	02/04/20 10:44

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C** Results Pending Final Confirmation.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail** The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J** The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL** This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND** Not Detected at or above the reporting limit.
- RL** PSS Reporting Limit.
- U** Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20020406

Sample ID: Effluent VSP-4 **Date/Time Sampled: 02/04/2020 12:20** **PSS Sample ID: 20020406-001**
Matrix: WASTE WATER **Date/Time Received: 02/04/2020 13:00**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	02/18/20	02/18/20 13:56	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	104	%	80-120		1	02/18/20	02/18/20 13:56	1045

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20020406

Sample ID: TB-020420 **Date/Time Sampled: 02/04/2020 10:44** **PSS Sample ID: 20020406-002**
Matrix: WATER **Date/Time Received: 02/04/2020 13:00**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

pH=7

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Chloromethane	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Vinyl Chloride	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Bromomethane	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Chloroethane	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Methylene Chloride	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Chloroform	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Benzene	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Trichloroethene	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Bromodichloromethane	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Toluene	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Tetrachloroethylene	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Dibromochloromethane	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Chlorobenzene	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Ethylbenzene	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
Bromoform	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	02/05/20	02/05/20 17:10	1011

Surrogate(s)	Recovery	Limits			
Dibromofluoromethane	105 %	87-120	1	02/05/20	02/05/20 17:10 1011
4-Bromofluorobenzene	102 %	85-147	1	02/05/20	02/05/20 17:10 1011
Toluene-D8	102 %	88-110	1	02/05/20	02/05/20 17:10 1011

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20020406

Sample ID: TB-020420 **Date/Time Sampled: 02/04/2020 10:44** **PSS Sample ID: 20020406-002**
Matrix: WATER **Date/Time Received: 02/04/2020 13:00**
 1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	02/18/20	02/18/20 13:34	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	104	%	80-120		1	02/18/20	02/18/20 13:34	1045

Case Narrative

Project Name: Kop Flex

PSS Project No.: 20020406

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop Flex
 PSS Project No.: 20020406

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-020420	Initial	20020406-002	W	80267	171692	02/05/2020 12:31	02/05/2020 17:10
	80267-1-BKS	BKS	80267-1-BKS	W	80267	171692	02/05/2020 12:31	02/05/2020 14:09
	80267-1-BLK	BLK	80267-1-BLK	W	80267	171692	02/05/2020 12:31	02/05/2020 15:40
	Effluent VSP-4 S	MS	20020405-001 S	W	80267	171692	02/05/2020 12:31	02/05/2020 19:48
	Effluent VSP-4 SD	MSD	20020405-001 S	W	80267	171692	02/05/2020 12:31	02/05/2020 20:11
SW-846 8260 B-Modified	Effluent VSP-4	Initial	20020406-001	W	80391	171982	02/18/2020 10:51	02/18/2020 13:56
	TB-020420	Initial	20020406-002	W	80391	171982	02/18/2020 10:51	02/18/2020 13:34
	80391-1-BKS	BKS	80391-1-BKS	W	80391	171982	02/18/2020 10:51	02/18/2020 11:36
	80391-1-BLK	BLK	80391-1-BLK	W	80391	171982	02/18/2020 10:51	02/18/2020 13:05
	80391-1-BSD	BSD	80391-1-BSD	W	80391	171982	02/18/2020 10:51	02/18/2020 11:58

Project Name Kop Flex

PSS Project No.: 20020406

Analytical Method: EPA 624 .1

Seq Number: 171692

Matrix: Water

Prep Method: E624PREP

Date Prep: 02/05/20

MB Sample Id: 80267-1-BLK

LCS Sample Id: 80267-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	48.03	96	54-148	ug/L	
Chloromethane	<1.000	50.00	52.52	105	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	56.70	113	5-195	ug/L	
Bromomethane	<1.000	50.00	50.75	102	15-185	ug/L	
Chloroethane	<1.000	50.00	51.19	102	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	54.58	109	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	51.13	102	50-150	ug/L	
Methylene Chloride	<1.000	50.00	51.37	103	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	52.49	105	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	51.51	103	70-130	ug/L	
Chloroform	<1.000	50.00	51.32	103	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	52.33	105	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	55.44	111	70-130	ug/L	
Benzene	<1.000	50.00	49.39	99	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	52.64	105	70-130	ug/L	
Trichloroethene	<1.000	50.00	50.49	101	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.66	103	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	54.70	109	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	49.93	100	25-175	ug/L	
Toluene	<1.000	50.00	50.59	101	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	50.62	101	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.81	102	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	50.94	102	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	49.48	99	70-135	ug/L	
Chlorobenzene	<1.000	50.00	48.61	97	65-135	ug/L	
Ethylbenzene	<1.000	50.00	52.09	104	60-140	ug/L	
Bromoform	<1.000	50.00	49.95	100	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	45.24	90	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	49.72	99	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	49.11	98	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	49.79	100	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	106		100		87-120	%
4-Bromofluorobenzene	103		97		85-147	%
Toluene-D8	101		102		88-110	%

Analytical Method: SW-846 8260 B-Modified

Seq Number: 171982

Matrix: Water

Prep Method: SW5030B

Date Prep: 02/18/20

MB Sample Id: 80391-1-BLK

LCS Sample Id: 80391-1-BKS

LCSD Sample Id: 80391-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	27.18	91	27.94	93	50-150	2	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	105		108		104		80-120	%

Project Name Kop Flex

PSS Project No.: 20020406

- F = RPD exceeded the laboratory control limits
- X = Recovery of MS, MSD or both outside of QC Criteria
- H= Recovery of BS,BSD or both exceeded the laboratory control limits
- L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

① *CLIENT: WSP		*OFFICE LOC: Herndon, VA		PSS Work Order #: 20020420			PAGE 1 OF 1																																																																																					
*PROJECT MGR: Eric Johnson		*PHONE NO.: (703) 709-6500		Matrix Codes: SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe																																																																																								
EMAIL: eric.johnson@wsp.com		FAX NO.: ()		No. CONTAINERS																																																																																								
PROJECT NAME: Kop Flex		PROJECT NO.: 31701545.010/04		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 5%;">Preservatives Used</th> <td>HCl</td><td>HCl</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <th style="width: 5%;">Analysis/Method Required</th> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <th style="width: 5%;">C = COMP</th> <td>③</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <th style="width: 5%;">G = GRAB</th> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>				Preservatives Used	HCl	HCl																			Analysis/Method Required																					C = COMP	③																				G = GRAB	*																				
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SAMPLER(S): Shannon Burke		DW CERT NO.:		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">⑤ Relinquished By: (1) Alan Ballew</td> <td>Date: 2/4/20</td> <td>Time: 1300</td> <td>Received By: [Signature]</td> <td colspan="2" rowspan="2">④ *Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other </td> <td># of Coolers: 1 TB: 11.4°C</td> </tr> <tr> <td colspan="2">Relinquished By: (2)</td> <td>Date:</td> <td>Time:</td> <td>Received By:</td> <td>Data Deliverables Required: COA <input type="checkbox"/> QC <input type="checkbox"/> SUMM <input type="checkbox"/> CLP <input type="checkbox"/> LIKE <input type="checkbox"/> OTHER <input type="checkbox"/></td> <td>Custody Seal: COVER-INTACT</td> </tr> <tr> <td colspan="2">Relinquished By: (3)</td> <td>Date:</td> <td>Time:</td> <td>Received By:</td> <td colspan="2" rowspan="2">Special Instructions: Standard 10-day TAT</td> <td>Ice Present: PREP Temp: 9.9°-12.3°C</td> </tr> <tr> <td colspan="2">Relinquished By: (4)</td> <td>Date:</td> <td>Time:</td> <td>Received By:</td> <td>DW COMPLIANCE? YES <input type="checkbox"/></td> <td>EDD FORMAT TYPE: _____</td> <td>Shipping Carrier: CLW</td> </tr> <tr> <td colspan="8">STATE RESULTS REPORTED TO: MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER _____ </td> </tr> </table>				⑤ Relinquished By: (1) Alan Ballew		Date: 2/4/20	Time: 1300	Received By: [Signature]	④ *Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other		# of Coolers: 1 TB: 11.4°C	Relinquished By: (2)		Date:	Time:	Received By:	Data Deliverables Required: COA <input type="checkbox"/> QC <input type="checkbox"/> SUMM <input type="checkbox"/> CLP <input type="checkbox"/> LIKE <input type="checkbox"/> OTHER <input type="checkbox"/>	Custody Seal: COVER-INTACT	Relinquished By: (3)		Date:	Time:	Received By:	Special Instructions: Standard 10-day TAT		Ice Present: PREP Temp: 9.9°-12.3°C	Relinquished By: (4)		Date:	Time:	Received By:	DW COMPLIANCE? YES <input type="checkbox"/>	EDD FORMAT TYPE: _____	Shipping Carrier: CLW	STATE RESULTS REPORTED TO: MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER _____																																																					
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6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED

Sample Receipt Checklist

Project Name: Kop Flex
 PSS Project No.: 20020406

Client Name WSP USA - Herndon
Disposal Date 03/10/2020

Received By Thomas Wingate
Date Received 02/04/2020 01:00:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 12.3
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Shannon Burke
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 2
 Total No. of Containers Received 7

Preservation

Total Metals (pH<2) N/A
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) No
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

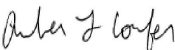
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 02/04/2020

PM Review and Approval:



Amber Confer

Date: 02/04/2020

Project Name: Kop Flex
PSS Project No.: 20032424

April 7, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20032424**
Project Name: Kop Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20032424**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on April 28, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal

Laboratory Manager



Project Name: Kop Flex
PSS Project No.: 20032424

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 03/24/2020 at 12:55 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20032424-001	Effluent VSP-4	WASTE WATER	03/24/20 12:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20032424

Sample ID: Effluent VSP-4 **Date/Time Sampled: 03/24/2020 12:00** **PSS Sample ID: 20032424-001**
Matrix: WASTE WATER **Date/Time Received: 03/24/2020 12:55**

Dissolved Metals Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	3.2	ug/L	1.0		1	03/26/20	03/26/20 19:08	1051
Lead	ND	ug/L	1.0		1	03/26/20	03/26/20 19:08	1051
Nickel	11.6	ug/L	1.00		1	03/26/20	03/26/20 19:08	1051
Zinc	22.4	ug/L	20.0		1	03/26/20	03/26/20 19:08	1051

Total Metals + Hardness Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	3.3	ug/L	1.0		1	03/26/20	03/26/20 18:54	1051
Lead	ND	ug/L	1.0		1	03/26/20	03/26/20 18:54	1051
Nickel	9.2	ug/L	1.0		1	03/26/20	03/26/20 18:54	1051
Zinc	23.2	ug/L	20.0		1	03/26/20	03/26/20 18:54	1051
Hardness (Ca & Mg)	17	mg/L	0.66		1	03/26/20	03/26/20 18:54	1051

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Chloromethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Vinyl Chloride	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Bromomethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Chloroethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Methylene Chloride	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Chloroform	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Benzene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Trichloroethene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20032424

Sample ID: Effluent VSP-4 **Date/Time Sampled: 03/24/2020 12:00** **PSS Sample ID: 20032424-001**
Matrix: WASTE WATER **Date/Time Received: 03/24/2020 12:55**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Bromodichloromethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Toluene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Tetrachloroethylene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Dibromochloromethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Chlorobenzene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Ethylbenzene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Bromoform	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:46	1011
Surrogate(s)	Recovery		Limits					
<i>Dibromofluoromethane</i>	103 %		87-120		1	03/25/20	03/25/20 13:46	1011
<i>4-Bromofluorobenzene</i>	97 %		85-147		1	03/25/20	03/25/20 13:46	1011
<i>Toluene-D8</i>	101 %		88-110		1	03/25/20	03/25/20 13:46	1011

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	03/25/20	03/25/20 11:05	1061

Biochemical Oxygen Demand Analytical Method: SM 5210B -2011

Start time: 25-Mar-20 13:00

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		03/30/20	03/30/20 15:42	4005

Case Narrative

Project Name: Kop Flex

PSS Project No.: 20032424

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

20032424: Analyses associated with analyst code 4005 were performed by Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

Lab Chronology

Project Name: Kop Flex
 PSS Project No.: 20032424

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	20032424-001	W	80909	173053	03/26/2020 16:41	03/26/2020 18:54
	80909-1-BKS	BKS	80909-1-BKS	W	80909	173053	03/26/2020 16:41	03/26/2020 18:10
	80909-1-BLK	BLK	80909-1-BLK	W	80909	173053	03/26/2020 16:41	03/26/2020 18:05
	20C0051-01 S	MS	20032402-001 S	W	80909	173053	03/26/2020 16:41	03/26/2020 18:20
	20C0051-01 SD	MSD	20032402-001 S	W	80909	173053	03/26/2020 16:41	03/26/2020 18:24
EPA 200.8	Effluent VSP-4	Initial	20032424-001	W	80910	173054	03/26/2020 16:50	03/26/2020 19:08
	80910-1-BKS	BKS	80910-1-BKS	W	80910	173054	03/26/2020 16:50	03/26/2020 19:04
	80910-1-BLK	BLK	80910-1-BLK	W	80910	173054	03/26/2020 16:50	03/26/2020 18:59
	Effluent VSP-4 S	MS	20032424-001 S	W	80910	173054	03/26/2020 16:50	03/26/2020 19:13
	Effluent VSP-4 SD	MSD	20032424-001 S	W	80910	173054	03/26/2020 16:50	03/26/2020 19:18
EPA 624 .1	Effluent VSP-4	Initial	20032424-001	W	80913	173041	03/27/2020 08:25	03/25/2020 13:46
	80913-1-BKS	BKS	80913-1-BKS	W	80913	173041	03/27/2020 08:25	03/25/2020 10:45
	80913-1-BLK	BLK	80913-1-BLK	W	80913	173041	03/27/2020 08:25	03/25/2020 11:53
	Effluent VSP-4 S	MS	20032424-001 S	W	80913	173041	03/27/2020 08:25	03/25/2020 14:54
	Effluent VSP-4 SD	MSD	20032424-001 S	W	80913	173041	03/27/2020 08:25	03/25/2020 15:17
SM 2540D -2011	Effluent VSP-4	Initial	20032424-001	W	173002	173002	03/25/2020 11:05	03/25/2020 11:05
	173002-1-BLK	BLK	173002-1-BLK	W	173002	173002	03/25/2020 11:05	03/25/2020 11:05
	ML-DR-01 D	MD	20032420-001 D	W	173002	173002	03/25/2020 11:05	03/25/2020 11:05
SM 5210B -2011	Effluent VSP-4	Initial	20032424-001	W	173272	173272	03/30/2020 15:42	03/30/2020 15:42

Project Name Kop Flex
PSS Project No.: 20032424

Analytical Method: SM 2540D -2011

Seq Number: 173002 Matrix: Water
MB Sample Id: 173002-1-BLK

Parameter	MB Result	LOD	RL	Units	Flag
Suspended Solids	ND	0.5000	1.000	mg/L	

Analytical Method: EPA 200.8

Seq Number: 173053 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 80909-1-BLK LCS Sample Id: 80909-1-BKS Date Prep: 03/26/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	37.97	95	85-115	ug/L	
Lead	<1.000	40.00	38.50	96	85-115	ug/L	
Nickel	<1.000	40.00	40.10	100	85-115	ug/L	
Zinc	<20.00	200	202.4	101	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 173054 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 80910-1-BLK LCS Sample Id: 80910-1-BKS Date Prep: 03/26/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	37.85	95	85-115	ug/L	
Lead	<1.000	40.00	39.30	98	85-115	ug/L	
Nickel	<1.000	40.00	37.00	93	85-115	ug/L	
Zinc	<20.00	200	192.3	96	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 173054 Matrix: Waste Water Prep Method: E200.8_PREP
Parent Sample Id: 20032424-001 MS Sample Id: 20032424-001 S Date Prep: 03/26/20
MSD Sample Id: 20032424-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	3.177	40.00	41.86	97	41.60	96	70-130	1	25	ug/L	
Lead	<1.000	40.00	38.20	96	38.44	96	70-130	0	25	ug/L	
Nickel	11.56	40.00	49.51	95	48.92	93	70-130	2	25	ug/L	
Zinc	22.40	200	221.1	99	219.4	99	70-130	0	25	ug/L	

Project Name Kop Flex
PSS Project No.: 20032424

Analytical Method: EPA 624 .1

Seq Number: 173041

MB Sample Id: 80913-1-BLK

Matrix: Water

LCS Sample Id: 80913-1-BKS

Prep Method: E624PREP

Date Prep: 03/27/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	44.53	89	54-148	ug/L	
Chloromethane	<1.000	50.00	44.07	88	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	46.01	92	5-195	ug/L	
Bromomethane	<1.000	50.00	44.17	88	15-185	ug/L	
Chloroethane	<1.000	50.00	43.47	87	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	44.94	90	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	44.94	90	50-150	ug/L	
Methylene Chloride	<1.000	50.00	45.60	91	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	45.65	91	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	45.11	90	70-130	ug/L	
Chloroform	<1.000	50.00	47.65	95	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	47.06	94	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	49.95	100	70-130	ug/L	
Benzene	<1.000	50.00	47.54	95	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	46.61	93	70-130	ug/L	
Trichloroethene	<1.000	50.00	48.40	97	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	48.50	97	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	50.28	101	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	47.50	95	25-175	ug/L	
Toluene	<1.000	50.00	49.47	99	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	47.55	95	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	49.82	100	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	51.19	102	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	49.27	99	70-135	ug/L	
Chlorobenzene	<1.000	50.00	49.12	98	65-135	ug/L	
Ethylbenzene	<1.000	50.00	49.91	100	60-140	ug/L	
Bromoform	<1.000	50.00	51.43	103	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	46.08	92	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	50.40	101	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	49.36	99	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	50.94	102	65-135	ug/L	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	
Dibromofluoromethane	101		99		87-120	%	
4-Bromofluorobenzene	96		93		85-147	%	
Toluene-D8	99		100		88-110	%	

Project Name Kop Flex
PSS Project No.: 20032424

Analytical Method: EPA 624 .1

Seq Number: 173041

Parent Sample Id: 20032424-001

Matrix: Waste Water

MS Sample Id: 20032424-001 S

Prep Method: E624PREP

Date Prep: 03/27/20

MSD Sample Id: 20032424-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	48.16	96	46.48	93	43-150	3	27	ug/L	
Chloromethane	<1.000	50.00	47.85	96	46.79	94	1-273	2	60	ug/L	
Vinyl Chloride	<1.000	50.00	52.90	106	50.12	100	1-251	6	66	ug/L	
Bromomethane	<1.000	50.00	48.90	98	47.70	95	1-242	3	61	ug/L	
Chloroethane	<1.000	50.00	47.69	95	46.31	93	14-230	2	78	ug/L	
Trichlorofluoromethane	<1.000	50.00	49.64	99	47.42	95	17-181	4	84	ug/L	
1,1-Dichloroethene	<1.000	50.00	49.75	100	48.16	96	1-234	4	32	ug/L	
Methylene Chloride	<1.000	50.00	48.65	97	48.56	97	1-221	0	28	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	51.01	102	49.42	99	54-156	3	45	ug/L	
1,1-Dichloroethane	<1.000	50.00	50.14	100	48.53	97	59-155	3	40	ug/L	
Chloroform	<1.000	50.00	52.15	104	51.04	102	51-138	2	54	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	53.11	106	51.12	102	52-162	4	36	ug/L	
Carbon Tetrachloride	<1.000	50.00	55.48	111	53.37	107	70-140	4	41	ug/L	
Benzene	<1.000	50.00	52.59	105	51.04	102	37-151	3	61	ug/L	
1,2-Dichloroethane	<1.000	50.00	49.63	99	48.69	97	49-155	2	49	ug/L	
Trichloroethene	<1.000	50.00	52.36	105	51.33	103	70-157	2	48	ug/L	
1,2-Dichloropropane	<1.000	50.00	52.58	105	51.19	102	1-210	3	55	ug/L	
Bromodichloromethane	<1.000	50.00	53.95	108	53.49	107	35-155	1	56	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	49.91	100	49.29	99	1-227	1	58	ug/L	
Toluene	<1.000	50.00	54.78	110	53.24	106	47-150	4	41	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	50.23	100	49.02	98	17-183	2	86	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	52.91	106	52.18	104	52-150	2	45	ug/L	
Tetrachloroethylene	<1.000	50.00	55.34	111	53.31	107	64-148	4	39	ug/L	
Dibromochloromethane	<1.000	50.00	51.63	103	51.64	103	53-149	0	50	ug/L	
Chlorobenzene	<1.000	50.00	52.43	105	52.17	104	37-160	1	53	ug/L	
Ethylbenzene	<1.000	50.00	53.17	106	52.86	106	37-162	0	63	ug/L	
Bromoform	<1.000	50.00	53.09	106	53.47	107	45-169	1	42	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	48.78	98	51.16	102	46-157	4	61	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	52.28	105	53.51	107	59-156	2	43	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	51.02	102	52.27	105	18-190	3	57	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	53.31	107	54.48	109	18-190	2	57	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
Dibromofluoromethane	100		100		87-120	%
4-Bromofluorobenzene	93		93		85-147	%
Toluene-D8	100		100		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com

email: info@phaseonline.com

① *CLIENT: WSP *OFFICE LOC: Herndon, VA PSS Work Order #: 20030424 PAGE 1 OF 1

*PROJECT MGR: Eric Johnson *PHONE NO.: (703) 709-6500
 EMAIL: eric.johnson@wsp.com FAX NO.: ()
 *PROJECT NAME: Kop Flex PROJECT NO.: 31401545.010/04
 SITE LOCATION: Hanover, MD P.O. NO.:
 SAMPLER(S): Shannon Burke DW CERT NO.:

②

LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No. CONTAINERS	SAMPLE TYPE	Preservatives Used					REMARKS	
							HCl	HNO ₃	HNO ₂	HNO ₃	HNO ₃		
<u>1</u>	<u>Effluent VSP-4</u>	<u>3/24/20</u>	<u>1200</u>	<u>WW</u>	<u>7</u>	<u>G</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	

③ Matrix Codes: SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe

No. CONTAINERS: 7

SAMPLE TYPE: G

Analysis/Method Required: 3
 * VOCs (624)
BOD
TSS
Total Metals (2008)
Dissolved Metals (2008)
Hardness (2008)

④

Relinquished By: (1)	Date	Time	Received By:	*Requested TAT (One TAT per COC)	# of Coolers:
<u>Shannon Burke</u>	<u>3/24/20</u>	<u>1255</u>	<u>[Signature]</u>	<input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other	<u>1 TB: 1.4⁹</u>
Relinquished By: (2)	Date	Time	Received By:	Data Deliverables Required: COA <input type="checkbox"/> QC <input type="checkbox"/> SUMM <input type="checkbox"/> CLP <input type="checkbox"/> LIKE <input type="checkbox"/> OTHER _____	Custody Seal: <u>Cooler-Intact</u>
Relinquished By: (3)	Date	Time	Received By:	Special Instructions: <u>Standard 10-day TAT 2/24/20 in Metals = Cu, Ni, Pb, Zn; Dissolved metals sample filtered in field.</u>	Ice Present: <u>YES</u> Temp: <u>3.1-3.4°C</u>
Relinquished By: (4)	Date	Time	Received By:	DW COMPLIANCE? <input type="checkbox"/> YES	Shipping Carrier: <u>The Client</u>

⑤ STATE RESULTS REPORTED TO:
 MD DE PA VA WV OTHER _____

DW COMPLIANCE? YES

EDD FORMAT TYPE: _____

Sample Receipt Checklist

Project Name: Kop Flex
 PSS Project No.: 20032424

Client Name WSP USA - Herndon
Disposal Date 04/28/2020

Received By Thomas Wingate
Date Received 03/24/2020 12:55:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 3.4
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Shannon Burke
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
 Total No. of Containers Received 7


Preservation

Total Metals (pH<2) Yes
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) Yes
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) No
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By:  Date: 03/24/2020
 Thomas Wingate

PM Review and Approval:  Date: 03/24/2020
 Amber Confer

Project Name: Kop Flex
PSS Project No.: 20032425

April 7, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **20032425**
Project Name: Kop Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04



Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20032425**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on April 28, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop Flex

PSS Project No.: 20032425

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 03/24/2020 at 12:55 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20032425-001	Effluent VSP-4	WASTE WATER	03/24/20 12:00
20032425-002	TB-032420	WATER	03/24/20 11:16

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20032425

Sample ID: Effluent VSP-4 **Date/Time Sampled: 03/24/2020 12:00** **PSS Sample ID: 20032425-001**
Matrix: WASTE WATER **Date/Time Received: 03/24/2020 12:55**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	04/07/20	04/07/20 11:38	1045
Surrogate(s)	Recovery		Limits					
<i>Toluene-D8</i>	95	%	80-120		1	04/07/20	04/07/20 11:38	1045

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20032425

Sample ID: TB-032420 **Date/Time Sampled: 03/24/2020 11:16** **PSS Sample ID: 20032425-002**
Matrix: WATER **Date/Time Received: 03/24/2020 12:55**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Chloromethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Vinyl Chloride	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Bromomethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Chloroethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Methylene Chloride	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Chloroform	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Benzene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Trichloroethene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Bromodichloromethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Toluene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Tetrachloroethylene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Dibromochloromethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Chlorobenzene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Ethylbenzene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
Bromoform	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	03/25/20	03/25/20 13:23	1011

Surrogate(s)	Recovery	Limits				
Dibromofluoromethane	103 %	87-120	1	03/25/20	03/25/20 13:23	1011
4-Bromofluorobenzene	95 %	85-147	1	03/25/20	03/25/20 13:23	1011
Toluene-D8	100 %	88-110	1	03/25/20	03/25/20 13:23	1011

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20032425

Sample ID: TB-032420 **Date/Time Sampled: 03/24/2020 11:16** **PSS Sample ID: 20032425-002**

Matrix: WATER **Date/Time Received: 03/24/2020 12:55**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	04/07/20	04/07/20 11:16	1045
Surrogate(s)	Recovery		Limits					
<i>Toluene-D8</i>	96	%	80-120		1	04/07/20	04/07/20 11:16	1045

Case Narrative

Project Name: Kop Flex

PSS Project No.: 20032425

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop Flex
 PSS Project No.: 20032425

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-032420	Initial	20032425-002	W	80913	173041	03/27/2020 08:25	03/25/2020 13:23
	80913-1-BKS	BKS	80913-1-BKS	W	80913	173041	03/27/2020 08:25	03/25/2020 10:45
	80913-1-BLK	BLK	80913-1-BLK	W	80913	173041	03/27/2020 08:25	03/25/2020 11:53
	Effluent VSP-4 S	MS	20032424-001 S	W	80913	173041	03/27/2020 08:25	03/25/2020 14:54
	Effluent VSP-4 SD	MSD	20032424-001 S	W	80913	173041	03/27/2020 08:25	03/25/2020 15:17
SW-846 8260 B-Modified	Effluent VSP-4	Initial	20032425-001	W	81044	173312	04/07/2020 12:32	04/07/2020 11:38
	TB-032420	Initial	20032425-002	W	81044	173312	04/07/2020 12:32	04/07/2020 11:16
	81044-1-BKS	BKS	81044-1-BKS	W	81044	173312	04/07/2020 12:32	04/07/2020 09:24
	81044-1-BLK	BLK	81044-1-BLK	W	81044	173312	04/07/2020 12:32	04/07/2020 10:53
	81044-1-BSD	BSD	81044-1-BSD	W	81044	173312	04/07/2020 12:32	04/07/2020 09:46

Project Name Kop Flex

PSS Project No.: 20032425

Analytical Method: EPA 624 .1

Seq Number: 173041

MB Sample Id: 80913-1-BLK

Matrix: Water

LCS Sample Id: 80913-1-BKS

Prep Method: E624PREP

Date Prep: 03/27/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	44.53	89	54-148	ug/L	
Chloromethane	<1.000	50.00	44.07	88	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	46.01	92	5-195	ug/L	
Bromomethane	<1.000	50.00	44.17	88	15-185	ug/L	
Chloroethane	<1.000	50.00	43.47	87	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	44.94	90	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	44.94	90	50-150	ug/L	
Methylene Chloride	<1.000	50.00	45.60	91	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	45.65	91	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	45.11	90	70-130	ug/L	
Chloroform	<1.000	50.00	47.65	95	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	47.06	94	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	49.95	100	70-130	ug/L	
Benzene	<1.000	50.00	47.54	95	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	46.61	93	70-130	ug/L	
Trichloroethene	<1.000	50.00	48.40	97	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	48.50	97	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	50.28	101	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	47.50	95	25-175	ug/L	
Toluene	<1.000	50.00	49.47	99	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	47.55	95	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	49.82	100	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	51.19	102	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	49.27	99	70-135	ug/L	
Chlorobenzene	<1.000	50.00	49.12	98	65-135	ug/L	
Ethylbenzene	<1.000	50.00	49.91	100	60-140	ug/L	
Bromoform	<1.000	50.00	51.43	103	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	46.08	92	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	50.40	101	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	49.36	99	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	50.94	102	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	101		99		87-120	%
4-Bromofluorobenzene	96		93		85-147	%
Toluene-D8	99		100		88-110	%

Analytical Method: SW-846 8260 B-Modified

Seq Number: 173312

MB Sample Id: 81044-1-BLK

Matrix: Water

LCS Sample Id: 81044-1-BKS

Prep Method: SW5030B

Date Prep: 04/07/20

LCSD Sample Id: 81044-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	27.94	93	29.00	97	50-150	4	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	95		97		98		80-120	%

Project Name Kop Flex
PSS Project No.: 20032425

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

1 *CLIENT: WSP		*OFFICE LOC. Herndon, VA			PSS Work Order #: 20032425			PAGE 1 OF 1																																																																																																																																																																																												
*PROJECT MGR: Eric Johnson		*PHONE NO.: (703) 709-6500			Matrix Codes: SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe																																																																																																																																																																																															
EMAIL: eric.johnson@wsp.com		FAX NO.: ()			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">No. CONTAINERS</td> <td>Preservatives Used</td> <td>HCl</td> <td>HCl</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Analysis/ Method Required</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>C = COMP</td> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>G = GRAB</td> <td>*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					No. CONTAINERS	Preservatives Used	HCl	HCl																Analysis/ Method Required																		C = COMP	3																	G = GRAB	*																																																																																																																																		
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5 Relinquished By: (1) <u>Shannon Burke</u>				Date: 3/24/20		Time: 1255		Received By: <u>[Signature]</u>		4 *Requested TAT (One TAT per COC)		# of Coolers: 1 TB-1.4 ²																																																																																																																																																																																								
Relinquished By: (2)				Date		Time		Received By:		<input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day		Custody Seal: <u>Color-Intact</u>																																																																																																																																																																																								
Relinquished By: (3)				Date		Time		Received By:		<input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other		Ice Present: <u>PRES</u> Temp: <u>3.1-3.4²</u>																																																																																																																																																																																								
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Special Instructions: <u>Standard 10-day TAT 3/24/20</u>										STATE RESULTS REPORTED TO:																																																																																																																																																																																										
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Sample Receipt Checklist

Project Name: Kop Flex
PSS Project No.: 20032425

Client Name WSP USA - Herndon
Disposal Date 04/28/2020

Received By Thomas Wingate
Date Received 03/24/2020 12:55:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
Seal(s) Signed / Dated? Yes

Ice Present
Temp (deg C) 3.4
Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
Chain of Custody Yes

Sampler Name Shannon Burke
MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
Intact? Yes
Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 2
Total No. of Containers Received 7

Preservation

Total Metals (pH<2) N/A
Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
Orthophosphorus, filtered within 15 minutes of collection N/A
Cyanides (pH>12) N/A
Sulfide (pH>9) N/A
TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
TOX, TKN, NH3, Total Phos (pH<2) N/A
VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
Do VOA vials have zero headspace? Yes
624 VOC (Rcvd at least one unpreserved VOA vial) No
524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

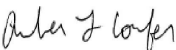
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 03/24/2020

PM Review and Approval:



Amber Confer
Page 11 of 11

Date: 03/24/2020

Project Name: Kop Flex
PSS Project No.: 20040717

April 21, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20040717**
Project Name: Kop Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20040717**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on May 12, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop Flex

PSS Project No.: 20040717

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 04/07/2020 at 01:00 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20040717-001	Effluent VSP-4	WASTE WATER	04/07/20 12:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C** Results Pending Final Confirmation.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail** The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J** The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL** This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND** Not Detected at or above the reporting limit.
- RL** PSS Reporting Limit.
- U** Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20040717

Sample ID: Effluent VSP-4 **Date/Time Sampled: 04/07/2020 12:00** **PSS Sample ID: 20040717-001**
Matrix: WASTE WATER **Date/Time Received: 04/07/2020 13:00**

Dissolved Metals Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	1.3	ug/L	1.0		1	04/12/20	04/13/20 18:12	1051
Lead	ND	ug/L	1.0		1	04/12/20	04/13/20 18:12	1051
Nickel	13.8	ug/L	1.00		1	04/12/20	04/13/20 18:12	1051
Zinc	25.1	ug/L	20.0		1	04/12/20	04/13/20 18:12	1051

Total Metals + Hardness Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	1.8	ug/L	1.0		1	04/09/20	04/09/20 21:22	1051
Lead	ND	ug/L	1.0		1	04/09/20	04/09/20 21:22	1051
Nickel	14.3	ug/L	1.00		1	04/09/20	04/09/20 21:22	1051
Zinc	32.1	ug/L	20.0		1	04/09/20	04/09/20 21:22	1051
Hardness (Ca & Mg)	20	mg/L	0.66		1	04/09/20	04/09/20 21:22	1051

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 173365 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Chloromethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Vinyl Chloride	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Bromomethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Chloroethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Methylene Chloride	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Chloroform	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Benzene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Trichloroethene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20040717

Sample ID: Effluent VSP-4 **Date/Time Sampled: 04/07/2020 12:00** **PSS Sample ID: 20040717-001**
Matrix: WASTE WATER **Date/Time Received: 04/07/2020 13:00**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 173365 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Bromodichloromethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Toluene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Tetrachloroethylene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Dibromochloromethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Chlorobenzene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Ethylbenzene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Bromoform	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:35	1011
Surrogate(s) Recovery Limits								
Dibromofluoromethane	105	%	87-120		1	04/08/20	04/08/20 16:35	1011
4-Bromofluorobenzene	106	%	85-147		1	04/08/20	04/08/20 16:35	1011
Toluene-D8	99	%	88-110		1	04/08/20	04/08/20 16:35	1011

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	04/07/20	04/07/20 16:25	1061

Biochemical Oxygen Demand Analytical Method: SM 5210B -2011

Start time: 08-Apr-20 15:00

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		04/13/20	04/13/20 11:45	4005

Case Narrative

Project Name: Kop Flex

PSS Project No.: 20040717

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

20040717: Analyses associated with analyst code 4005 were performed by Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

Analytical:

Volatile Organics Compounds (TVO)

Batch: 173365

A target analyte was detected in the method blank: Chloromethane was 0.15ppb.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

Lab Chronology

Project Name: Kop Flex
 PSS Project No.: 20040717

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	20040717-001	W	81090	173442	04/09/2020 19:06	04/09/2020 21:22
	81090-1-BKS	BKS	81090-1-BKS	W	81090	173442	04/09/2020 19:06	04/09/2020 21:17
	81090-1-BLK	BLK	81090-1-BLK	W	81090	173442	04/09/2020 19:06	04/09/2020 21:12
	Effluent VSP-4 S	MS	20040717-001 S	W	81090	173442	04/09/2020 19:06	04/09/2020 21:26
	Effluent VSP-4 SD	MSD	20040717-001 S	W	81090	173442	04/09/2020 19:06	04/09/2020 21:31
EPA 200.8	Effluent VSP-4	Initial	20040717-001	W	81105	173487	04/12/2020 17:05	04/13/2020 18:12
	81105-1-BKS	BKS	81105-1-BKS	W	81105	173487	04/12/2020 17:05	04/13/2020 18:07
	81105-1-BLK	BLK	81105-1-BLK	W	81105	173487	04/12/2020 17:05	04/13/2020 18:02
	Effluent VSP-4 S	MS	20040717-001 S	W	81105	173487	04/12/2020 17:05	04/13/2020 18:17
	Effluent VSP-4 SD	MSD	20040717-001 S	W	81105	173487	04/12/2020 17:05	04/13/2020 18:22
EPA 624 .1	Effluent VSP-4	Initial	20040717-001	W	81072	173365	04/08/2020 09:40	04/08/2020 16:35
	81072-1-BKS	BKS	81072-1-BKS	W	81072	173365	04/08/2020 09:40	04/08/2020 11:14
	81072-1-BLK	BLK	81072-1-BLK	W	81072	173365	04/08/2020 09:40	04/08/2020 13:07
	Combined Effluent-040620 S	MS	20040716-001 S	W	81072	173365	04/08/2020 09:40	04/08/2020 17:20
	Combined Effluent-040620 SD	MSD	20040716-001 S	W	81072	173365	04/08/2020 09:40	04/08/2020 17:43
SM 2540D -2011	Effluent VSP-4	Initial	20040717-001	W	173317	173317	04/07/2020 16:25	04/07/2020 16:25
	173317-1-BLK	BLK	173317-1-BLK	W	173317	173317	04/07/2020 14:35	04/07/2020 14:35
	601 D	MD	20040610-002 D	W	173317	173317	04/07/2020 14:35	04/07/2020 14:35
SM 5210B -2011	Effluent VSP-4	Initial	20040717-001	W	173642	173642	04/13/2020 11:45	04/13/2020 11:45

Project Name Kop Flex
PSS Project No.: 20040717

Analytical Method: SM 2540D -2011

Seq Number: 173317 Matrix: Water
MB Sample Id: 173317-1-BLK

Parameter	MB Result	LOD	RL	Units	Flag
Suspended Solids	ND	0.5000	1.000	mg/L	

Analytical Method: EPA 200.8

Seq Number: 173442 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 81090-1-BLK LCS Sample Id: 81090-1-BKS Date Prep: 04/09/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	39.85	100	85-115	ug/L	
Lead	<1.000	40.00	39.07	98	85-115	ug/L	
Nickel	<1.000	40.00	39.06	98	85-115	ug/L	
Zinc	<20.00	200	186.9	93	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 173487 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 81105-1-BLK LCS Sample Id: 81105-1-BKS Date Prep: 04/12/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	40.01	100	85-115	ug/L	
Lead	<1.000	40.00	44.07	110	85-115	ug/L	
Nickel	<1.000	40.00	40.63	102	85-115	ug/L	
Zinc	<20.00	200	206.7	103	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 173442 Matrix: Waste Water Prep Method: E200.8_PREP
Parent Sample Id: 20040717-001 MS Sample Id: 20040717-001 S Date Prep: 04/09/20
MSD Sample Id: 20040717-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	1.830	40.00	43.50	104	44.09	106	70-130	2	25	ug/L	
Lead	<1.000	40.00	37.32	93	38.62	97	70-130	4	25	ug/L	
Nickel	14.26	40.00	55.58	103	56.38	105	70-130	2	25	ug/L	
Zinc	32.11	200	226.7	97	229	98	70-130	1	25	ug/L	

Project Name Kop Flex
PSS Project No.: 20040717

Analytical Method: EPA 200.8

Seq Number: 173487
Parent Sample Id: 20040717-001

Matrix: Waste Water
MS Sample Id: 20040717-001 S

Prep Method: E200.8_PREP
Date Prep: 04/12/20
MSD Sample Id: 20040717-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	1.312	40.00	42.68	103	43.70	106	70-130	3	25	ug/L	
Lead	<1.000	40.00	42.99	107	41.82	105	70-130	2	25	ug/L	
Nickel	13.77	40.00	55.49	104	56.82	108	70-130	4	25	ug/L	
Zinc	25.05	200	241	108	245.4	110	70-130	2	25	ug/L	

Analytical Method: EPA 624 .1

Seq Number: 173365
MB Sample Id: 81072-1-BLK

Matrix: Water
LCS Sample Id: 81072-1-BKS

Prep Method: E624PREP
Date Prep: 04/08/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	56.06	112	54-148	ug/L	
Chloromethane	<1.000	50.00	53.80	108	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	66.75	134	5-195	ug/L	
Bromomethane	<1.000	50.00	45.82	92	15-185	ug/L	
Chloroethane	<1.000	50.00	52.51	105	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	55.90	112	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.47	97	50-150	ug/L	
Methylene Chloride	<1.000	50.00	49.47	99	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	48.53	97	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	52.71	105	70-130	ug/L	
Chloroform	<1.000	50.00	52.71	105	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	49.09	98	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	50.22	100	70-130	ug/L	
Benzene	<1.000	50.00	49.01	98	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	53.00	106	70-130	ug/L	
Trichloroethene	<1.000	50.00	47.74	95	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.36	103	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	54.81	110	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	52.91	106	25-175	ug/L	
Toluene	<1.000	50.00	48.55	97	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	48.25	97	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.71	101	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	45.51	91	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	49.16	98	70-135	ug/L	
Chlorobenzene	<1.000	50.00	48.20	96	65-135	ug/L	
Ethylbenzene	<1.000	50.00	50.85	102	60-140	ug/L	
Bromoform	<1.000	50.00	48.18	96	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	50.47	101	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	48.99	98	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	48.54	97	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	49.07	98	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	104		103		87-120	%
4-Bromofluorobenzene	104		101		85-147	%
Toluene-D8	100		100		88-110	%

Project Name Kop Flex
PSS Project No.: 20040717

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Sample Receipt Checklist

Project Name: Kop Flex
 PSS Project No.: 20040717

Client Name WSP USA - Herndon
Disposal Date 05/12/2020

Received By Thomas Wingate
Date Received 04/07/2020 01:00:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 2

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 4.2
 Temp Blank Present No

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Shannon Burke
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
 Total No. of Containers Received 7

Preservation

Total Metals (pH<2) Yes
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) Yes
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) No
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

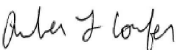
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 04/07/2020

PM Review and Approval:



Amber Confer

Date: 04/08/2020

Project Name: Kop Flex
PSS Project No.: 20040718

April 21, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **20040718**
Project Name: Kop Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04



Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20040718**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on May 12, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal

Laboratory Manager

Explanation of Qualifiers

Project Name: Kop Flex

PSS Project No.: 20040718

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 04/07/2020 at 01:00 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20040718-001	Effluent VSP-4	WASTE WATER	04/07/20 12:00
20040718-002	Influent VSP-1	GROUND WATER	04/07/20 12:20
20040718-003	TB-040720	WATER	04/07/20 00:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20040718

Sample ID: Effluent VSP-4 **Date/Time Sampled: 04/07/2020 12:00** **PSS Sample ID: 20040718-001**
Matrix: WASTE WATER **Date/Time Received: 04/07/2020 13:00**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	04/21/20	04/21/20 01:22	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	94	%	80-120		1	04/21/20	04/21/20 01:22	1045

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20040718

Sample ID: Influent VSP-1 **Date/Time Sampled: 04/07/2020 12:20** **PSS Sample ID: 20040718-002**
Matrix: GROUND WATER **Date/Time Received: 04/07/2020 13:00**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	04/10/20	04/10/20 17:06	1011
Benzene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Bromochloromethane	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Bromodichloromethane	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Bromoform	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Bromomethane	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	04/10/20	04/10/20 17:06	1011
Carbon Disulfide	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Carbon tetrachloride	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Chlorobenzene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Chloroethane	3.7	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Chloroform	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Chloromethane	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Cyclohexane	ND	ug/L	10		1	04/10/20	04/10/20 17:06	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	04/10/20	04/10/20 17:06	1011
Dibromochloromethane	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
1,1-Dichloroethane	45	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
1,2-Dichloroethane	1.5	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
cis-1,2-Dichloroethene	1.2	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
1,1-Dichloroethene	220	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Ethylbenzene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	04/10/20	04/10/20 17:06	1011
Isopropylbenzene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Methyl Acetate	ND	ug/L	10		1	04/10/20	04/10/20 17:06	1011
Methylcyclohexane	ND	ug/L	10		1	04/10/20	04/10/20 17:06	1011
Methylene chloride	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20040718

Sample ID: Influent VSP-1 **Date/Time Sampled: 04/07/2020 12:20** **PSS Sample ID: 20040718-002**
Matrix: GROUND WATER **Date/Time Received: 04/07/2020 13:00**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	04/10/20	04/10/20 17:06	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Naphthalene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Styrene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Tetrachloroethene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Toluene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
1,1,1-Trichloroethane	21	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Trichloroethene	1.2	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Vinyl chloride	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
m&p-Xylene	ND	ug/L	2.0		1	04/10/20	04/10/20 17:06	1011
o-Xylene	ND	ug/L	1.0		1	04/10/20	04/10/20 17:06	1011
Surrogate(s)	Recovery		Limits					
4-Bromofluorobenzene	107 %		87-109		1	04/10/20	04/10/20 17:06	1011
Dibromofluoromethane	95 %		93-111		1	04/10/20	04/10/20 17:06	1011
Toluene-D8	104 %		91-109		1	04/10/20	04/10/20 17:06	1011

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	260	ug/L	10		10	04/21/20	04/21/20 01:44	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	93 %		80-120		10	04/21/20	04/21/20 01:44	1045

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20040718

Sample ID: TB-040720 **Date/Time Sampled: 04/07/2020 00:00** **PSS Sample ID: 20040718-003**
Matrix: WATER **Date/Time Received: 04/07/2020 13:00**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 173365 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Chloromethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Vinyl Chloride	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Bromomethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Chloroethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Methylene Chloride	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Chloroform	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Benzene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Trichloroethene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Bromodichloromethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Toluene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Tetrachloroethylene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Dibromochloromethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Chlorobenzene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Ethylbenzene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
Bromoform	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	04/08/20	04/08/20 16:57	1011

Surrogate(s)	Recovery	Limits			
Dibromofluoromethane	107 %	87-120	1	04/08/20	04/08/20 16:57 1011
4-Bromofluorobenzene	108 %	85-147	1	04/08/20	04/08/20 16:57 1011
Toluene-D8	101 %	88-110	1	04/08/20	04/08/20 16:57 1011

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20040718

Sample ID: TB-040720 **Date/Time Sampled: 04/07/2020 00:00** **PSS Sample ID: 20040718-003**

Matrix: WATER **Date/Time Received: 04/07/2020 13:00**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	04/21/20	04/21/20 00:59	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	93	%	80-120		1	04/21/20	04/21/20 00:59	1045

Case Narrative

Project Name: Kop Flex

PSS Project No.: 20040718

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

General Comments:

Per client, analyze trip blank for 1,4 dioxane and EPA 624.

Analytical:

Volatile Organics Compounds (TVO)

Batch: 173365

A target analyte was detected in the method blank: Chloromethane was 0.15ppb.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop Flex
 PSS Project No.: 20040718

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-040720	Initial	20040718-003	W	81072	173365	04/08/2020 09:40	04/08/2020 16:57
	81072-1-BKS	BKS	81072-1-BKS	W	81072	173365	04/08/2020 09:40	04/08/2020 11:14
	81072-1-BLK	BLK	81072-1-BLK	W	81072	173365	04/08/2020 09:40	04/08/2020 13:07
	Combined Effluent-040620 S	MS	20040716-001 S	W	81072	173365	04/08/2020 09:40	04/08/2020 17:20
	Combined Effluent-040620 SD	MSD	20040716-001 S	W	81072	173365	04/08/2020 09:40	04/08/2020 17:43
SW-846 8260 B	Influent VSP-1	Initial	20040718-002	W	81108	173460	04/10/2020 07:43	04/10/2020 17:06
	81108-1-BKS	BKS	81108-1-BKS	W	81108	173460	04/10/2020 07:43	04/10/2020 08:48
	81108-1-BLK	BLK	81108-1-BLK	W	81108	173460	04/10/2020 07:43	04/10/2020 10:41
	13850-MWB-4/20 S	MS	20040303-002 S	W	81108	173460	04/10/2020 07:43	04/10/2020 18:37
	13850-MWB-4/20 SD	MSD	20040303-002 S	W	81108	173460	04/10/2020 07:43	04/10/2020 18:59
SW-846 8260 B-Modified	Effluent VSP-4	Initial	20040718-001	W	81197	173653	04/21/2020 12:37	04/21/2020 01:22
	Influent VSP-1	Initial	20040718-002	W	81197	173653	04/21/2020 12:37	04/21/2020 01:44
	TB-040720	Initial	20040718-003	W	81197	173653	04/21/2020 12:37	04/21/2020 00:59
	81197-1-BKS	BKS	81197-1-BKS	W	81197	173653	04/21/2020 12:37	04/20/2020 22:45
	81197-1-BLK	BLK	81197-1-BLK	W	81197	173653	04/21/2020 12:37	04/21/2020 00:37
	81197-1-BSD	BSD	81197-1-BSD	W	81197	173653	04/21/2020 12:37	04/20/2020 23:08

Project Name Kop Flex
PSS Project No.: 20040718

Analytical Method: EPA 624 .1

Seq Number: 173365

MB Sample Id: 81072-1-BLK

Matrix: Water

LCS Sample Id: 81072-1-BKS

Prep Method: E624PREP

Date Prep: 04/08/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	56.06	112	54-148	ug/L	
Chloromethane	<1.000	50.00	53.80	108	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	66.75	134	5-195	ug/L	
Bromomethane	<1.000	50.00	45.82	92	15-185	ug/L	
Chloroethane	<1.000	50.00	52.51	105	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	55.90	112	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.47	97	50-150	ug/L	
Methylene Chloride	<1.000	50.00	49.47	99	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	48.53	97	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	52.71	105	70-130	ug/L	
Chloroform	<1.000	50.00	52.71	105	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	49.09	98	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	50.22	100	70-130	ug/L	
Benzene	<1.000	50.00	49.01	98	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	53.00	106	70-130	ug/L	
Trichloroethene	<1.000	50.00	47.74	95	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.36	103	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	54.81	110	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	52.91	106	25-175	ug/L	
Toluene	<1.000	50.00	48.55	97	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	48.25	97	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.71	101	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	45.51	91	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	49.16	98	70-135	ug/L	
Chlorobenzene	<1.000	50.00	48.20	96	65-135	ug/L	
Ethylbenzene	<1.000	50.00	50.85	102	60-140	ug/L	
Bromoform	<1.000	50.00	48.18	96	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	50.47	101	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	48.99	98	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	48.54	97	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	49.07	98	65-135	ug/L	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	
Dibromofluoromethane	104		103		87-120	%	
4-Bromofluorobenzene	104		101		85-147	%	
Toluene-D8	100		100		88-110	%	

Project Name Kop Flex
PSS Project No.: 20040718

Analytical Method: SW-846 8260 B

Seq Number: 173460

MB Sample Id: 81108-1-BLK

Matrix: Water

LCS Sample Id: 81108-1-BKS

Prep Method: SW5030B

Date Prep: 04/10/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<5.000	50.00	34.54	69	55-120	ug/L	
Benzene	<1.000	50.00	48.66	97	87-123	ug/L	
Bromochloromethane	<1.000	50.00	47.33	95	74-136	ug/L	
Bromodichloromethane	<1.000	50.00	48.28	97	83-125	ug/L	
Bromoform	<1.000	50.00	46.78	94	72-129	ug/L	
Bromomethane	<1.000	50.00	49.20	98	45-167	ug/L	
2-Butanone (MEK)	<5.000	50.00	36.10	72	45-136	ug/L	
Carbon Disulfide	<1.000	50.00	50.66	101	87-123	ug/L	
Carbon tetrachloride	<1.000	50.00	51.63	103	79-133	ug/L	
Chlorobenzene	<1.000	50.00	49.06	98	87-127	ug/L	
Chloroethane	<1.000	50.00	44.36	89	81-122	ug/L	
Chloroform	<1.000	50.00	46.86	94	76-129	ug/L	
Chloromethane	<1.000	50.00	43.78	88	59-121	ug/L	
Cyclohexane	<10.00	50.00	50.80	102	83-122	ug/L	
1,2-Dibromo-3-chloropropane	<5.000	50.00	44.31	89	63-140	ug/L	
Dibromochloromethane	<1.000	50.00	47.90	96	73-139	ug/L	
1,2-Dibromoethane	<1.000	50.00	50.42	101	80-127	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	50.76	102	82-129	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	51.28	103	88-127	ug/L	
Dichlorodifluoromethane	<1.000	50.00	48.77	98	70-131	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	49.19	98	84-129	ug/L	
1,1-Dichloroethane	<1.000	50.00	47.70	95	85-120	ug/L	
1,2-Dichloroethane	<1.000	50.00	47.27	95	86-125	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	44.36	89	86-126	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.44	97	85-123	ug/L	
1,2-Dichloropropane	<1.000	50.00	50.13	100	83-120	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	49.16	98	81-125	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	49.37	99	79-121	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	47.90	96	87-120	ug/L	
Ethylbenzene	<1.000	50.00	53.04	106	82-128	ug/L	
2-Hexanone (MBK)	<5.000	50.00	39.89	80	56-116	ug/L	
Isopropylbenzene	<1.000	50.00	48.06	96	81-128	ug/L	
Methyl Acetate	<10.00	50.00	45.33	91	68-129	ug/L	
Methylcyclohexane	<10.00	50.00	53.63	107	84-127	ug/L	
Methylene chloride	<1.000	50.00	46.75	94	85-119	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	43.41	87	57-116	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	48.39	97	61-130	ug/L	
Naphthalene	<1.000	50.00	48.19	96	74-114	ug/L	
Styrene	<1.000	50.00	48.89	98	76-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	46.44	93	79-131	ug/L	
Tetrachloroethene	<1.000	50.00	49.70	99	85-131	ug/L	
Toluene	<1.000	50.00	50.11	100	82-127	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	54.57	109	79-123	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	51.03	102	78-123	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	50.34	101	87-125	ug/L	
Trichloroethene	<1.000	50.00	49.83	100	87-124	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	48.85	98	84-127	ug/L	
Trichlorofluoromethane	<1.000	50.00	48.05	96	85-130	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	49.35	99	81-132	ug/L	
Vinyl chloride	<1.000	50.00	45.77	92	66-133	ug/L	
m&p-Xylene	<2.000	100	97.13	97	78-126	ug/L	

Project Name Kop Flex
PSS Project No.: 20040718

Analytical Method: SW-846 8260 B

Seq Number: 173460

MB Sample Id: 81108-1-BLK

Matrix: Water

LCS Sample Id: 81108-1-BKS

Prep Method: SW5030B

Date Prep: 04/10/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	48.11	96	75-130	ug/L	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Flag
4-Bromofluorobenzene	106		98		87-109	%	
Dibromofluoromethane	100		96		93-111	%	
Toluene-D8	99		101		91-109	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 173653

MB Sample Id: 81197-1-BLK

Matrix: Water

LCS Sample Id: 81197-1-BKS

Prep Method: SW5030B

Date Prep: 04/21/20

LCSD Sample Id: 81197-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	26.45	88	32.95	110	50-150	22	20	ug/L	F
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Flag		
Toluene-D8	93		96		95		80-120	%			

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

1 *CLIENT: <u>WSP USA</u> *OFFICE LOC: <u>Herndon, VA</u>		PSS Work Order #: <u>20040718</u>		PAGE <u>1</u> OF <u>1</u>						
*PROJECT MGR: <u>Eric Johnson</u> *PHONE NO.: <u>(703) 709-6500</u>		Matrix Codes: SW =Surface Wtr DW =Drinking Wtr GW =Ground Wtr WW =Waste Wtr O =Oil S =Soil L =Liquid SOL =Solid A =Air WI =Wipe								
EMAIL: <u>eric.johnson@wsp.com</u> FAX NO.: ()		No. CONTAINERS:								
*PROJECT NAME: <u>Kop Flex</u> PROJECT NO.: <u>3140154S.010/04</u>		Preservatives Used: <u>HCl HCl</u>								
SITE LOCATION: <u>Hanover, MD</u> P.O. NO.:		Analysis/Method Required:								
SAMPLER(S): <u>Shannon Burke</u> DW CERT NO.:		C = COMP * <u>3</u> G = GRAB								
2		1,4-dioxane (8240B SIM) VOL5 (8240B)								
LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No. CONTAINERS	SAMPLE TYPE	Preservatives Used	Analysis/Method Required	REMARKS	
1	Effluent VSP-4	4/7/20	1200	WW	3	G	X			
2	Influent VSP-1	4/7/20	1220	GW	6	G	X X			
3	TB-040720	4/7/20	-	W	4	-	X X		Trip blank	
5		4								
Relinquished By: (1)	Date	Time	Received By:		*Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			# of Coolers: <u>2</u> Custody Seal: <u>Cooler-Intact</u>		
Relinquished By: (2)	Date	Time	Received By:		Data Deliverables Required: COA <input type="checkbox"/> QC <input type="checkbox"/> SUMM <input type="checkbox"/> CLP <input type="checkbox"/> LIKE <input type="checkbox"/> OTHER <input type="checkbox"/>			Ice Present: <u>PEF</u> Temp: <u>3.2 to 4.2°C</u> Shipping Carrier: <u>Clow</u>		
Relinquished By: (3)	Date	Time	Received By:		Special Instructions: <u>Standard 10-day TAT</u>					
Relinquished By: (4)	Date	Time	Received By:		DW COMPLIANCE? YES <input type="checkbox"/>		EDD FORMAT TYPE: _____		STATE RESULTS REPORTED TO: MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER _____	

6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED

Sample Receipt Checklist

Project Name: Kop Flex
 PSS Project No.: 20040718

Client Name WSP USA - Herndon
Disposal Date 05/12/2020

Received By Thomas Wingate
Date Received 04/07/2020 01:00:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 2

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 4.2
 Temp Blank Present No

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Shannon Burke
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 3
 Total No. of Containers Received 13

Preservation

Total Metals (pH<2) N/A
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) No
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

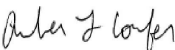
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 04/07/2020

PM Review and Approval:



Amber Confer
 Page 14 of 14

Date: 04/08/2020

Project Name: Kop Flex
PSS Project No.: 20052809

June 11, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **20052809**
Project Name: Kop Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04



Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20052809**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on July 2, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop Flex
 PSS Project No.: 20052809

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 05/28/2020 at 12:58 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20052809-001	Effluent VSP-4	WASTE WATER	05/28/20 12:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C** Results Pending Final Confirmation.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail** The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J** The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL** This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND** Not Detected at or above the reporting limit.
- RL** PSS Reporting Limit.
- U** Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
 State Certifications: MD 179, WV 303
 Regulated Soil Permit: P330-12-00268
 NSWC USCG Accepted Laboratory
 LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20052809

Sample ID: Effluent VSP-4 **Date/Time Sampled: 05/28/2020 12:00** **PSS Sample ID: 20052809-001**
Matrix: WASTE WATER **Date/Time Received: 05/28/2020 12:58**

Dissolved Metals Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	1.2	ug/L	1.0		1	06/01/20	06/01/20 18:21	1064
Lead	ND	ug/L	1.0		1	06/01/20	06/01/20 18:21	1064
Nickel	14.9	ug/L	1.00		1	06/01/20	06/01/20 18:21	1064
Zinc	23.4	ug/L	20.0		1	06/01/20	06/01/20 18:21	1064

Total Metals + Hardness Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	2.6	ug/L	1.0		1	06/01/20	06/01/20 16:10	1064
Lead	ND	ug/L	1.0		1	06/01/20	06/01/20 16:10	1064
Nickel	15.8	ug/L	1.00		1	06/01/20	06/01/20 16:10	1064
Zinc	32.4	ug/L	20.0		1	06/01/20	06/01/20 16:10	1064
Hardness (Ca & Mg)	18	mg/L	0.66		1	06/01/20	06/01/20 16:10	1064

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 174750 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Chloromethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Vinyl Chloride	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Bromomethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Chloroethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Methylene Chloride	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Chloroform	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Benzene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Trichloroethene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20052809

Sample ID: Effluent VSP-4 **Date/Time Sampled: 05/28/2020 12:00** **PSS Sample ID: 20052809-001**
Matrix: WASTE WATER **Date/Time Received: 05/28/2020 12:58**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 174750 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Bromodichloromethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Toluene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Tetrachloroethylene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Dibromochloromethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Chlorobenzene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Ethylbenzene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Bromoform	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:53	1011
Surrogate(s) Recovery Limits								
Dibromofluoromethane	108	%	87-120		1	05/29/20	05/29/20 14:53	1011
4-Bromofluorobenzene	103	%	85-147		1	05/29/20	05/29/20 14:53	1011
Toluene-D8	99	%	88-110		1	05/29/20	05/29/20 14:53	1011

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	05/29/20	05/29/20 14:23	1061

Biochemical Oxygen Demand Analytical Method: SM 5210B -2011

Start time: 28-May-20 15:00

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		06/02/20	06/02/20 14:45	4005

Case Narrative

Project Name: Kop Flex

PSS Project No.: 20052809

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

20052809: Analyses associated with analyst code 4005 were performed by Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

Analytical:

Volatile Organics Compounds (TVO)

Batch: 174750

Method exceedance: A target analyte was detected in the method blank; Methylene Chloride was 0.39 ppb and Toluene was 0.26 ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

Lab Chronology

Project Name: Kop Flex
 PSS Project No.: 20052809

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	20052809-001	W	81686	174805	06/01/2020 15:11	06/01/2020 16:10
	81686-1-BKS	BKS	81686-1-BKS	W	81686	174805	06/01/2020 15:11	06/01/2020 16:05
	81686-1-BLK	BLK	81686-1-BLK	W	81686	174805	06/01/2020 15:11	06/01/2020 16:00
	Kitchen Sink S	MS	20052801-001 S	W	81686	174805	06/01/2020 15:16	06/01/2020 17:37
	Effluent VSP-4 S	MS	20052809-001 S	W	81686	174805	06/01/2020 15:11	06/01/2020 16:14
	Effluent VSP-4 SD	MSD	20052809-001 S	W	81686	174805	06/01/2020 15:11	06/01/2020 16:19
EPA 200.8	Effluent VSP-4	Initial	20052809-001	W	81687	174811	06/01/2020 15:12	06/01/2020 18:21
	81687-1-BKS	BKS	81687-1-BKS	W	81687	174811	06/01/2020 15:12	06/01/2020 18:16
	81687-1-BLK	BLK	81687-1-BLK	W	81687	174811	06/01/2020 15:12	06/01/2020 18:11
	Effluent VSP-4 S	MS	20052809-001 S	W	81687	174811	06/01/2020 15:12	06/01/2020 18:25
	Effluent VSP-4 SD	MSD	20052809-001 S	W	81687	174811	06/01/2020 15:12	06/01/2020 18:30
EPA 624 .1	Effluent VSP-4	Initial	20052809-001	W	81676	174750	05/29/2020 10:19	05/29/2020 14:53
	81676-1-BKS	BKS	81676-1-BKS	W	81676	174750	05/29/2020 10:19	05/29/2020 11:52
	81676-1-BLK	BLK	81676-1-BLK	W	81676	174750	05/29/2020 10:19	05/29/2020 13:45
	Effluent VSP-4 S	MS	20052809-001 S	W	81676	174750	05/29/2020 10:19	05/29/2020 18:39
	Effluent VSP-4 SD	MSD	20052809-001 S	W	81676	174750	05/29/2020 10:19	05/29/2020 19:02
SM 2540D -2011	Effluent VSP-4	Initial	20052809-001	W	174724	174724	05/29/2020 14:23	05/29/2020 14:23
	174724-1-BLK	BLK	174724-1-BLK	W	174724	174724	05/29/2020 14:23	05/29/2020 14:23
	Basin 1 D	MD	20052805-001 D	W	174724	174724	05/29/2020 14:23	05/29/2020 14:23
SM 5210B -2011	Effluent VSP-4	Initial	20052809-001	W	175079	175079	06/02/2020 14:45	06/02/2020 14:45

Project Name Kop Flex
PSS Project No.: 20052809

Analytical Method: SM 2540D -2011

Seq Number: 174724 Matrix: Water
MB Sample Id: 174724-1-BLK

Parameter	MB Result	LOD	RL	Units	Flag
Suspended Solids	ND	0.5000	1.000	mg/L	

Analytical Method: EPA 200.8

Seq Number: 174805 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 81686-1-BLK LCS Sample Id: 81686-1-BKS Date Prep: 06/01/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	42.15	105	85-115	ug/L	
Lead	<1.000	40.00	39.85	100	85-115	ug/L	
Nickel	<1.000	40.00	39.69	99	85-115	ug/L	
Zinc	<20.00	200	213.6	107	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 174811 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 81687-1-BLK LCS Sample Id: 81687-1-BKS Date Prep: 06/01/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	40.00	100	85-115	ug/L	
Lead	<1.000	40.00	38.80	97	85-115	ug/L	
Nickel	<1.000	40.00	37.60	94	85-115	ug/L	
Zinc	<20.00	200	199	100	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 174805 Matrix: Waste Water Prep Method: E200.8_PREP
Parent Sample Id: 20052809-001 MS Sample Id: 20052809-001 S Date Prep: 06/01/20
MSD Sample Id: 20052809-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	2.589	40.00	43.26	102	43.15	101	70-130	1	25	ug/L	
Lead	<1.000	40.00	40.30	101	40.17	100	70-130	1	25	ug/L	
Nickel	15.79	40.00	55.95	100	54.45	97	70-130	3	25	ug/L	
Zinc	32.43	200	224.4	96	223.4	95	70-130	1	25	ug/L	

Project Name Kop Flex
PSS Project No.: 20052809

Analytical Method: EPA 200.8

Seq Number: 174811
Parent Sample Id: 20052809-001

Matrix: Waste Water
MS Sample Id: 20052809-001 S

Prep Method: E200.8_PREP
Date Prep: 06/01/20
MSD Sample Id: 20052809-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	1.232	40.00	40.18	97	40.40	98	70-130	1	25	ug/L	
Lead	<1.000	40.00	44.82	112	47.70	119	70-130	6	25	ug/L	
Nickel	14.90	40.00	52.97	95	53.52	97	70-130	2	25	ug/L	
Zinc	23.44	200	220.7	99	222.3	99	70-130	0	25	ug/L	

Analytical Method: EPA 624 .1

Seq Number: 174750
MB Sample Id: 81676-1-BLK

Matrix: Water
LCS Sample Id: 81676-1-BKS

Prep Method: E624PREP
Date Prep: 05/29/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	43.22	86	54-148	ug/L	
Chloromethane	<1.000	50.00	43.51	87	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	44.17	88	5-195	ug/L	
Bromomethane	<1.000	50.00	47.24	94	15-185	ug/L	
Chloroethane	<1.000	50.00	43.75	88	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	47.38	95	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	49.70	99	50-150	ug/L	
Methylene Chloride	<1.000	50.00	47.96	96	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	50.53	101	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	50.69	101	70-130	ug/L	
Chloroform	<1.000	50.00	50.48	101	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	53.93	108	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	53.98	108	70-130	ug/L	
Benzene	<1.000	50.00	50.83	102	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	48.63	97	70-130	ug/L	
Trichloroethene	<1.000	50.00	51.34	103	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.21	102	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	53.19	106	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	51.46	103	25-175	ug/L	
Toluene	<1.000	50.00	50.80	102	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	51.53	103	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.62	101	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	52.30	105	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	50.74	101	70-135	ug/L	
Chlorobenzene	<1.000	50.00	51.69	103	65-135	ug/L	
Ethylbenzene	<1.000	50.00	55.03	110	60-140	ug/L	
Bromoform	<1.000	50.00	50.54	101	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	52.05	104	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	53.92	108	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	51.82	104	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	53.69	107	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	107		104		87-120	%
4-Bromofluorobenzene	102		100		85-147	%
Toluene-D8	98		98		88-110	%

Project Name Kop Flex
PSS Project No.: 20052809

Analytical Method: EPA 624 .1

Seq Number: 174750

Parent Sample Id: 20052809-001

Matrix: Waste Water

MS Sample Id: 20052809-001 S

Prep Method: E624PREP

Date Prep: 05/29/20

MSD Sample Id: 20052809-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	43.63	87	41.74	83	43-150	5	27	ug/L	
Chloromethane	<1.000	50.00	46.19	92	45.62	91	1-273	1	60	ug/L	
Vinyl Chloride	<1.000	50.00	45.31	91	44.84	90	1-251	1	66	ug/L	
Bromomethane	<1.000	50.00	49.16	98	46.23	92	1-242	6	61	ug/L	
Chloroethane	<1.000	50.00	46.45	93	44.47	89	14-230	4	78	ug/L	
Trichlorofluoromethane	<1.000	50.00	48.78	98	47.48	95	17-181	3	84	ug/L	
1,1-Dichloroethene	<1.000	50.00	51.00	102	49.08	98	1-234	4	32	ug/L	
Methylene Chloride	<1.000	50.00	48.37	97	47.50	95	1-221	2	28	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	51.26	103	50.20	100	54-156	3	45	ug/L	
1,1-Dichloroethane	<1.000	50.00	51.77	104	50.92	102	59-155	2	40	ug/L	
Chloroform	<1.000	50.00	50.48	101	50.16	100	51-138	1	54	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	55.41	111	54.43	109	52-162	2	36	ug/L	
Carbon Tetrachloride	<1.000	50.00	54.40	109	53.36	107	70-140	2	41	ug/L	
Benzene	<1.000	50.00	52.42	105	50.95	102	37-151	3	61	ug/L	
1,2-Dichloroethane	<1.000	50.00	49.55	99	49.61	99	49-155	0	49	ug/L	
Trichloroethene	<1.000	50.00	51.27	103	50.41	101	70-157	2	48	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.61	103	51.01	102	1-210	1	55	ug/L	
Bromodichloromethane	<1.000	50.00	53.23	106	53.35	107	35-155	1	56	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	49.72	99	49.12	98	1-227	1	58	ug/L	
Toluene	<1.000	50.00	53.31	107	51.17	102	47-150	5	41	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	49.29	99	49.42	99	17-183	0	86	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.63	101	51.02	102	52-150	1	45	ug/L	
Tetrachloroethylene	<1.000	50.00	52.17	104	50.89	102	64-148	2	39	ug/L	
Dibromochloromethane	<1.000	50.00	50.16	100	50.86	102	53-149	2	50	ug/L	
Chlorobenzene	<1.000	50.00	51.87	104	51.10	102	37-160	2	53	ug/L	
Ethylbenzene	<1.000	50.00	55.27	111	54.03	108	37-162	3	63	ug/L	
Bromoform	<1.000	50.00	49.31	99	50.16	100	45-169	1	42	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	52.35	105	53.45	107	46-157	2	61	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	53.05	106	52.74	105	59-156	1	43	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	50.76	102	50.73	101	18-190	1	57	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	53.61	107	53.78	108	18-190	1	57	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
Dibromofluoromethane	102		102		87-120	%
4-Bromofluorobenzene	100		99		85-147	%
Toluene-D8	97		98		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

PHASE SEPARATION SCIENCE

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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①

PSS CLIENT: WSP		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 2005809			PAGE 1 OF 1			
BILL TO (if different):		PHONE #: 703-909-6500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe						
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com			# OF CONTAINERS SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes		HCl HNO ₃ HNO ₃		Preservative Codes 1 - HCl 2 - H ₂ SO ₄ 3 - HNO ₃ 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit
PROJECT NAME: Kop Flex		PROJECT #:				Analysis/Method Required		VOCs (624) Dissolved Metals Total Metals + Hardness BOD TSS		
SITE LOCATION: Hanover, MD		P.O. #: 31401545.010/04								
SAMPLER(S): Shannon Burlee		DW CERT #:								

②

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	HCl	HNO ₃	HNO ₃								
1	Effluent VSP-4	5/28/20	1200	WW	7	G	X	X	X	X	X						

③

Requested TAT (One TAT per COC)	Ice Present:
<input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other	(PRES) -TB 26°C
STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER _____	Custody Seal: Cooler Intact PRES-1 Temp: 7.1°C 8.3°C
COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW	# Coolers: PRES-1 Shipping Carrier: THE Client
EDD FORMAT TYPE	Special Instructions: Standard 10-day TAT Dissolved metals field-filtered Metals = Cu, Pb, Ni, Zn

④

Relinquished By: (1) Shannon Burlee	Date 5/28/20	Time 1258	Received By: [Signature]
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

⑤

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop Flex
PSS Project No.: 20052809

Client Name WSP USA - Herndon
Disposal Date 07/02/2020

Received By Thomas Wingate
Date Received 05/28/2020 12:58:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
Seal(s) Signed / Dated? Yes

Ice Present
Temp (deg C) 8.3
Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
Chain of Custody Yes

Sampler Name Shannon Burke
MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
Intact? Yes
Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
Total No. of Containers Received 7

Preservation

Total Metals (pH<2) Yes
Dissolved Metals, filtered within 15 minutes of collection (pH<2) Yes
Orthophosphorus, filtered within 15 minutes of collection N/A
Cyanides (pH>12) N/A
Sulfide (pH>9) N/A
TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
TOX, TKN, NH3, Total Phos (pH<2) N/A
VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
Do VOA vials have zero headspace? Yes
624 VOC (Rcvd at least one unpreserved VOA vial) No
524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

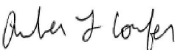
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 05/28/2020

PM Review and Approval:



Amber Confer

Date: 05/28/2020

Project Name: Kop Flex
PSS Project No.: 20052810

June 11, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **20052810**
Project Name: Kop Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04



Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20052810**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on July 2, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Project Name: Kop Flex
PSS Project No.: 20052810

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 05/28/2020 at 12:58 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20052810-001	Effluent VSP-4	WASTE WATER	05/28/20 12:00
20052810-002	TB-052820	WATER	05/28/20 11:06

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20052810

Sample ID: Effluent VSP-4 **Date/Time Sampled: 05/28/2020 12:00** **PSS Sample ID: 20052810-001**

Matrix: WASTE WATER **Date/Time Received: 05/28/2020 12:58**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	06/11/20	06/11/20 13:50	1011
Surrogate(s)	Recovery		Limits					
<i>Toluene-D8</i>	99	%	80-120		1	06/11/20	06/11/20 13:50	1011

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20052810

Sample ID: TB-052820 **Date/Time Sampled: 05/28/2020 11:06** **PSS Sample ID: 20052810-002**
Matrix: WATER **Date/Time Received: 05/28/2020 12:58**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 174750 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Chloromethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Vinyl Chloride	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Bromomethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Chloroethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Methylene Chloride	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Chloroform	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Benzene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Trichloroethene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Bromodichloromethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Toluene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Tetrachloroethylene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Dibromochloromethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Chlorobenzene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Ethylbenzene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
Bromoform	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	05/29/20	05/29/20 14:31	1011

Surrogate(s)	Recovery	Limits			
Dibromofluoromethane	107 %	87-120	1	05/29/20	05/29/20 14:31 1011
4-Bromofluorobenzene	100 %	85-147	1	05/29/20	05/29/20 14:31 1011
Toluene-D8	98 %	88-110	1	05/29/20	05/29/20 14:31 1011

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20052810

Sample ID: TB-052820 **Date/Time Sampled: 05/28/2020 11:06** **PSS Sample ID: 20052810-002**

Matrix: WATER **Date/Time Received: 05/28/2020 12:58**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	06/11/20	06/11/20 13:28	1011
Surrogate(s)	Recovery		Limits					
Toluene-D8	100	%	80-120		1	06/11/20	06/11/20 13:28	1011

Case Narrative

Project Name: Kop Flex

PSS Project No.: 20052810

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Analytical:

Volatile Organics Compounds (TVO)

Batch: 174750

Method exceedance: A target analyte was detected in the method blank; Methylene Chloride was 0.39 ppb and Toluene was 0.26 ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop Flex
 PSS Project No.: 20052810

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-052820	Initial	20052810-002	W	81676	174750	05/29/2020 10:19	05/29/2020 14:31
	81676-1-BKS	BKS	81676-1-BKS	W	81676	174750	05/29/2020 10:19	05/29/2020 11:52
	81676-1-BLK	BLK	81676-1-BLK	W	81676	174750	05/29/2020 10:19	05/29/2020 13:45
	Effluent VSP-4 S	MS	20052809-001 S	W	81676	174750	05/29/2020 10:19	05/29/2020 18:39
	Effluent VSP-4 SD	MSD	20052809-001 S	W	81676	174750	05/29/2020 10:19	05/29/2020 19:02
SW-846 8260 B-Modified	Effluent VSP-4	Initial	20052810-001	W	81841	175110	06/11/2020 07:07	06/11/2020 13:50
	TB-052820	Initial	20052810-002	W	81841	175110	06/11/2020 07:07	06/11/2020 13:28
	81841-1-BKS	BKS	81841-1-BKS	W	81841	175110	06/11/2020 07:07	06/11/2020 11:59
	81841-1-BLK	BLK	81841-1-BLK	W	81841	175110	06/11/2020 07:07	06/11/2020 13:06
	81841-1-BSD	BSD	81841-1-BSD	W	81841	175110	06/11/2020 07:07	06/11/2020 12:21

Project Name Kop Flex

PSS Project No.: 20052810

Analytical Method: EPA 624 .1

Seq Number: 174750

Matrix: Water

Prep Method: E624PREP

Date Prep: 05/29/20

MB Sample Id: 81676-1-BLK

LCS Sample Id: 81676-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	43.22	86	54-148	ug/L	
Chloromethane	<1.000	50.00	43.51	87	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	44.17	88	5-195	ug/L	
Bromomethane	<1.000	50.00	47.24	94	15-185	ug/L	
Chloroethane	<1.000	50.00	43.75	88	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	47.38	95	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	49.70	99	50-150	ug/L	
Methylene Chloride	<1.000	50.00	47.96	96	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	50.53	101	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	50.69	101	70-130	ug/L	
Chloroform	<1.000	50.00	50.48	101	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	53.93	108	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	53.98	108	70-130	ug/L	
Benzene	<1.000	50.00	50.83	102	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	48.63	97	70-130	ug/L	
Trichloroethene	<1.000	50.00	51.34	103	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.21	102	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	53.19	106	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	51.46	103	25-175	ug/L	
Toluene	<1.000	50.00	50.80	102	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	51.53	103	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.62	101	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	52.30	105	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	50.74	101	70-135	ug/L	
Chlorobenzene	<1.000	50.00	51.69	103	65-135	ug/L	
Ethylbenzene	<1.000	50.00	55.03	110	60-140	ug/L	
Bromoform	<1.000	50.00	50.54	101	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	52.05	104	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	53.92	108	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	51.82	104	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	53.69	107	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	107		104		87-120	%
4-Bromofluorobenzene	102		100		85-147	%
Toluene-D8	98		98		88-110	%

Analytical Method: SW-846 8260 B-Modified

Seq Number: 175110

Matrix: Water

Prep Method: SW5030B

Date Prep: 06/11/20

MB Sample Id: 81841-1-BLK

LCS Sample Id: 81841-1-BKS

LCSD Sample Id: 81841-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	29.31	98	31.29	104	50-150	6	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	98		98		101		80-120	%

Project Name Kop Flex
PSS Project No.: 20052810

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

**PHASE
SEPARATION
SCIENCE**

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

PSS CLIENT: WSP		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 2005810			PAGE 1 OF 1			
BILL TO (if different):		PHONE #: 703-709-6500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe						
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes: HCl HCl			Preservative Codes: 1 - HCL 2 - H ₂ SO ₄ 3 - HNO ₃ 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit	
PROJECT NAME: Kop Flex		PROJECT #: 31401545.010/04				Analysis/Method Required (H-10) (S-10) (S-10) (VOCs (6254))				
SITE LOCATION: Hanover MD		P.O. #:								
SAMPLER(S): Shannon Burke		DW CERT #:								
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Analysis/Method Required			Preservative Codes
1	Effluent VSP-4	5/28/20	1200	WW	3	G	X			
2	TB-052820				4	-	X X			Trip blank
Relinquished By: (1) Shannon Burke		Date: 5/28/20	Time: 1258	Received By: [Signature]	Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			Ice Present: PRES TB -2.6°C		
Relinquished By: (2)		Date	Time	Received By:	STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WW <input type="checkbox"/> OTHER			Custody Seal: Cover Intact		
Relinquished By: (3)		Date	Time	Received By:	COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW			# Coolers: 1 Temp: 8.1°-9.3°		
Relinquished By: (4)		Date	Time	Received By:	EDD FORMAT TYPE			Shipping Carrier: Client		
					Special Instructions: Standard 10-day TAT					

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop Flex
 PSS Project No.: 20052810

Client Name WSP USA - Herndon
Disposal Date 07/02/2020

Received By Thomas Wingate
Date Received 05/28/2020 12:58:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 9.3
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Shannon Burke
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 2
 Total No. of Containers Received 7


Preservation

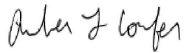
Total Metals (pH<2) N/A
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) No
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By:  Date: 05/28/2020
 Thomas Wingate

PM Review and Approval:  Date: 05/28/2020
 Amber Confer
 Page 11 of 11 Version 1.000

Project Name: Kop-Flex
PSS Project No.: 20062912

July 14, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20062912**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20062912**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on August 3, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Project Name: Kop-Flex
PSS Project No.: 20062912

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 06/29/2020 at 12:55 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20062912-001	Effluent VSP-4	WASTE WATER	06/29/20 11:30

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 20062912

Sample ID: Effluent VSP-4 **Date/Time Sampled: 06/29/2020 11:30** **PSS Sample ID: 20062912-001**
Matrix: WASTE WATER **Date/Time Received: 06/29/2020 12:55**

Dissolved Metals Analytical Method: EPA 200.8 Preparation Method: 200.8

Qualifier(s): See Sample Receipt section on Case Narrative. See Batch 175863 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	ND	ug/L	1.0		1	07/06/20	07/09/20 00:40	1064
Lead	ND	ug/L	1.0		1	07/06/20	07/09/20 00:40	1064
Nickel	14.8	ug/L	1.00		1	07/06/20	07/09/20 00:40	1064
Zinc	24.3	ug/L	20.0		1	07/06/20	07/09/20 00:40	1064

Total Metals + Hardness Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	5.5	ug/L	1.0		1	06/30/20	07/06/20 14:25	1064
Lead	ND	ug/L	1.0		1	06/30/20	07/01/20 00:42	1064
Nickel	14.5	ug/L	1.00		1	06/30/20	07/01/20 00:42	1064
Zinc	29.1	ug/L	20.0		1	06/30/20	07/01/20 00:42	1064
Hardness (Ca & Mg)	19.0	mg/L	0.660		1	06/30/20	07/01/20 00:42	1064

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Sample Receipt section on Case Narrative. See Batch 175653 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Chloromethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Vinyl Chloride	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Bromomethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Chloroethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Methylene Chloride	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Chloroform	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Benzene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Trichloroethene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20062912

Sample ID: Effluent VSP-4 **Date/Time Sampled: 06/29/2020 11:30** **PSS Sample ID: 20062912-001**
Matrix: WASTE WATER **Date/Time Received: 06/29/2020 12:55**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Sample Receipt section on Case Narrative. See Batch 175653 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Bromodichloromethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Toluene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Tetrachloroethylene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Dibromochloromethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Chlorobenzene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Ethylbenzene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Bromoform	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:16	1011
Surrogate(s)	Recovery		Limits					
<i>Dibromofluoromethane</i>	106 %		87-120		1	06/30/20	06/30/20 19:16	1011
<i>4-Bromofluorobenzene</i>	95 %		85-147		1	06/30/20	06/30/20 19:16	1011
<i>Toluene-D8</i>	101 %		88-110		1	06/30/20	06/30/20 19:16	1011

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	07/01/20	07/01/20 10:00	1064

Biochemical Oxygen Demand Analytical Method: SM 5210B -2011

Start time: 01-Jul-20 09:10

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		07/06/20	07/06/20 09:10	4005

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20062912

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

20062912: Analyses associated with analyst code 4005 were performed by Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

Analytical:

Dissolved Metals

Batch: 175863

Method exceedance: Laboratory control sample (LCS) exceedances identified, matrix spike/ matrix spike duplicate samples meet LCS criteria; see QC summary form.

Analytical:

Volatile Organics Compounds (TVO)

Batch: 175653

Method exceedance: A target analyte was detected in the method blank; Tetrachloroethene was 0.47 ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 20062912

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	20062912-001	W	82094	175693	06/30/2020 14:26	07/01/2020 00:42
	82094-1-BKS	BKS	82094-1-BKS	W	82094	175693	06/30/2020 14:26	06/30/2020 23:36
	82094-1-BLK	BLK	82094-1-BLK	W	82094	175693	06/30/2020 14:26	06/30/2020 23:31
	001A S	MS	20062604-001 S	W	82094	175693	06/30/2020 14:26	06/30/2020 23:45
	001A SD	MSD	20062604-001 S	W	82094	175693	06/30/2020 14:26	07/01/2020 00:18
	82094-1-BKS	Reanalysis	82094-1-BKS	W	82094	175749	06/30/2020 14:26	07/01/2020 22:44
	82094-1-BLK	Reanalysis	82094-1-BLK	W	82094	175749	06/30/2020 14:26	07/01/2020 22:39
	001A S	Reanalysis	20062604-001 S	W	82094	175749	06/30/2020 14:26	07/01/2020 22:54
	001A SD	Reanalysis	20062604-001 S	W	82094	175749	06/30/2020 14:26	07/01/2020 22:59
	82094-1-BKS	Reanalysis	82094-1-BKS	W	82094	175768	06/30/2020 14:26	07/06/2020 14:15
	82094-1-BLK	Reanalysis	82094-1-BLK	W	82094	175768	06/30/2020 14:26	07/06/2020 14:05
	Effluent VSP-4	Reanalysis	20062912-001	W	82094	175996	06/30/2020 14:26	07/06/2020 14:25
	EPA 200.8	Effluent VSP-4	Initial	20062912-001	W	82146	175863	07/06/2020 11:49
82146-1-BKS		BKS	82146-1-BKS	W	82146	175863	07/06/2020 11:49	07/09/2020 00:35
82146-1-BLK		BLK	82146-1-BLK	W	82146	175863	07/06/2020 11:49	07/09/2020 00:25
Effluent VSP-4 S		MS	20062912-001 S	W	82146	175863	07/06/2020 11:49	07/09/2020 01:06
Effluent VSP-4 SD		MSD	20062912-001 S	W	82146	175863	07/06/2020 11:49	07/09/2020 01:11
EPA 624 .1	Effluent VSP-4	Initial	20062912-001	W	82100	175653	06/30/2020 11:35	06/30/2020 19:16
	82100-1-BKS	BKS	82100-1-BKS	W	82100	175653	06/30/2020 11:35	06/30/2020 12:29
	82100-1-BLK	BLK	82100-1-BLK	W	82100	175653	06/30/2020 11:35	06/30/2020 14:22
	12914-Eff-6/20 S	MS	20062611-001 S	W	82100	175653	06/30/2020 11:35	06/30/2020 22:18
	12914-Eff-6/20 SD	MSD	20062611-001 S	W	82100	175653	06/30/2020 11:35	06/30/2020 22:40
SM 2540D -2011	Effluent VSP-4	Initial	20062912-001	W	175618	175618	07/01/2020 10:00	07/01/2020 10:00
	175618-1-BLK	BLK	175618-1-BLK	W	175618	175618	07/01/2020 10:00	07/01/2020 10:00
	13831-EFF-06/20 D	MD	20062610-001 D	W	175618	175618	07/01/2020 10:00	07/01/2020 10:00
SM 5210B -2011	Effluent VSP-4	Initial	20062912-001	W	175986	175986	07/06/2020 09:10	07/06/2020 09:10

Project Name Kop-Flex
PSS Project No.: 20062912

Analytical Method: SM 2540D -2011

Seq Number: 175618 Matrix: Water
MB Sample Id: 175618-1-BLK

Parameter	MB Result	LOD	RL	Units	Flag
Suspended Solids	ND	0.5000	1.000	mg/L	

Analytical Method: EPA 200.8

Seq Number: 175693 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 82094-1-BLK LCS Sample Id: 82094-1-BKS Date Prep: 06/30/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<1.000	40.00	39.35	98	85-115	ug/L	
Nickel	<1.000	40.00	38.63	97	85-115	ug/L	
Zinc	<20.00	200	220.5	110	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 175768 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 82094-1-BLK LCS Sample Id: 82094-1-BKS Date Prep: 06/30/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	43.34	108	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 175863 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 82146-1-BLK LCS Sample Id: 82146-1-BKS Date Prep: 07/06/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	38.87	97	85-115	ug/L	
Lead	<1.000	40.00	42.72	107	85-115	ug/L	
Nickel	<1.000	40.00	41.00	103	85-115	ug/L	
Zinc	<20.00	200	233.1	117	85-115	ug/L	H

Analytical Method: EPA 200.8

Seq Number: 175863 Matrix: Waste Water Prep Method: E200.8_PREP
Parent Sample Id: 20062912-001 MS Sample Id: 20062912-001 S MSD Sample Id: 20062912-001 SD Date Prep: 07/06/20

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	<1.000	40.00	42.19	105	42.33	106	70-130	1	25	ug/L	
Lead	<1.000	40.00	42.56	106	42.27	106	70-130	0	25	ug/L	
Nickel	14.81	40.00	56.02	103	56.31	104	70-130	1	25	ug/L	
Zinc	24.32	200	237.4	107	238.5	107	70-130	0	25	ug/L	

Project Name Kop-Flex

PSS Project No.: 20062912

Analytical Method: EPA 200.8

Seq Number: 175768

REBLK Sample Id: 82094-1-BLK

Matrix: Water

LCS Sample Id: 82094-1-BKS

Prep Method: E200.8_PREP

Date Prep: 06/30/20

Parameter	REBLK Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<1.000	40.00	43.95	110	85-115	ug/L	
Nickel	<1.000	40.00	41.40	104	85-115	ug/L	
Zinc	<20.00	200	206.6	103	85-115	ug/L	

Analytical Method: EPA 624 .1

Seq Number: 175653

MB Sample Id: 82100-1-BLK

Matrix: Water

LCS Sample Id: 82100-1-BKS

Prep Method: E624PREP

Date Prep: 06/30/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	59.03	118	54-148	ug/L	
Chloromethane	<1.000	50.00	45.38	91	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	45.36	91	5-195	ug/L	
Bromomethane	<1.000	50.00	43.10	86	15-185	ug/L	
Chloroethane	<1.000	50.00	37.99	76	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	42.27	85	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	42.44	85	50-150	ug/L	
Methylene Chloride	<1.000	50.00	40.95	82	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	42.31	85	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	38.10	76	70-130	ug/L	
Chloroform	<1.000	50.00	42.45	85	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	45.83	92	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	47.49	95	70-130	ug/L	
Benzene	<1.000	50.00	45.29	91	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	45.06	90	70-130	ug/L	
Trichloroethene	<1.000	50.00	45.11	90	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	44.88	90	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	49.50	99	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	47.60	95	25-175	ug/L	
Toluene	<1.000	50.00	45.65	91	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	47.42	95	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	45.87	92	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	48.82	98	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	50.66	101	70-135	ug/L	
Chlorobenzene	<1.000	50.00	44.96	90	65-135	ug/L	
Ethylbenzene	<1.000	50.00	46.91	94	60-140	ug/L	
Bromoform	<1.000	50.00	46.38	93	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	41.67	83	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	44.53	89	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	45.00	90	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	44.63	89	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	106		98		87-120	%
4-Bromofluorobenzene	96		94		85-147	%
Toluene-D8	102		100		88-110	%

Project Name Kop-Flex
PSS Project No.: 20062912

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

**PHASE
SEPARATION
SCIENCE**

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

www.phaseonline.com ~ info@phaseonline.com

6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

PSS CLIENT: WSP		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 20062912				PAGE <u>1</u> OF <u>1</u>						
BILL TO (if different):		PHONE #: 703-709-6500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe										
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes							Preservative Codes	
PROJECT NAME: Kop-Flex		PROJECT #: 3401515010/04				HCl							1 - HCL 2 - H ₂ SO ₄ 3 - HNO ₃ 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit	
SITE LOCATION: Hanover, MD		P.O. #:				HNO ₃ HNO ₃								
SAMPLER(S): Shannon Burke		DW CERT #:				Analysis/Method Required								
						③								
				VOCs (EPA 214) BOD TSS Total metals 2 hardness (2008) Dissolved metals (2008)										
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Analysis/Method Required							Preservative Codes
1	Effluent VSP-4	6/29/20	1130	WW	7	G	X	X	X	X	X	Dissolved metals field-filtered		
Relinquished By: (1) Shannon Burke		Date 6/29/20	Time 1255	Received By: [Signature]		Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other				Ice Present: PPEJ TB: 4.6°C				
Relinquished By: (2)		Date	Time	Received By:		STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER				Custody Seal: Cover-Intact				
Relinquished By: (3)		Date	Time	Received By:		COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW				# Coolers: PPF 1 Temp: 2.6°-3.5°C				
Relinquished By: (4)		Date	Time	Received By:		EDD FORMAT TYPE				Shipping Carrier: CMAI				
										Special Instructions: Metals = Cu, Pb, Ni, Zn				
										standard 10-day TAT				

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 20062912

Client Name WSP USA - Herndon
Disposal Date 08/03/2020

Received By Thomas Wingate
Date Received 06/29/2020 12:55:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? N/A
Seal(s) Signed / Dated? N/A

Ice Present
Temp (deg C) 3.5
Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
Chain of Custody Yes

Sampler Name Shannon Burke
MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
Intact? Yes
Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
Total No. of Containers Received 7

Preservation

Total Metals (pH<2) Yes
Dissolved Metals, filtered within 15 minutes of collection (pH<2) Yes
Orthophosphorus, filtered within 15 minutes of collection N/A
Cyanides (pH>12) N/A
Sulfide (pH>9) N/A
TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
TOX, TKN, NH3, Total Phos (pH<2) N/A
VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
Do VOA vials have zero headspace? Yes
624 VOC (Rcvd at least one unpreserved VOA vial) No
524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

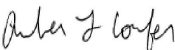
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 06/29/2020

PM Review and Approval:



Amber Confer

Date: 06/29/2020

Project Name: Kop-Flex
PSS Project No.: 20062913

July 14, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20062913**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20062913**.

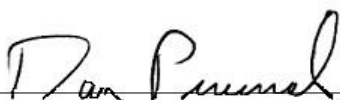
All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on August 3, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop-Flex

PSS Project No.: 20062913

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 06/29/2020 at 12:55 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20062913-001	Effluent VSP-4	WASTE WATER	06/29/20 11:30

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C** Results Pending Final Confirmation.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail** The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J** The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL** This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND** Not Detected at or above the reporting limit.
- RL** PSS Reporting Limit.
- U** Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
 State Certifications: MD 179, WV 303
 Regulated Soil Permit: P330-12-00268
 NSWC USCG Accepted Laboratory
 LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20062913

Sample ID: Effluent VSP-4 **Date/Time Sampled: 06/29/2020 11:30** **PSS Sample ID: 20062913-001**
Matrix: WASTE WATER **Date/Time Received: 06/29/2020 12:55**

Oil and Grease Analytical Method: EPA 1664 B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Oil & Grease, Total Recovered	ND	mg/L	2.3		1	07/01/20	07/01/20 11:15	1022

Nitrogen, Ammonia Analytical Method: SM 4500-NH3-F -2011 Preparation Method: SM4500-NH3B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Nitrogen, Ammonia (as N)	ND	mg/L	0.20		1	07/01/20	07/01/20 12:24	1053

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20062913

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Lab Chronology

Project Name: Kop-Flex
 PSS Project No.: 20062913

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 1664 B	Effluent VSP-4	Initial	20062913-001	W	175654	175654	07/01/2020 11:15	07/01/2020 11:15
	175654-1-BKS	BKS	175654-1-BKS	W	175654	175654	07/01/2020 11:15	07/01/2020 11:15
	175654-1-BLK	BLK	175654-1-BLK	W	175654	175654	07/01/2020 11:15	07/01/2020 11:15
	175654-1-BSD	BSD	175654-1-BSD	W	175654	175654	07/01/2020 11:15	07/01/2020 11:15
SM 4500-NH3-F - 2011	Effluent VSP-4	Initial	20062913-001	W	82102	175670	07/01/2020 09:39	07/01/2020 12:24
	82102-1-BKS	BKS	82102-1-BKS	W	82102	175670	07/01/2020 09:39	07/01/2020 12:16
	82102-1-BLK	BLK	82102-1-BLK	W	82102	175670	07/01/2020 09:39	07/01/2020 12:12
	82102-1-BSD	BSD	82102-1-BSD	W	82102	175670	07/01/2020 09:39	07/01/2020 12:20
	Effluent VSP-4 S	MS	20062913-001 S	W	82102	175670	07/01/2020 09:39	07/01/2020 12:28
	Effluent VSP-4 SD	MSD	20062913-001 S	W	82102	175670	07/01/2020 09:39	07/01/2020 12:32

Project Name Kop-Flex
PSS Project No.: 20062913

Analytical Method: EPA 1664 B

Seq Number: 175654 Matrix: Water
MB Sample Id: 175654-1-BLK LCS Sample Id: 175654-1-BKS LCSD Sample Id: 175654-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Oil & Grease, Total Recovered	<2.000	40.00	38.50	96	38.60	97	78-114	1	11	mg/L	

Analytical Method: SM 4500-NH3-F -2011

Seq Number: 175670 Matrix: Water Prep Method: SM4500-NH3B
MB Sample Id: 82102-1-BLK LCS Sample Id: 82102-1-BKS Date Prep: 07/01/20
LCSD Sample Id: 82102-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Nitrogen, Ammonia (as N)	<0.2000	2.500	2.405	96	2.380	95	85-115	1	20	mg/L	

Analytical Method: SM 4500-NH3-F -2011

Seq Number: 175670 Matrix: Waste Water Prep Method: SM4500-NH3B
Parent Sample Id: 20062913-001 MS Sample Id: 20062913-001 S Date Prep: 07/01/20
MSD Sample Id: 20062913-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Nitrogen, Ammonia (as N)	<0.2000	2.500	2.575	103	2.515	101	80-120	2	20	mg/L	

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

**PHASE
SEPARATION
SCIENCE**

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

www.phaseonline.com ~ info@phaseonline.com

6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

PSS CLIENT: WSP		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 20062913			PAGE 1 OF 1			
BILL TO (if different):		PHONE #: 703-709-6500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe						
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes H2SO4 H2SO4			Preservative Codes 1 - HCL 2 - H2SO4 3 - HNO3 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit	
PROJECT NAME: Kop-Flex		PROJECT #: 3401545.010104				Analysis/Method Required Oil and grease (EPA 1631) Ammonia (45-N (SM4500))				
SITE LOCATION: Handover, MD		P.O. #:								
SAMPLER(S): Shannon Burke		DW CERT #:								
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Analysis/Method Required			Preservative Codes
1	Effluent VSP-4	6/29/20	11:30	WW	2	G	X	X		
Relinquished By: (1) Shannon Burke		Date 6/29/20	Time 12:55	Received By: [Signature]		Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			Ice Present: PREP TB=4.6°C	
Relinquished By: (2)		Date	Time	Received By:		STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER			# Coolers: 1 Temp: 5.6°F-3.2	
Relinquished By: (3)		Date	Time	Received By:		COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW		Special Instructions: Standard 10-day TAT		
Relinquished By: (4)		Date	Time	Received By:		EDD FORMAT TYPE		Shipping Carrier: [Signature]		

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop-Flex
 PSS Project No.: 20062913

Client Name WSP USA - Herndon
Disposal Date 08/03/2020

Received By Thomas Wingate
Date Received 06/29/2020 12:55:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 8.3
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Shannon Burke
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
 Total No. of Containers Received 2

Preservation

Total Metals (pH<2) N/A
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) Yes
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) N/A
 Do VOA vials have zero headspace? N/A
 624 VOC (Rcvd at least one unpreserved VOA vial) N/A
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

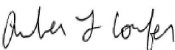
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 06/29/2020

PM Review and Approval:



Amber Confer

Date: 06/29/2020

Project Name: Kop-Flex
PSS Project No.: 20062914

July 14, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20062914**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20062914**.

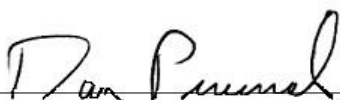
All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on August 3, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop-Flex

PSS Project No.: 20062914

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 06/29/2020 at 12:55 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20062914-001	Effluent VSP-4	WASTE WATER	06/29/20 11:30
20062914-002	TB-062920	WATER	06/29/20 12:06
20062914-002	TB-062920	WATER	06/29/20 12:06

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C** Results Pending Final Confirmation.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail** The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J** The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL** This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND** Not Detected at or above the reporting limit.
- RL** PSS Reporting Limit.
- U** Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20062914

Sample ID: Effluent VSP-4 **Date/Time Sampled: 06/29/2020 11:30** **PSS Sample ID: 20062914-001**

Matrix: WASTE WATER **Date/Time Received: 06/29/2020 12:55**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	4.7	ug/L	1.0		1	07/13/20	07/13/20 19:41	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	97	%	80-120		1	07/13/20	07/13/20 19:41	1045

Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 20062914

Sample ID: TB-062920 **Date/Time Sampled: 06/29/2020 12:06** **PSS Sample ID: 20062914-002**
Matrix: WATER **Date/Time Received: 06/29/2020 12:55**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 175653 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Chloromethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Vinyl Chloride	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Bromomethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Chloroethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Methylene Chloride	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Chloroform	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Benzene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Trichloroethene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Bromodichloromethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Toluene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Tetrachloroethylene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Dibromochloromethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Chlorobenzene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Ethylbenzene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
Bromoform	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	06/30/20	06/30/20 19:39	1011

Surrogate(s)	Recovery	Limits				
Dibromofluoromethane	105 %	87-120	1	06/30/20	06/30/20 19:39	1011
4-Bromofluorobenzene	94 %	85-147	1	06/30/20	06/30/20 19:39	1011
Toluene-D8	101 %	88-110	1	06/30/20	06/30/20 19:39	1011

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20062914

Sample ID: TB-062920 **Date/Time Sampled: 06/29/2020 12:06** **PSS Sample ID: 20062914-002**
Matrix: WATER **Date/Time Received: 06/29/2020 12:55**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	07/13/20	07/13/20 20:03	1045
Surrogate(s)	Recovery		Limits					
<i>Toluene-D8</i>	98	%	80-120		1	07/13/20	07/13/20 20:03	1045

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20062914

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Analytical:

Volatile Organics Compounds (TVO)

Batch: 175653

Method exceedance: A target analyte was detected in the method blank; Tetrachloroethene was 0.47 ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop-Flex
 PSS Project No.: 20062914

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-062920	Initial	20062914-002	W	82100	175653	06/30/2020 11:35	06/30/2020 19:39
	82100-1-BKS	BKS	82100-1-BKS	W	82100	175653	06/30/2020 11:35	06/30/2020 12:29
	82100-1-BLK	BLK	82100-1-BLK	W	82100	175653	06/30/2020 11:35	06/30/2020 14:22
	12914-Eff-6/20 S	MS	20062611-001 S	W	82100	175653	06/30/2020 11:35	06/30/2020 22:18
	12914-Eff-6/20 SD	MSD	20062611-001 S	W	82100	175653	06/30/2020 11:35	06/30/2020 22:40
SW-846 8260 B-Modified	Effluent VSP-4	Initial	20062914-001	W	82269	176007	07/13/2020 12:47	07/13/2020 19:41
	TB-062920	Initial	20062914-002	W	82269	176007	07/13/2020 12:47	07/13/2020 20:03
	82269-1-BKS	BKS	82269-1-BKS	W	82269	176007	07/13/2020 12:47	07/13/2020 17:49
	82269-1-BLK	BLK	82269-1-BLK	W	82269	176007	07/13/2020 12:47	07/13/2020 19:18
	82269-1-BSD	BSD	82269-1-BSD	W	82269	176007	07/13/2020 12:47	07/13/2020 18:11

Project Name Kop-Flex

PSS Project No.: 20062914

Analytical Method: EPA 624 .1

Seq Number: 175653

Matrix: Water

Prep Method: E624PREP

Date Prep: 06/30/20

MB Sample Id: 82100-1-BLK

LCS Sample Id: 82100-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	59.03	118	54-148	ug/L	
Chloromethane	<1.000	50.00	45.38	91	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	45.36	91	5-195	ug/L	
Bromomethane	<1.000	50.00	43.10	86	15-185	ug/L	
Chloroethane	<1.000	50.00	37.99	76	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	42.27	85	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	42.44	85	50-150	ug/L	
Methylene Chloride	<1.000	50.00	40.95	82	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	42.31	85	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	38.10	76	70-130	ug/L	
Chloroform	<1.000	50.00	42.45	85	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	45.83	92	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	47.49	95	70-130	ug/L	
Benzene	<1.000	50.00	45.29	91	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	45.06	90	70-130	ug/L	
Trichloroethene	<1.000	50.00	45.11	90	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	44.88	90	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	49.50	99	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	47.60	95	25-175	ug/L	
Toluene	<1.000	50.00	45.65	91	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	47.42	95	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	45.87	92	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	48.82	98	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	50.66	101	70-135	ug/L	
Chlorobenzene	<1.000	50.00	44.96	90	65-135	ug/L	
Ethylbenzene	<1.000	50.00	46.91	94	60-140	ug/L	
Bromoform	<1.000	50.00	46.38	93	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	41.67	83	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	44.53	89	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	45.00	90	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	44.63	89	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	106		98		87-120	%
4-Bromofluorobenzene	96		94		85-147	%
Toluene-D8	102		100		88-110	%

Analytical Method: SW-846 8260 B-Modified

Seq Number: 176007

Matrix: Water

Prep Method: SW5030B

Date Prep: 07/13/20

MB Sample Id: 82269-1-BLK

LCS Sample Id: 82269-1-BKS

LCSD Sample Id: 82269-1-BSD

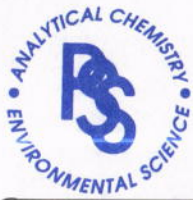
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	32.83	109	33.48	112	50-150	3	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	98		97		99		80-120	%

Project Name Kop-Flex

PSS Project No.: 20062914

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

1 *CLIENT: WSP *OFFICE LOC. Herndon, VA				PSS Work Order #: 20062914 PAGE 1 OF 1																																																																																																																																																																																																																																																																																			
*PROJECT MGR: Eric Johnson *PHONE NO.: (703) 709-6500				Matrix Codes: SW =Surface Wtr DW =Drinking Wtr GW =Ground Wtr WW =Waste Wtr O =Oil S =Soil L =Liquid SOL =Solid A =Air WI =Wipe																																																																																																																																																																																																																																																																																			
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Sample Receipt Checklist

Project Name: Kop-Flex
 PSS Project No.: 20062914

Client Name WSP USA - Herndon
Disposal Date 08/03/2020

Received By Thomas Wingate
Date Received 06/29/2020 12:55:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 8.3
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Shannon Burke
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 2
 Total No. of Containers Received 7

Preservation

Total Metals (pH<2) N/A
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) No
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

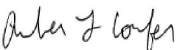
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 06/29/2020

PM Review and Approval:



Amber Confer

Date: 06/29/2020

Project Name: Kop-Flex
PSS Project No.: 20073003

August 13, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20073003**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20073003**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on September 3, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager

Explanation of Qualifiers

Project Name: Kop-Flex

PSS Project No.: 20073003

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 07/30/2020 at 12:26 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20073003-001	Effluent VSP-4	WASTE WATER	07/30/20 09:10

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C** Results Pending Final Confirmation.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail** The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J** The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL** This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND** Not Detected at or above the reporting limit.
- RL** PSS Reporting Limit.
- U** Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20073003

Sample ID: Effluent VSP-4 **Date/Time Sampled: 07/30/2020 09:10** **PSS Sample ID: 20073003-001**
Matrix: WASTE WATER **Date/Time Received: 07/30/2020 12:26**

Dissolved Metals Analytical Method: EPA 200.8 Preparation Method: 200.8

Qualifier(s): See Sample Receipt section on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	1.6	ug/L	1.0		1	08/06/20	08/10/20 14:47	1051
Lead	ND	ug/L	1.0		1	08/06/20	08/06/20 18:48	1064
Nickel	15.0	ug/L	1.00		1	08/06/20	08/06/20 18:48	1064
Zinc	28.6	ug/L	20.0		1	08/06/20	08/06/20 18:48	1064

Total Metals + Hardness Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	2.7	ug/L	1.0		1	08/03/20	08/05/20 13:13	1064
Lead	ND	ug/L	1.0		1	08/03/20	08/05/20 13:13	1064
Nickel	17.0	ug/L	1.00		1	08/03/20	08/05/20 13:13	1064
Zinc	33.6	ug/L	20.0		1	08/03/20	08/05/20 13:13	1064
Hardness (Ca & Mg)	25	mg/L	0.66		1	08/03/20	08/05/20 13:13	1064

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Sample Receipt section on Case Narrative. See Batch 176691 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Chloromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Vinyl Chloride	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Bromomethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Chloroethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Methylene Chloride	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Chloroform	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Benzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Trichloroethene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20073003

Sample ID: Effluent VSP-4 **Date/Time Sampled: 07/30/2020 09:10** **PSS Sample ID: 20073003-001**
Matrix: WASTE WATER **Date/Time Received: 07/30/2020 12:26**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Sample Receipt section on Case Narrative. See Batch 176691 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Bromodichloromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Toluene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Tetrachloroethylene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Dibromochloromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Chlorobenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Ethylbenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
Bromoform	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:05	1011

Surrogate(s)	Recovery	Limits						
Dibromofluoromethane	101 %	87-120			1	08/03/20	08/03/20 14:05	1011
4-Bromofluorobenzene	101 %	85-147			1	08/03/20	08/03/20 14:05	1011
Toluene-D8	99 %	88-110			1	08/03/20	08/03/20 14:05	1011

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	2.0		1	08/03/20	08/03/20 12:31	1061

Biochemical Oxygen Demand Analytical Method: SM 5210B -2011

Start time: 31-Jul-20 14:10

	Result	Units	RL	Flag		Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0			07/31/20	08/05/20 12:30	4005

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20073003

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

20073003: Analyses associated with analyst code 4005 were performed by Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

Analytical:

Volatile Organics Compounds (TVO)

Batch: 176691

Method exceedance: A target analyte was detected in the method blank; Chloromethane was 0.25 ppb and Tetrachloroethene was 0.53 ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

Lab Chronology

Project Name: Kop-Flex
 PSS Project No.: 20073003

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	20073003-001	W	82550	176729	08/03/2020 11:27	08/05/2020 13:13
	82550-1-BKS	BKS	82550-1-BKS	W	82550	176729	08/03/2020 11:27	08/05/2020 12:52
	82550-1-BLK	BLK	82550-1-BLK	W	82550	176729	08/03/2020 11:27	08/05/2020 12:47
	072820-Griff- S	MS	20072907-001 S	W	82550	176729	08/03/2020 11:27	08/05/2020 13:03
	072820-Griff- SD	MSD	20072907-001 S	W	82550	176729	08/03/2020 11:27	08/05/2020 13:08
EPA 200.8	Effluent VSP-4	Initial	20073003-001	W	82603	176784	08/06/2020 14:47	08/06/2020 18:48
	82603-1-BKS	BKS	82603-1-BKS	W	82603	176784	08/06/2020 14:47	08/06/2020 18:43
	82603-1-BLK	BLK	82603-1-BLK	W	82603	176784	08/06/2020 14:47	08/06/2020 18:38
	Effluent VSP-4 S	MS	20073003-001 S	W	82603	176784	08/06/2020 14:47	08/06/2020 18:53
	Effluent VSP-4 SD	MSD	20073003-001 S	W	82603	176784	08/06/2020 14:47	08/06/2020 18:58
	82603-1-BKS	Reanalysis	82603-1-BKS	W	82603	176821	08/06/2020 14:47	08/07/2020 20:10
	82603-1-BLK	Reanalysis	82603-1-BLK	W	82603	176821	08/06/2020 14:47	08/07/2020 20:05
	82603-1-BKS	Reanalysis	82603-1-BKS	W	82603	176826	08/06/2020 14:47	08/10/2020 14:43
	82603-1-BLK	Reanalysis	82603-1-BLK	W	82603	176826	08/06/2020 14:47	08/10/2020 14:38
	Effluent VSP-4	Reanalysis	20073003-001	W	82603	176826	08/06/2020 14:47	08/10/2020 14:47
EPA 624 .1	Effluent VSP-4	Initial	20073003-001	W	82562	176691	08/03/2020 07:46	08/03/2020 14:05
	82562-1-BKS	BKS	82562-1-BKS	W	82562	176691	08/03/2020 07:46	08/03/2020 08:48
	82562-1-BLK	BLK	82562-1-BLK	W	82562	176691	08/03/2020 07:46	08/03/2020 10:41
	Effluent VSP-4 S	MS	20073003-001 S	W	82562	176691	08/03/2020 07:46	08/03/2020 15:58
	Effluent VSP-4 SD	MSD	20073003-001 S	W	82562	176691	08/03/2020 07:46	08/03/2020 16:20
SM 2540D -2011	Effluent VSP-4	Initial	20073003-001	W	176663	176663	08/03/2020 12:31	08/03/2020 12:31
	176663-1-BLK	BLK	176663-1-BLK	W	176663	176663	08/03/2020 12:31	08/03/2020 12:31
	Effluent VSP-4 D	MD	20073003-001 D	W	176663	176663	08/03/2020 12:31	08/03/2020 12:31
	001 QC D	MD	20080301-002 D	W	176663	176663	08/03/2020 12:31	08/03/2020 12:31
SM 5210B -2011	Effluent VSP-4	Initial	20073003-001	W	176845	176845	07/31/2020 14:10	08/05/2020 12:30

Project Name Kop-Flex
PSS Project No.: 20073003

Analytical Method: SM 2540D -2011

Seq Number: 176663 Matrix: Water
MB Sample Id: 176663-1-BLK

Parameter	MB Result	LOD	RL	Units	Flag
Suspended Solids	ND	0.5000	1.000	mg/L	

Analytical Method: SM 2540D -2011

Seq Number: 176663 Matrix: Waste Water
Parent Sample Id: 20073003-001 MD Sample Id: 20073003-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Flag
Suspended Solids	<2.000	<2.000	NC	10	mg/L	

Analytical Method: EPA 200.8

Seq Number: 176729 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 82550-1-BLK LCS Sample Id: 82550-1-BKS Date Prep: 08/03/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	41.87	105	85-115	ug/L	
Lead	<1.000	40.00	43.70	109	85-115	ug/L	
Nickel	<1.000	40.00	39.84	100	85-115	ug/L	
Zinc	<20.00	200	195.8	98	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 176784 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 82603-1-BLK LCS Sample Id: 82603-1-BKS Date Prep: 08/06/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<1.000	40.00	38.20	96	85-115	ug/L	
Nickel	<1.000	40.00	39.99	100	85-115	ug/L	
Zinc	<20.00	200	220.6	110	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 176826 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 82603-1-BLK LCS Sample Id: 82603-1-BKS Date Prep: 08/06/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	39.90	100	85-115	ug/L	

QC Summary

Project Name Kop-Flex
PSS Project No.: 20073003

Analytical Method: EPA 200.8

Seq Number: 176784
Parent Sample Id: 20073003-001

Matrix: Waste Water
MS Sample Id: 20073003-001 S

Prep Method: E200.8_PREP
Date Prep: 08/06/20
MSD Sample Id: 20073003-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	<1.000	40.00	40.65	102	40.44	101	70-130	1	25	ug/L	
Lead	<1.000	40.00	38.93	97	38.37	96	70-130	1	25	ug/L	
Nickel	14.96	40.00	53.55	96	53.00	95	70-130	1	25	ug/L	
Zinc	28.57	200	244.6	108	242	107	70-130	1	25	ug/L	

Analytical Method: EPA 200.8

Seq Number: 176821
REBLK Sample Id: 82603-1-BLK

Matrix: Water
LCS Sample Id: 82603-1-BKS

Prep Method: E200.8_PREP
Date Prep: 08/06/20

Parameter	REBLK Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<1.000	40.00	38.75	97	85-115	ug/L	
Nickel	<1.000	40.00	37.89	95	85-115	ug/L	
Zinc	<20.00	200	194.1	97	85-115	ug/L	

Project Name Kop-Flex
PSS Project No.: 20073003

Analytical Method: EPA 624 .1

Seq Number: 176691

MB Sample Id: 82562-1-BLK

Matrix: Water

LCS Sample Id: 82562-1-BKS

Prep Method: E624PREP

Date Prep: 08/03/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	51.35	103	54-148	ug/L	
Chloromethane	<1.000	50.00	43.83	88	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	49.28	99	5-195	ug/L	
Bromomethane	<1.000	50.00	45.71	91	15-185	ug/L	
Chloroethane	<1.000	50.00	43.98	88	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	53.87	108	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	52.32	105	50-150	ug/L	
Methylene Chloride	<1.000	50.00	48.92	98	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	49.52	99	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	51.94	104	70-130	ug/L	
Chloroform	<1.000	50.00	49.57	99	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	53.22	106	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	53.23	106	70-130	ug/L	
Benzene	<1.000	50.00	50.11	100	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	50.78	102	70-130	ug/L	
Trichloroethene	<1.000	50.00	50.74	101	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.78	104	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	53.59	107	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	52.94	106	25-175	ug/L	
Toluene	<1.000	50.00	48.69	97	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	53.43	107	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.13	100	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	50.00	100	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	50.10	100	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.78	96	65-135	ug/L	
Ethylbenzene	<1.000	50.00	49.78	100	60-140	ug/L	
Bromoform	<1.000	50.00	49.96	100	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	45.49	91	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	46.15	92	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	44.84	90	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	46.71	93	65-135	ug/L	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	
Dibromofluoromethane	100		98		87-120	%	
4-Bromofluorobenzene	101		96		85-147	%	
Toluene-D8	99		101		88-110	%	

Project Name Kop-Flex
PSS Project No.: 20073003

Analytical Method: EPA 624 .1

Seq Number: 176691

Parent Sample Id: 20073003-001

Matrix: Waste Water

MS Sample Id: 20073003-001 S

Prep Method: E624PREP

Date Prep: 08/03/20

MSD Sample Id: 20073003-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	57.08	114	54.96	110	43-150	4	27	ug/L	
Chloromethane	<1.000	50.00	50.90	102	48.55	97	1-273	5	60	ug/L	
Vinyl Chloride	<1.000	50.00	56.33	113	54.42	109	1-251	4	66	ug/L	
Bromomethane	<1.000	50.00	54.73	109	53.47	107	1-242	2	61	ug/L	
Chloroethane	<1.000	50.00	48.77	98	48.06	96	14-230	2	78	ug/L	
Trichlorofluoromethane	<1.000	50.00	59.17	118	58.33	117	17-181	1	84	ug/L	
1,1-Dichloroethene	<1.000	50.00	59.26	119	57.28	115	1-234	3	32	ug/L	
Methylene Chloride	<1.000	50.00	56.59	113	54.69	109	1-221	4	28	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	55.67	111	54.11	108	54-156	3	45	ug/L	
1,1-Dichloroethane	<1.000	50.00	57.77	116	55.00	110	59-155	5	40	ug/L	
Chloroform	<1.000	50.00	56.05	112	55.24	110	51-138	2	54	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	58.88	118	58.25	117	52-162	1	36	ug/L	
Carbon Tetrachloride	<1.000	50.00	58.46	117	58.52	117	70-140	0	41	ug/L	
Benzene	<1.000	50.00	56.43	113	56.16	112	37-151	1	61	ug/L	
1,2-Dichloroethane	<1.000	50.00	56.51	113	56.27	113	49-155	0	49	ug/L	
Trichloroethene	<1.000	50.00	55.70	111	55.24	110	70-157	1	48	ug/L	
1,2-Dichloropropane	<1.000	50.00	57.66	115	57.78	116	1-210	1	55	ug/L	
Bromodichloromethane	<1.000	50.00	58.87	118	58.71	117	35-155	1	56	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	55.67	111	56.49	113	1-227	2	58	ug/L	
Toluene	<1.000	50.00	56.80	114	54.75	110	47-150	4	41	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	55.37	111	57.11	114	17-183	3	86	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	55.50	111	56.18	112	52-150	1	45	ug/L	
Tetrachloroethylene	<1.000	50.00	55.17	110	53.20	106	64-148	4	39	ug/L	
Dibromochloromethane	<1.000	50.00	54.09	108	55.72	111	53-149	3	50	ug/L	
Chlorobenzene	<1.000	50.00	57.00	114	55.21	110	37-160	4	53	ug/L	
Ethylbenzene	<1.000	50.00	59.54	119	57.35	115	37-162	3	63	ug/L	
Bromoform	<1.000	50.00	53.58	107	55.41	111	45-169	4	42	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	56.31	113	56.23	112	46-157	1	61	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	57.72	115	54.77	110	59-156	4	43	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	56.08	112	53.40	107	18-190	5	57	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	58.11	116	55.45	111	18-190	4	57	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
Dibromofluoromethane	100		101		87-120	%
4-Bromofluorobenzene	100		98		85-147	%
Toluene-D8	101		100		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

1 *CLIENT: WSP		*OFFICE LOC. Herndon, VA		PSS Work Order #: 20073003			PAGE 1 OF 1																																																																																																																																																													
*PROJECT MGR: Eric Johnson		*PHONE NO.: (703) 709-6500		Matrix Codes: SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe																																																																																																																																																																
EMAIL: eric.johnson@wsp.com		FAX NO.: ()		No. CONTAINERS Preservatives Used: HCl, HNO ₃ , HNO ₃ Analysis/Method Required: C = COMP: ③ G = GRAB: *																																																																																																																																																																
*PROJECT NAME: Kop-Flex		PROJECT NO.: 31401545.010/04																																																																																																																																																																		
SITE LOCATION: Hanover, MD		P.O. NO.:																																																																																																																																																																		
SAMPLER(S): Shannon Burke Lauren Johnson		DW CERT NO.:																																																																																																																																																																		
2 <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:5%;">LAB NO.</th> <th style="width:25%;">*SAMPLE IDENTIFICATION</th> <th style="width:10%;">*DATE (SAMPLED)</th> <th style="width:10%;">*TIME (SAMPLED)</th> <th style="width:10%;">MATRIX (See Codes)</th> <th style="width:5%;">7</th> <th style="width:5%;">6</th> <th style="width:5%;">X</th> <th style="width:5%;">X</th> <th style="width:5%;">X</th> <th style="width:5%;">X</th> <th style="width:5%;">X</th> <th style="width:5%;">REMARKS</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Effluent VSP-4</td> <td>7/30/20</td> <td>0910</td> <td>NW</td> <td></td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>* Dissolved metals field-filtered</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>									LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	7	6	X	X	X	X	X	REMARKS	1	Effluent VSP-4	7/30/20	0910	NW			X	X	X	X	X	* Dissolved metals field-filtered																																																																																																																																		
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5 Relinquished By: (1) <i>Shannon Burke</i> Date: 7/30/20 Time: 1226 Received By: <i>Lauren Johnson</i>				4 *Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other				# of Coolers: 1 TB: 2.8oz																																																																																																																																																												
Relinquished By: (2) _____ Date: _____ Time: _____ Received By: _____				Data Deliverables Required: COA <input type="checkbox"/> QC <input type="checkbox"/> SUMM <input type="checkbox"/> CLP <input type="checkbox"/> LIKE <input type="checkbox"/> OTHER <input type="checkbox"/>				Custody Seal: Coolant Intact																																																																																																																																																												
Relinquished By: (3) _____ Date: _____ Time: _____ Received By: _____				Special Instructions: Metals = Cu, Pb, Ni, Zn Standard 10-day TAT				Ice Present: PRES Temp: 2.8-3.4°C																																																																																																																																																												
Relinquished By: (4) _____ Date: _____ Time: _____ Received By: _____				DW COMPLIANCE? YES <input type="checkbox"/>		EDD FORMAT TYPE _____		STATE RESULTS REPORTED TO: MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER _____																																																																																																																																																												

Sample Receipt Checklist

Project Name: Kop-Flex
 PSS Project No.: 20073003

Client Name WSP USA - Herndon
Disposal Date 09/03/2020

Received By Thomas Wingate
Date Received 07/30/2020 12:26:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? N/A
 Seal(s) Signed / Dated? N/A

Ice Present
 Temp (deg C) 3.4
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Shannon Burke, Lauren Johnson
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
 Total No. of Containers Received 7

Preservation

Total Metals (pH<2) Yes
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) Yes
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) No
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

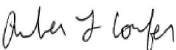
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 07/30/2020

PM Review and Approval:



Amber Confer

Date: 07/30/2020

Project Name: Kop Flex
PSS Project No.: 20073004

August 13, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20073004**
Project Name: Kop Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20073004**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on September 3, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager

Explanation of Qualifiers

Project Name: Kop Flex

PSS Project No.: 20073004

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 07/30/2020 at 12:26 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20073004-001	Effluent VSP-4	WASTE WATER	07/30/20 09:10
20073004-002	Influent VSP-1	GROUND WATER	07/30/20 09:45
20073004-003	TB-073020	WATER	07/30/20 00:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20073004

Sample ID: Effluent VSP-4 **Date/Time Sampled: 07/30/2020 09:10** **PSS Sample ID: 20073004-001**
Matrix: WASTE WATER **Date/Time Received: 07/30/2020 12:26**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	08/12/20	08/12/20 13:36	1045
Surrogate(s)	Recovery		Limits					
<i>Toluene-D8</i>	98	%	80-120		1	08/12/20	08/12/20 13:36	1045

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20073004

Sample ID: Influent VSP-1 **Date/Time Sampled: 07/30/2020 09:45** **PSS Sample ID: 20073004-002**
Matrix: GROUND WATER **Date/Time Received: 07/30/2020 12:26**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	08/03/20	08/03/20 14:50	1011
Benzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Bromochloromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Bromodichloromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Bromoform	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Bromomethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	08/03/20	08/03/20 14:50	1011
Carbon Disulfide	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Carbon tetrachloride	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Chlorobenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Chloroethane	3.7	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Chloroform	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Chloromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Cyclohexane	ND	ug/L	10		1	08/03/20	08/03/20 14:50	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	08/03/20	08/03/20 14:50	1011
Dibromochloromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
1,1-Dichloroethane	49	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
1,2-Dichloroethane	1.6	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
cis-1,2-Dichloroethene	1.4	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
1,1-Dichloroethene	250	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Ethylbenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	08/03/20	08/03/20 14:50	1011
Isopropylbenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Methyl Acetate	ND	ug/L	10		1	08/03/20	08/03/20 14:50	1011
Methylcyclohexane	ND	ug/L	10		1	08/03/20	08/03/20 14:50	1011
Methylene chloride	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20073004

Sample ID: Influent VSP-1 **Date/Time Sampled: 07/30/2020 09:45** **PSS Sample ID: 20073004-002**
Matrix: GROUND WATER **Date/Time Received: 07/30/2020 12:26**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	08/03/20	08/03/20 14:50	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Naphthalene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Styrene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Tetrachloroethene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Toluene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
1,1,1-Trichloroethane	24	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Trichloroethene	1.2	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Vinyl chloride	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
m&p-Xylene	ND	ug/L	2.0		1	08/03/20	08/03/20 14:50	1011
o-Xylene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:50	1011
Surrogate(s) Recovery Limits								
4-Bromofluorobenzene	102	%	87-109		1	08/03/20	08/03/20 14:50	1011
Dibromofluoromethane	102	%	93-111		1	08/03/20	08/03/20 14:50	1011
Toluene-D8	99	%	91-109		1	08/03/20	08/03/20 14:50	1011

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	110	ug/L	10		10	08/12/20	08/12/20 14:21	1045
Surrogate(s) Recovery Limits								
Toluene-D8	97	%	80-120		10	08/12/20	08/12/20 14:21	1045

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20073004

Sample ID: TB-073020 **Date/Time Sampled: 07/30/2020 00:00** **PSS Sample ID: 20073004-003**
Matrix: WATER **Date/Time Received: 07/30/2020 12:26**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 176691 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Chloromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Vinyl Chloride	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Bromomethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Chloroethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Methylene Chloride	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Chloroform	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Benzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Trichloroethene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Bromodichloromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Toluene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Tetrachloroethylene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Dibromochloromethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Chlorobenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Ethylbenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
Bromoform	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	08/03/20	08/03/20 14:27	1011

Surrogate(s)	Recovery	Limits				
Dibromofluoromethane	101 %	87-120	1	08/03/20	08/03/20 14:27	1011
4-Bromofluorobenzene	102 %	85-147	1	08/03/20	08/03/20 14:27	1011
Toluene-D8	98 %	88-110	1	08/03/20	08/03/20 14:27	1011

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20073004

Sample ID: TB-073020 **Date/Time Sampled: 07/30/2020 00:00** **PSS Sample ID: 20073004-003**

Matrix: WATER **Date/Time Received: 07/30/2020 12:26**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	08/12/20	08/12/20 13:58	1045
Surrogate(s)	Recovery		Limits					
<i>Toluene-D8</i>	97	%	80-120		1	08/12/20	08/12/20 13:58	1045

Case Narrative

Project Name: Kop Flex

PSS Project No.: 20073004

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Analytical:

Volatile Organics Compounds (TVO)

Batch: 176691

Method exceedance: A target analyte was detected in the method blank; Chloromethane was 0.25 ppb and Tetrachloroethene was 0.53 ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop Flex
 PSS Project No.: 20073004

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-073020	Initial	20073004-003	W	82562	176691	08/03/2020 07:46	08/03/2020 14:27
	82562-1-BKS	BKS	82562-1-BKS	W	82562	176691	08/03/2020 07:46	08/03/2020 08:48
	82562-1-BLK	BLK	82562-1-BLK	W	82562	176691	08/03/2020 07:46	08/03/2020 10:41
	Effluent VSP-4 S	MS	20073003-001 S	W	82562	176691	08/03/2020 07:46	08/03/2020 15:58
	Effluent VSP-4 SD	MSD	20073003-001 S	W	82562	176691	08/03/2020 07:46	08/03/2020 16:20
SW-846 8260 B	Influent VSP-1	Initial	20073004-002	W	82561	176690	08/03/2020 07:46	08/03/2020 14:50
	82561-1-BKS	BKS	82561-1-BKS	W	82561	176690	08/03/2020 07:46	08/03/2020 08:48
	82561-1-BLK	BLK	82561-1-BLK	W	82561	176690	08/03/2020 07:46	08/03/2020 10:41
	GP5 S	MS	20073006-007 S	W	82561	176690	08/03/2020 07:46	08/03/2020 15:13
	GP5 SD	MSD	20073006-007 S	W	82561	176690	08/03/2020 07:46	08/03/2020 15:35
SW-846 8260 B-Modified	Effluent VSP-4	Initial	20073004-001	W	82682	176934	08/13/2020 10:20	08/12/2020 13:36
	Influent VSP-1	Initial	20073004-002	W	82682	176934	08/13/2020 10:20	08/12/2020 14:21
	TB-073020	Initial	20073004-003	W	82682	176934	08/13/2020 10:20	08/12/2020 13:58
	82682-1-BKS	BKS	82682-1-BKS	W	82682	176934	08/13/2020 10:20	08/12/2020 11:27
	82682-1-BLK	BLK	82682-1-BLK	W	82682	176934	08/13/2020 10:20	08/12/2020 13:14
	82682-1-BSD	BSD	82682-1-BSD	W	82682	176934	08/13/2020 10:20	08/12/2020 12:07

Project Name Kop Flex

PSS Project No.: 20073004

Analytical Method: EPA 624 .1

Seq Number: 176691

Matrix: Water

Prep Method: E624PREP

Date Prep: 08/03/20

MB Sample Id: 82562-1-BLK

LCS Sample Id: 82562-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	51.35	103	54-148	ug/L	
Chloromethane	<1.000	50.00	43.83	88	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	49.28	99	5-195	ug/L	
Bromomethane	<1.000	50.00	45.71	91	15-185	ug/L	
Chloroethane	<1.000	50.00	43.98	88	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	53.87	108	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	52.32	105	50-150	ug/L	
Methylene Chloride	<1.000	50.00	48.92	98	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	49.52	99	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	51.94	104	70-130	ug/L	
Chloroform	<1.000	50.00	49.57	99	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	53.22	106	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	53.23	106	70-130	ug/L	
Benzene	<1.000	50.00	50.11	100	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	50.78	102	70-130	ug/L	
Trichloroethene	<1.000	50.00	50.74	101	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.78	104	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	53.59	107	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	52.94	106	25-175	ug/L	
Toluene	<1.000	50.00	48.69	97	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	53.43	107	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.13	100	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	50.00	100	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	50.10	100	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.78	96	65-135	ug/L	
Ethylbenzene	<1.000	50.00	49.78	100	60-140	ug/L	
Bromoform	<1.000	50.00	49.96	100	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	45.49	91	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	46.15	92	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	44.84	90	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	46.71	93	65-135	ug/L	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	
Dibromofluoromethane	100		98		87-120	%	
4-Bromofluorobenzene	101		96		85-147	%	
Toluene-D8	99		101		88-110	%	

Project Name Kop Flex
PSS Project No.: 20073004

Analytical Method: SW-846 8260 B

Seq Number: 176690

Matrix: Water

Prep Method: SW5030B

Date Prep: 08/03/20

MB Sample Id: 82561-1-BLK

LCS Sample Id: 82561-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<5.000	50.00	44.64	89	55-120	ug/L	
Benzene	<1.000	50.00	50.11	100	87-123	ug/L	
Bromochloromethane	<1.000	50.00	50.82	102	74-136	ug/L	
Bromodichloromethane	<1.000	50.00	53.59	107	83-125	ug/L	
Bromoform	<1.000	50.00	49.96	100	72-129	ug/L	
Bromomethane	<1.000	50.00	45.71	91	45-167	ug/L	
2-Butanone (MEK)	<5.000	50.00	41.41	83	45-136	ug/L	
Carbon Disulfide	<1.000	50.00	53.80	108	87-123	ug/L	
Carbon tetrachloride	<1.000	50.00	53.23	106	79-133	ug/L	
Chlorobenzene	<1.000	50.00	47.78	96	87-127	ug/L	
Chloroethane	<1.000	50.00	43.98	88	81-122	ug/L	
Chloroform	<1.000	50.00	49.57	99	76-129	ug/L	
Chloromethane	<1.000	50.00	43.83	88	59-121	ug/L	
Cyclohexane	<10.00	50.00	53.15	106	83-122	ug/L	
1,2-Dibromo-3-chloropropane	<5.000	50.00	44.43	89	63-140	ug/L	
Dibromochloromethane	<1.000	50.00	50.10	100	73-139	ug/L	
1,2-Dibromoethane	<1.000	50.00	50.53	101	80-127	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	46.71	93	82-129	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	46.15	92	88-127	ug/L	
Dichlorodifluoromethane	<1.000	50.00	51.35	103	70-131	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	44.84	90	84-129	ug/L	
1,1-Dichloroethane	<1.000	50.00	51.94	104	85-120	ug/L	
1,2-Dichloroethane	<1.000	50.00	50.78	102	86-125	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	49.12	98	86-126	ug/L	
1,1-Dichloroethene	<1.000	50.00	52.32	105	85-123	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.78	104	83-120	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	52.94	106	81-125	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	53.43	107	79-121	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	49.52	99	87-120	ug/L	
Ethylbenzene	<1.000	50.00	49.78	100	82-128	ug/L	
2-Hexanone (MBK)	<5.000	50.00	40.34	81	56-116	ug/L	
Isopropylbenzene	<1.000	50.00	48.23	96	81-128	ug/L	
Methyl Acetate	<10.00	50.00	47.38	95	68-129	ug/L	
Methylcyclohexane	<10.00	50.00	53.93	108	84-127	ug/L	
Methylene chloride	<1.000	50.00	48.92	98	85-119	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	40.15	80	57-116	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	50.54	101	61-130	ug/L	
Naphthalene	<1.000	50.00	48.27	97	74-114	ug/L	
Styrene	<1.000	50.00	43.34	87	76-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	45.49	91	79-131	ug/L	
Tetrachloroethene	<1.000	50.00	50.00	100	85-131	ug/L	
Toluene	<1.000	50.00	48.69	97	82-127	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	51.36	103	79-123	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	51.12	102	78-123	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	53.22	106	87-125	ug/L	
Trichloroethene	<1.000	50.00	50.74	101	87-124	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.13	100	84-127	ug/L	
Trichlorofluoromethane	<1.000	50.00	53.87	108	85-130	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	53.36	107	81-132	ug/L	
Vinyl chloride	<1.000	50.00	49.28	99	66-133	ug/L	
m&p-Xylene	<2.000	100	98.88	99	78-126	ug/L	

Project Name Kop Flex

PSS Project No.: 20073004

Analytical Method: SW-846 8260 B

Seq Number: 176690

MB Sample Id: 82561-1-BLK

Matrix: Water

LCS Sample Id: 82561-1-BKS

Prep Method: SW5030B

Date Prep: 08/03/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	49.50	99	75-130	ug/L	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	
4-Bromofluorobenzene	101		96		87-109	%	
Dibromofluoromethane	100		98		93-111	%	
Toluene-D8	99		101		91-109	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 176934

MB Sample Id: 82682-1-BLK

Matrix: Water

LCS Sample Id: 82682-1-BKS

Prep Method: SW5030B

Date Prep: 08/13/20

LCSD Sample Id: 82682-1-BSD

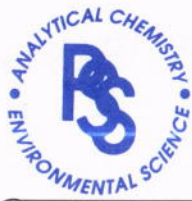
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	26.00	87	28.29	94	50-150	8	20	ug/L	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units			
Toluene-D8	97		100		99		80-120	%			

F = RPD exceeded the laboratory control limits

X = Recovery of MS, MSD or both outside of QC Criteria

H= Recovery of BS,BSD or both exceeded the laboratory control limits

L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

1 *CLIENT: <u>WSP</u>		*OFFICE LOC: <u>Herndon, VA</u>		PSS Work Order #: <u>20073004</u>			PAGE <u>1</u> OF <u>1</u>		
*PROJECT MGR: <u>Eric Johnson</u>		*PHONE NO.: <u>(703) 709-6500</u>		Matrix Codes: SW =Surface Wtr DW =Drinking Wtr GW =Ground Wtr WW =Waste Wtr O =Oil S =Soil L =Liquid SOL =Solid A =Air WI =Wipe					
EMAIL: <u>eric.johnson@wsp.com</u>		FAX NO.: <u>()</u>		No. CONTAINERS Preservatives Used: <u>HCl HCl HCl</u> Analysis/Method Required: <u>14-dioxane (82608 SIM)</u> <u>VOCs (82608)</u> <u>VOCs (624)</u>					
*PROJECT NAME: <u>Kop-flex</u>		PROJECT NO.: <u>31401545.010/09</u>							
SITE LOCATION: <u>Hanover, MD</u>		P.O. NO.:		C = COMP G = GRAB * 3					
SAMPLER(S): <u>Shannon Burke</u> <u>Lauren Johnson</u>		DW CERT NO.:							
LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No.	CONTAINERS	C	G	REMARKS
1	Effluent VSP-4	7/30/20	0910	WW	3	G	X		
2	Influent VSP-1	7/30/20	0945	6W	6	G	X	X	
3	TB-073020	7/30/20	—	W	4	—	X	X	
5 Relinquished By: (1) <u>Shannon Burke</u>		Date	Time	Received By:		4 *Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			# of Coolers: <u>1 TR: 2.8°C</u>
Relinquished By: (2)		Date	Time	Received By:		Data Deliverables Required: COA <input type="checkbox"/> QC <input type="checkbox"/> SUMM <input type="checkbox"/> CLP <input type="checkbox"/> LIKE <input type="checkbox"/> OTHER <input type="checkbox"/>			Custody Seal: <u>Cooler-Intact</u>
Relinquished By: (3)		Date	Time	Received By:		Special Instructions: <u>Standard 10-day TAT</u>			Ice Present: <u>PRES</u> Temp: <u>2.8°-2.9°C</u>
Relinquished By: (4)		Date	Time	Received By:		DW COMPLIANCE? YES <input type="checkbox"/> EDD FORMAT TYPE _____			Shipping Carrier: <u>Cost</u>
						STATE RESULTS REPORTED TO: MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER _____			

6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other applicable fees if collection becomes necessary. * = REQUIRED

Sample Receipt Checklist

Project Name: Kop Flex
 PSS Project No.: 20073004

Client Name WSP USA - Herndon
Disposal Date 09/03/2020

Received By Thomas Wingate
Date Received 07/30/2020 12:26:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 2.9
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Shannon Burke/Lauren Johnson
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 3
 Total No. of Containers Received 13


Preservation

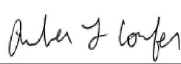
Total Metals (pH<2) N/A
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) No
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By:  Date: 07/30/2020
 Thomas Wingate

PM Review and Approval:  Date: 07/30/2020
 Amber Confer
Page 14 of 14 **Version 1.000**

Project Name: Kop-Flex
PSS Project No.: 20082609

September 10, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20082609**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010-04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20082609**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on September 30, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Project Name: Kop-Flex
PSS Project No.: 20082609

Project ID: 31401545.010-04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 08/26/2020 at 12:55 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20082609-001	Effluent VSP-4	WASTE WATER	08/26/20 11:50

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 20082609

Sample ID: Effluent VSP-4 **Date/Time Sampled: 08/26/2020 11:50** **PSS Sample ID: 20082609-001**
Matrix: WASTE WATER **Date/Time Received: 08/26/2020 12:55**

Dissolved Metals Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	3.0	ug/L	1.0		1	08/31/20	08/31/20 22:57	1064
Lead	ND	ug/L	1.0		1	08/31/20	09/02/20 13:27	1064
Nickel	14.3	ug/L	1.00		1	08/31/20	08/31/20 22:57	1064
Zinc	25.9	ug/L	20.0		1	08/31/20	08/31/20 22:57	1064

Total Metals + Hardness Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	5.0	ug/L	1.0		1	08/28/20	09/01/20 00:04	1064
Lead	ND	ug/L	1.0		1	08/28/20	09/01/20 18:55	1064
Nickel	13.8	ug/L	1.00		1	08/28/20	09/01/20 00:04	1064
Zinc	27.6	ug/L	20.0		1	08/28/20	09/01/20 00:04	1064
Hardness (Ca & Mg)	15	mg/L	0.66		1	08/28/20	09/01/20 00:04	1064

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 177374 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Chloromethane	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Vinyl Chloride	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Bromomethane	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Chloroethane	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Methylene Chloride	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Chloroform	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Benzene	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Trichloroethene	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20082609

Sample ID: Effluent VSP-4 **Date/Time Sampled: 08/26/2020 11:50** **PSS Sample ID: 20082609-001**
Matrix: WASTE WATER **Date/Time Received: 08/26/2020 12:55**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 177374 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Bromodichloromethane	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Toluene	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Tetrachloroethylene	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Dibromochloromethane	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Chlorobenzene	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Ethylbenzene	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Bromoform	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	08/28/20	08/28/20 12:46	1011
Surrogate(s)	Recovery		Limits					
<i>Dibromofluoromethane</i>	103 %		87-120		1	08/28/20	08/28/20 12:46	1011
<i>4-Bromofluorobenzene</i>	98 %		85-147		1	08/28/20	08/28/20 12:46	1011
<i>Toluene-D8</i>	101 %		88-110		1	08/28/20	08/28/20 12:46	1011

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	08/27/20	08/27/20 10:47	1061

Biochemical Oxygen Demand Analytical Method: SM 5210B -2011

Start time: 26-Aug-20 16:00

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		08/31/20	08/31/20 17:00	4005

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20082609

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

20082609: Analyses associated with analyst code 4005 were performed by Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

Analytical:

Volatile Organics Compounds (TVO)

Batch: 177374

Method exceedance: A target analyte was detected in the method blank; Chloromethane was 0.19 ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

Lab Chronology

Project Name: Kop-Flex
 PSS Project No.: 20082609

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	20082609-001	W	82888	177438	08/28/2020 13:05	09/01/2020 00:04
	82888-1-BKS	BKS	82888-1-BKS	W	82888	177438	08/28/2020 13:05	08/31/2020 23:59
	82888-1-BLK	BLK	82888-1-BLK	W	82888	177438	08/28/2020 13:05	08/31/2020 23:54
	Effluent VSP-4 S	MS	20082609-001 S	W	82888	177438	08/28/2020 13:05	09/01/2020 00:09
	FT-30 S	MS	20082717-001 S	W	82888	177438	08/28/2020 13:05	09/01/2020 02:34
	Effluent VSP-4 SD	MSD	20082609-001 S	W	82888	177438	08/28/2020 13:05	09/01/2020 00:15
	82888-1-BKS	Reanalysis	82888-1-BKS	W	82888	177464	08/28/2020 13:05	09/01/2020 15:20
	82888-1-BLK	Reanalysis	82888-1-BLK	W	82888	177464	08/28/2020 13:05	09/01/2020 15:15
	Effluent VSP-4	Reanalysis	20082609-001	W	82888	177479	08/28/2020 13:05	09/01/2020 18:55
EPA 200.8	Effluent VSP-4	Initial	20082609-001	W	82916	177435	08/31/2020 17:38	08/31/2020 22:57
	82916-1-BKS	BKS	82916-1-BKS	W	82916	177435	08/31/2020 17:38	08/31/2020 22:00
	82916-1-BLK	BLK	82916-1-BLK	W	82916	177435	08/31/2020 17:38	08/31/2020 21:55
	Influent200825 S	MS	20082502-001 S	W	82916	177435	08/31/2020 17:38	08/31/2020 22:42
	Influent200825 SD	MSD	20082502-001 S	W	82916	177435	08/31/2020 17:38	08/31/2020 22:47
	82916-1-BKS	Reanalysis	82916-1-BKS	W	82916	177465	08/31/2020 17:38	09/01/2020 15:20
	82916-1-BLK	Reanalysis	82916-1-BLK	W	82916	177465	08/31/2020 17:38	09/01/2020 15:16
	Effluent VSP-4	Reanalysis	20082609-001	W	82916	177505	08/31/2020 17:38	09/02/2020 13:27
EPA 624 .1	Effluent VSP-4	Initial	20082609-001	W	82895	177374	08/28/2020 07:55	08/28/2020 12:46
	82895-1-BKS	BKS	82895-1-BKS	W	82895	177374	08/28/2020 07:55	08/28/2020 09:00
	82895-1-BLK	BLK	82895-1-BLK	W	82895	177374	08/28/2020 07:55	08/28/2020 10:53
	20200825g S	MS	20082612-001 S	W	82895	177374	08/28/2020 07:55	08/28/2020 14:16
	20200825g SD	MSD	20082612-001 S	W	82895	177374	08/28/2020 07:55	08/28/2020 14:39
SM 2540D -2011	Effluent VSP-4	Initial	20082609-001	W	177293	177293	08/27/2020 10:47	08/27/2020 10:47
	177293-1-BLK	BLK	177293-1-BLK	W	177293	177293	08/27/2020 10:47	08/27/2020 10:47
	001 D	MD	20082602-001 D	W	177293	177293	08/27/2020 10:47	08/27/2020 10:47
SM 5210B -2011	Effluent VSP-4	Initial	20082609-001	W	177679	177679	08/31/2020 17:00	08/31/2020 17:00

QC Summary

Project Name Kop-Flex
PSS Project No.: 20082609

Analytical Method: SM 2540D -2011

Seq Number: 177293 Matrix: Water
MB Sample Id: 177293-1-BLK

Parameter	MB Result	LOD	RL	Units	Flag
Suspended Solids	ND	0.5000	1.000	mg/L	

Analytical Method: EPA 200.8

Seq Number: 177438 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 82888-1-BLK LCS Sample Id: 82888-1-BKS Date Prep: 08/28/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	36.97	92	85-115	ug/L	
Lead	<1.000	40.00	44.57	111	85-115	ug/L	
Nickel	<1.000	40.00	35.67	89	85-115	ug/L	
Zinc	<20.00	200	175.4	88	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 177435 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 82916-1-BLK LCS Sample Id: 82916-1-BKS Date Prep: 08/31/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	39.11	98	85-115	ug/L	
Nickel	<1.000	40.00	38.70	97	85-115	ug/L	
Zinc	<20.00	200	195.8	98	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 177465 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 82916-1-BLK LCS Sample Id: 82916-1-BKS Date Prep: 08/31/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<1.000	40.00	44.73	112	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 177438 Matrix: Waste Water Prep Method: E200.8_PREP
Parent Sample Id: 20082609-001 MS Sample Id: 20082609-001 S MSD Sample Id: 20082609-001 SD Date Prep: 08/28/20

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	4.979	40.00	42.25	93	42.43	94	70-130	1	25	ug/L	
Lead	<1.000	40.00	44.58	111	44.98	112	70-130	1	25	ug/L	
Nickel	13.84	40.00	49.99	90	50.05	91	70-130	1	25	ug/L	
Zinc	27.57	200	207	90	208.2	90	70-130	0	25	ug/L	

QC Summary

Project Name Kop-Flex
PSS Project No.: 20082609

Analytical Method: EPA 200.8

Seq Number: 177464

REBLK Sample Id: 82888-1-BLK

Matrix: Water

LCS Sample Id: 82888-1-BKS

Prep Method: E200.8_PREP

Date Prep: 08/28/20

Parameter	REBLK Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	38.40	96	85-115	ug/L	
Lead	<1.000	40.00	38.95	97	85-115	ug/L	
Nickel	<1.000	40.00	36.75	92	85-115	ug/L	
Zinc	<20.00	200	179.3	90	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 177465

REBLK Sample Id: 82916-1-BLK

Matrix: Water

LCS Sample Id: 82916-1-BKS

Prep Method: E200.8_PREP

Date Prep: 08/31/20

Parameter	REBLK Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	40.47	101	85-115	ug/L	
Nickel	<1.000	40.00	38.80	97	85-115	ug/L	
Zinc	<20.00	200	201.1	101	85-115	ug/L	

Project Name Kop-Flex
PSS Project No.: 20082609

Analytical Method: EPA 624 .1

Seq Number: 177374

MB Sample Id: 82895-1-BLK

Matrix: Water

LCS Sample Id: 82895-1-BKS

Prep Method: E624PREP

Date Prep: 08/28/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	41.88	84	54-148	ug/L	
Chloromethane	<1.000	50.00	44.31	89	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	45.53	91	5-195	ug/L	
Bromomethane	<1.000	50.00	43.22	86	15-185	ug/L	
Chloroethane	<1.000	50.00	43.36	87	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	49.48	99	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	50.24	100	50-150	ug/L	
Methylene Chloride	<1.000	50.00	49.94	100	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	50.58	101	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	50.04	100	70-130	ug/L	
Chloroform	<1.000	50.00	47.84	96	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	53.37	107	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	53.03	106	70-130	ug/L	
Benzene	<1.000	50.00	51.99	104	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	53.09	106	70-130	ug/L	
Trichloroethene	<1.000	50.00	52.42	105	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	53.22	106	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	56.03	112	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	53.92	108	25-175	ug/L	
Toluene	<1.000	50.00	50.91	102	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	55.86	112	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	53.04	106	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	50.64	101	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	55.48	111	70-135	ug/L	
Chlorobenzene	<1.000	50.00	52.06	104	65-135	ug/L	
Ethylbenzene	<1.000	50.00	53.95	108	60-140	ug/L	
Bromoform	<1.000	50.00	55.22	110	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	52.31	105	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	52.87	106	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	51.77	104	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	53.92	108	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	103		99		87-120	%
4-Bromofluorobenzene	99		98		85-147	%
Toluene-D8	100		99		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

**PHASE
SEPARATION
SCIENCE**

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

www.phaseonline.com ~ info@phaseonline.com

6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

PSS CLIENT: WSP USA		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 20082609		PAGE 1 OF 1						
BILL TO (if different):		PHONE #: 703-709-6500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe								
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes		HCl HNO ₃ HNO ₂ N/A N/A		Preservative Codes 1 - HCL 2 - H ₂ SO ₄ 3 - HNO ₃ 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit		
PROJECT NAME: Kop-Flex		PROJECT #: 31401545.010-04				Analysis/Method Required		VOCs (624) Total metals + hardness (200.8) Dissolved metals (200.8) TSS BOD				
SITE LOCATION: Hanover, MD		P.O. #:										
SAMPLER(S): Shannah Burke		DW CERT #:										
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes		Analysis/Method Required		Preservative Codes	
1	Effluent VSP-4	8/26/20	1150	WW	7	G	X	X	X	X	X	
Relinquished By: (1) <i>Shannah Burke</i>		Date	Time	Received By: <i>[Signature]</i>		Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other		Ice Present: YES TB: 4.3°C		Custody Seal: Cooler-Intact		
Relinquished By: (2)		Date	Time	Received By:		STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER		# Coolers: 1 Temp: 3.9-4.4°C		Shipping Carrier: DMT		
Relinquished By: (3)		Date	Time	Received By:		COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW		Special Instructions: Dissolved metals field-filtered Metals = Cu, Pb, Ni, Zn Standard 10-day TAT				
Relinquished By: (4)		Date	Time	Received By:		EDD FORMAT TYPE						

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 20082609

Client Name WSP USA - Herndon
Disposal Date 09/30/2020

Received By Thomas Wingate
Date Received 08/26/2020 12:55:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
Seal(s) Signed / Dated? Yes

Ice Present
Temp (deg C) 4.4
Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
Chain of Custody Yes

Sampler Name Shannon Burke
MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
Intact? Yes
Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
Total No. of Containers Received 7

Preservation

Total Metals (pH<2) Yes
Dissolved Metals, filtered within 15 minutes of collection (pH<2) Yes
Orthophosphorus, filtered within 15 minutes of collection N/A
Cyanides (pH>12) N/A
Sulfide (pH>9) N/A
TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
TOX, TKN, NH3, Total Phos (pH<2) N/A
VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
Do VOA vials have zero headspace? Yes
624 VOC (Rcvd at least one unpreserved VOA vial) No
524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 08/26/2020

PM Review and Approval: Amber Confer Date: 08/26/2020

Project Name: Kop-Flex
PSS Project No.: 20082610

September 10, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20082610**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010-04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20082610**.

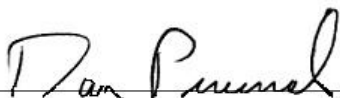
All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on September 30, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 20082610

Project ID: 31401545.010-04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 08/26/2020 at 12:55 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20082610-001	Effluent VSP-4	WASTE WATER	08/26/20 11:50
20082610-002	TB-082620	WATER	08/26/20 12:55

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20082610

Sample ID: Effluent VSP-4 **Date/Time Sampled: 08/26/2020 11:50** **PSS Sample ID: 20082610-001**

Matrix: WASTE WATER **Date/Time Received: 08/26/2020 12:55**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	09/09/20	09/09/20 17:11	1045
Surrogate(s)	Recovery		Limits					
<i>Toluene-D8</i>	<i>105</i>	<i>%</i>	<i>80-120</i>		<i>1</i>	<i>09/09/20</i>	<i>09/09/20 17:11</i>	<i>1045</i>

Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 20082610

Sample ID: TB-082620 **Date/Time Sampled: 08/26/2020 12:55** **PSS Sample ID: 20082610-002**
Matrix: WATER **Date/Time Received: 08/26/2020 12:55**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 177374 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Chloromethane	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Vinyl Chloride	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Bromomethane	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Chloroethane	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Methylene Chloride	3.5	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Chloroform	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Benzene	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Trichloroethene	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Bromodichloromethane	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Toluene	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Tetrachloroethylene	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Dibromochloromethane	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Chlorobenzene	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Ethylbenzene	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
Bromoform	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	08/28/20	08/28/20 13:08	1011

Surrogate(s)	Recovery	Limits				
Dibromofluoromethane	102 %	87-120	1	08/28/20	08/28/20 13:08	1011
4-Bromofluorobenzene	97 %	85-147	1	08/28/20	08/28/20 13:08	1011
Toluene-D8	100 %	88-110	1	08/28/20	08/28/20 13:08	1011

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20082610

Sample ID: TB-082620 **Date/Time Sampled: 08/26/2020 12:55** **PSS Sample ID: 20082610-002**

Matrix: WATER **Date/Time Received: 08/26/2020 12:55**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	09/09/20	09/09/20 17:34	1045
Surrogate(s)	Recovery		Limits					
<i>Toluene-D8</i>	<i>104</i>	<i>%</i>	<i>80-120</i>		<i>1</i>	<i>09/09/20</i>	<i>09/09/20 17:34</i>	<i>1045</i>

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20082610

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Analytical:

Volatile Organics Compounds (TVO)

Batch: 177374

Method exceedance: A target analyte was detected in the method blank; Chloromethane was 0.19 ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop-Flex
 PSS Project No.: 20082610

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-082620	Initial	20082610-002	W	82895	177374	08/28/2020 07:55	08/28/2020 13:08
	82895-1-BKS	BKS	82895-1-BKS	W	82895	177374	08/28/2020 07:55	08/28/2020 09:00
	82895-1-BLK	BLK	82895-1-BLK	W	82895	177374	08/28/2020 07:55	08/28/2020 10:53
	20200825g S	MS	20082612-001 S	W	82895	177374	08/28/2020 07:55	08/28/2020 14:16
	20200825g SD	MSD	20082612-001 S	W	82895	177374	08/28/2020 07:55	08/28/2020 14:39
SW-846 8260 B-Modified	Effluent VSP-4	Initial	20082610-001	W	83034	177688	09/09/2020 13:49	09/09/2020 17:11
	TB-082620	Initial	20082610-002	W	83034	177688	09/09/2020 13:49	09/09/2020 17:34
	83034-1-BKS	BKS	83034-1-BKS	W	83034	177688	09/09/2020 13:49	09/09/2020 15:20
	83034-1-BLK	BLK	83034-1-BLK	W	83034	177688	09/09/2020 13:49	09/09/2020 16:49
	83034-1-BSD	BSD	83034-1-BSD	W	83034	177688	09/09/2020 13:49	09/09/2020 15:42

Project Name Kop-Flex

PSS Project No.: 20082610

Analytical Method: EPA 624 .1

Seq Number: 177374

MB Sample Id: 82895-1-BLK

Matrix: Water

LCS Sample Id: 82895-1-BKS

Prep Method: E624PREP

Date Prep: 08/28/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	41.88	84	54-148	ug/L	
Chloromethane	<1.000	50.00	44.31	89	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	45.53	91	5-195	ug/L	
Bromomethane	<1.000	50.00	43.22	86	15-185	ug/L	
Chloroethane	<1.000	50.00	43.36	87	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	49.48	99	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	50.24	100	50-150	ug/L	
Methylene Chloride	<1.000	50.00	49.94	100	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	50.58	101	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	50.04	100	70-130	ug/L	
Chloroform	<1.000	50.00	47.84	96	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	53.37	107	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	53.03	106	70-130	ug/L	
Benzene	<1.000	50.00	51.99	104	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	53.09	106	70-130	ug/L	
Trichloroethene	<1.000	50.00	52.42	105	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	53.22	106	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	56.03	112	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	53.92	108	25-175	ug/L	
Toluene	<1.000	50.00	50.91	102	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	55.86	112	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	53.04	106	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	50.64	101	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	55.48	111	70-135	ug/L	
Chlorobenzene	<1.000	50.00	52.06	104	65-135	ug/L	
Ethylbenzene	<1.000	50.00	53.95	108	60-140	ug/L	
Bromoform	<1.000	50.00	55.22	110	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	52.31	105	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	52.87	106	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	51.77	104	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	53.92	108	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	103		99		87-120	%
4-Bromofluorobenzene	99		98		85-147	%
Toluene-D8	100		99		88-110	%

Analytical Method: SW-846 8260 B-Modified

Seq Number: 177688

MB Sample Id: 83034-1-BLK

Matrix: Water

LCS Sample Id: 83034-1-BKS

Prep Method: SW5030B

Date Prep: 09/09/20

LCSD Sample Id: 83034-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	39.03	130	34.26	114	50-150	13	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	103		106		102		80-120	%

Project Name Kop-Flex
PSS Project No.: 20082610

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

**PHASE
SEPARATION
SCIENCE**

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

www.phaseonline.com ~ info@phaseonline.com

6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

PSS CLIENT: WSP USA		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 20082610			PAGE 1 OF 1											
BILL TO (if different):		PHONE #: 703-709-6500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe														
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes: HCl HCl						Preservative Codes: 1 - HCL 2 - H ₂ SO ₄ 3 - HNO ₃ 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit						
PROJECT NAME: Kop-flex		PROJECT #: 31401545010-04				Analysis/Method Required ③ 1,4-dioxane (B260B-51M) VOCs (624)												
SITE LOCATION: Hanover, MD		P.O. #:																
SAMPLER(S): Shannon Burke		DW CERT #:																
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Analysis/Method Required						Preservative Codes					
1	Effluent VSP-4	8/26/20	1150	WW	3	G	X											
2	TB-082620	—		TB	4	-	X	X										
Relinquished By: (1) <i>Shannon Burke</i>		Date 8/26/20	Time 1255	Received By: <i>[Signature]</i>	Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			Ice Present: PEES TB: 4.3°C										
Relinquished By: (2)		Date	Time	Received By:	STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER			Custody Seal: Cooler-Intact										
Relinquished By: (3)		Date	Time	Received By:	COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW			# Coolers: 1 Temp: 5.1°-5.4°C										
Relinquished By: (4)		Date	Time	Received By:	EDD FORMAT TYPE			Shipping Carrier: CWA										
							Special Instructions: Standard 10-day TAT											

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop-Flex
 PSS Project No.: 20082610

Client Name WSP USA - Herndon
Disposal Date 09/30/2020

Received By Thomas Wingate
Date Received 08/26/2020 12:55:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 5.4
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Shannon Burke
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 2
 Total No. of Containers Received 7


Preservation


Total Metals (pH<2) N/A
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) No
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By:  Date: 08/26/2020
 Thomas Wingate

PM Review and Approval:  Date: 08/26/2020
 Amber Confer
 Page 11 of 11 Version 1.000

Project Name: Kop-Flex
PSS Project No.: 20092811

October 12, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20092811**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010-04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20092811**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 2, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Project Name: Kop-Flex
PSS Project No.: 20092811

Project ID: 31401545.010-04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/28/2020 at 12:38 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20092811-001	Effluent VSP-4	WASTE WATER	09/28/20 09:25

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 20092811

Sample ID: Effluent VSP-4 **Date/Time Sampled: 09/28/2020 09:25** **PSS Sample ID: 20092811-001**
Matrix: WASTE WATER **Date/Time Received: 09/28/2020 12:38**

Dissolved Metals Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	3.8	ug/L	1.0		1	09/30/20	09/30/20 14:52	1051
Lead	ND	ug/L	1.0		1	09/30/20	09/30/20 14:52	1051
Nickel	15.6	ug/L	1.00		1	09/30/20	09/30/20 14:52	1051
Zinc	23.2	ug/L	20.0		1	09/30/20	09/30/20 14:52	1051

Total Metals + Hardness Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	6.2	ug/L	1.0		1	09/30/20	09/30/20 19:19	1051
Lead	ND	ug/L	1.0		1	09/30/20	09/30/20 19:19	1051
Nickel	16.3	ug/L	1.00		1	09/30/20	09/30/20 19:19	1051
Zinc	28.1	ug/L	20.0		1	09/30/20	09/30/20 19:19	1051
Hardness (Ca & Mg)	20	mg/L	0.66		1	09/30/20	09/30/20 19:19	1051

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Chloromethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Vinyl Chloride	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Bromomethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Chloroethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Methylene Chloride	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Chloroform	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Benzene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Trichloroethene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20092811

Sample ID: Effluent VSP-4 **Date/Time Sampled: 09/28/2020 09:25** **PSS Sample ID: 20092811-001**
Matrix: WASTE WATER **Date/Time Received: 09/28/2020 12:38**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Bromodichloromethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Toluene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Tetrachloroethylene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Dibromochloromethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Chlorobenzene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Ethylbenzene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Bromoform	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:30	1011
Surrogate(s)	Recovery		Limits					
Dibromofluoromethane	98 %		87-120		1	09/29/20	09/29/20 14:30	1011
4-Bromofluorobenzene	96 %		85-147		1	09/29/20	09/29/20 14:30	1011
Toluene-D8	99 %		88-110		1	09/29/20	09/29/20 14:30	1011

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	09/29/20	09/29/20 09:33	1061

Biochemical Oxygen Demand Analytical Method: SM 5210B -2011

Start time: 28-Sep-20 16:45

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		10/03/20	10/03/20 16:45	4005

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20092811

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

20092811: Analyses associated with analyst code 4005 were performed by Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

Lab Chronology

Project Name: Kop-Flex
PSS Project No.: 20092811

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	20092811-001	W	83304	178374	09/30/2020 17:12	09/30/2020 19:19
	83304-1-BKS	BKS	83304-1-BKS	W	83304	178374	09/30/2020 17:12	09/30/2020 19:14
	83304-1-BLK	BLK	83304-1-BLK	W	83304	178374	09/30/2020 17:12	09/30/2020 19:09
	Effluent VSP-4 S	MS	20092811-001 S	W	83304	178374	09/30/2020 17:12	09/30/2020 19:24
	Effluent VSP-4 SD	MSD	20092811-001 S	W	83304	178374	09/30/2020 17:12	09/30/2020 19:28
EPA 200.8	Effluent VSP-4	Initial	20092811-001	W	83298	178349	09/30/2020 13:37	09/30/2020 14:52
	83298-1-BKS	BKS	83298-1-BKS	W	83298	178349	09/30/2020 13:37	09/30/2020 14:48
	83298-1-BLK	BLK	83298-1-BLK	W	83298	178349	09/30/2020 13:37	09/30/2020 14:43
	Effluent VSP-4 S	MS	20092811-001 S	W	83298	178349	09/30/2020 13:37	09/30/2020 14:57
	Effluent VSP-4 SD	MSD	20092811-001 S	W	83298	178349	09/30/2020 13:37	09/30/2020 15:02
EPA 624 .1	Effluent VSP-4	Initial	20092811-001	W	83294	178312	09/29/2020 09:44	09/29/2020 14:30
	83294-1-BKS	BKS	83294-1-BKS	W	83294	178312	09/29/2020 09:44	09/29/2020 10:40
	83294-1-BLK	BLK	83294-1-BLK	W	83294	178312	09/29/2020 09:44	09/29/2020 12:10
	TB-092820 S	MS	20092812-002 S	W	83294	178312	09/29/2020 09:44	09/29/2020 15:38
	TB-092820 SD	MSD	20092812-002 S	W	83294	178312	09/29/2020 09:44	09/29/2020 16:00
SM 2540D -2011	Effluent VSP-4	Initial	20092811-001	W	178276	178276	09/29/2020 09:33	09/29/2020 09:33
	178276-1-BLK	BLK	178276-1-BLK	W	178276	178276	09/29/2020 09:33	09/29/2020 09:33
	001 D	MD	20092813-001 D	W	178276	178276	09/29/2020 09:33	09/29/2020 09:33
SM 5210B -2011	Effluent VSP-4	Initial	20092811-001	W	178643	178643	10/03/2020 16:45	10/03/2020 16:45

Project Name Kop-Flex
PSS Project No.: 20092811

Analytical Method: SM 2540D -2011

Seq Number: 178276

Matrix: Water
MB Sample Id: 178276-1-BLK

Parameter	MB Result	LOD	RL	Units	Flag
Suspended Solids	ND	0.5000	1.000	mg/L	

Analytical Method: EPA 200.8

Seq Number: 178349

Matrix: Water
LCS Sample Id: 83298-1-BKS

Prep Method: E200.8_PREP
Date Prep: 09/30/20

MB Sample Id: 83298-1-BLK

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	40.94	102	85-115	ug/L	
Lead	<1.000	40.00	39.26	98	85-115	ug/L	
Nickel	<1.000	40.00	42.63	107	85-115	ug/L	
Zinc	<20.00	200	214.1	107	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 178374

Matrix: Water
LCS Sample Id: 83304-1-BKS

Prep Method: E200.8_PREP
Date Prep: 09/30/20

MB Sample Id: 83304-1-BLK

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	40.36	101	85-115	ug/L	
Lead	<1.000	40.00	42.62	107	85-115	ug/L	
Nickel	<1.000	40.00	40.67	102	85-115	ug/L	
Zinc	<20.00	200	193.8	97	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 178349

Matrix: Waste Water
MS Sample Id: 20092811-001 S

Prep Method: E200.8_PREP
Date Prep: 09/30/20
MSD Sample Id: 20092811-001 SD

Parent Sample Id: 20092811-001

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	3.827	40.00	45.63	105	44.77	102	70-130	3	25	ug/L	
Lead	<1.000	40.00	39.33	98	38.51	96	70-130	2	25	ug/L	
Nickel	15.61	40.00	57.55	105	57.80	105	70-130	0	25	ug/L	
Zinc	23.18	200	233.5	105	232.5	105	70-130	0	25	ug/L	

Project Name Kop-Flex

PSS Project No.: 20092811

Analytical Method: EPA 200.8

Seq Number: 178374

Parent Sample Id: 20092811-001

Matrix: Waste Water

MS Sample Id: 20092811-001 S

Prep Method: E200.8_PREP

Date Prep: 09/30/20

MSD Sample Id: 20092811-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	6.153	40.00	46.26	100	46.22	100	70-130	0	25	ug/L	
Lead	<1.000	40.00	41.94	105	43.18	108	70-130	3	25	ug/L	
Nickel	16.26	40.00	53.82	94	53.18	92	70-130	2	25	ug/L	
Zinc	28.12	200	224.7	98	228.5	100	70-130	2	25	ug/L	

Analytical Method: EPA 624 .1

Seq Number: 178312

MB Sample Id: 83294-1-BLK

Matrix: Water

LCS Sample Id: 83294-1-BKS

Prep Method: E624PREP

Date Prep: 09/29/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	29.03	58	54-148	ug/L	
Chloromethane	<1.000	50.00	37.39	75	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	39.73	79	5-195	ug/L	
Bromomethane	<1.000	50.00	41.51	83	15-185	ug/L	
Chloroethane	<1.000	50.00	43.83	88	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	43.62	87	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	44.32	89	50-150	ug/L	
Methylene Chloride	<1.000	50.00	43.15	86	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	45.99	92	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	45.18	90	70-130	ug/L	
Chloroform	<1.000	50.00	43.17	86	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	44.10	88	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	45.68	91	70-130	ug/L	
Benzene	<1.000	50.00	44.43	89	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	43.33	87	70-130	ug/L	
Trichloroethene	<1.000	50.00	45.27	91	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	43.71	87	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	46.66	93	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	44.30	89	25-175	ug/L	
Toluene	<1.000	50.00	45.72	91	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	45.06	90	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	46.59	93	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	48.81	98	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	47.58	95	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.92	96	65-135	ug/L	
Ethylbenzene	<1.000	50.00	48.34	97	60-140	ug/L	
Bromoform	<1.000	50.00	49.04	98	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	48.20	96	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	51.94	104	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	50.98	102	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	51.92	104	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	99		98		87-120	%
4-Bromofluorobenzene	95		96		85-147	%
Toluene-D8	99		98		88-110	%

Project Name Kop-Flex
PSS Project No.: 20092811

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

PHASE SEPARATION SCIENCE

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

PSS CLIENT: WSP		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 20092811				PAGE 1 OF 1							
BILL TO (if different):		PHONE #: 703-709-6500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe											
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes						Preservative Codes			
PROJECT NAME: Kop-Flex		PROJECT #: 31401545.010-04				1		3	3				1 - HCL		
SITE LOCATION: Hanover, Md		P.O. #:				Analysis/Method Required									
SAMPLER(S): Lauren Johnson		DW CERT #:				③									
SAMPLER(S): Lauren Johnson		DW CERT #:		VOCS v24.1 BOD TSS Total mg/lair dissolved metals 200.8 200.8											
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	1	2	3	4	5	6	7	8	9
1	Effluent vsp-4	9/28/20	9:25	WW	7	G	X	X	X	X	X				
Relinquished By: (1) <i>Lauren Johnson</i>		Date 9/28/20	Time 12:38	Received By: <i>[Signature]</i>		Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other				Ice Present: PRES TB: 3.5°					
Relinquished By: (2)		Date	Time	Received By:		STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER				Custody Seal: Cook-Intact					
Relinquished By: (3)		Date	Time	Received By:		COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW				# Coolers: 1 Temp: 2.8°-3.4°c					
Relinquished By: (4)		Date	Time	Received By:		EDD FORMAT TYPE				Shipping Carrier: Cia					
						Special Instructions: standard 10 day TAT metals - Zn, Cu, Ni, Pb & hardness dissolved metals field filtered									

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop-Flex
 PSS Project No.: 20092811

Client Name WSP USA - Herndon
Disposal Date 11/02/2020

Received By Thomas Wingate
Date Received 09/28/2020 12:38:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 3.4
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Lauren Johnson
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
 Total No. of Containers Received 7

Preservation

Total Metals (pH<2) Yes
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) Yes
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) No
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 09/28/2020

PM Review and Approval: Amber Confer Date: 09/29/2020

Project Name: Kop-Flex
PSS Project No.: 20092812

October 12, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20092812**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010-04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20092812**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 2, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop-Flex

PSS Project No.: 20092812

Project ID: 31401545.010-04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 09/28/2020 at 12:38 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20092812-001	Effluent VSP-4	WASTE WATER	09/28/20 09:25
20092812-002	TB-092820	WATER	09/28/20 10:49
20092812-002	TB-092820	WATER	09/28/20 10:49

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C** Results Pending Final Confirmation.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail** The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J** The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL** This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND** Not Detected at or above the reporting limit.
- RL** PSS Reporting Limit.
- U** Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20092812

Sample ID: Effluent VSP-4 **Date/Time Sampled: 09/28/2020 09:25** **PSS Sample ID: 20092812-001**
Matrix: WASTE WATER **Date/Time Received: 09/28/2020 12:38**
 1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	6.3	ug/L	1.0		1	10/12/20	10/12/20 13:32	1045
Surrogate(s)	Recovery		Limits					
<i>Toluene-D8</i>	93	%	80-120		1	10/12/20	10/12/20 13:32	1045

Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 20092812

Sample ID: TB-092820 **Date/Time Sampled: 09/28/2020 10:49** **PSS Sample ID: 20092812-002**
Matrix: WATER **Date/Time Received: 09/28/2020 12:38**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Chloromethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Vinyl Chloride	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Bromomethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Chloroethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Methylene Chloride	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Chloroform	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Benzene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Trichloroethene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Bromodichloromethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Toluene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Tetrachloroethylene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Dibromochloromethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Chlorobenzene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Ethylbenzene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
Bromoform	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	09/29/20	09/29/20 14:07	1011

Surrogate(s)	Recovery	Limits				
Dibromofluoromethane	98 %	87-120	1	09/29/20	09/29/20 14:07	1011
4-Bromofluorobenzene	95 %	85-147	1	09/29/20	09/29/20 14:07	1011
Toluene-D8	99 %	88-110	1	09/29/20	09/29/20 14:07	1011

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20092812

Sample ID: TB-092820 **Date/Time Sampled: 09/28/2020 10:49** **PSS Sample ID: 20092812-002**
Matrix: WATER **Date/Time Received: 09/28/2020 12:38**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	10/12/20	10/12/20 13:54	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	94	%	80-120		1	10/12/20	10/12/20 13:54	1045

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20092812

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop-Flex
 PSS Project No.: 20092812

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-092820	Initial	20092812-002	W	83294	178312	09/29/2020 09:44	09/29/2020 14:07
	83294-1-BKS	BKS	83294-1-BKS	W	83294	178312	09/29/2020 09:44	09/29/2020 10:40
	83294-1-BLK	BLK	83294-1-BLK	W	83294	178312	09/29/2020 09:44	09/29/2020 12:10
	TB-092820 S	MS	20092812-002 S	W	83294	178312	09/29/2020 09:44	09/29/2020 15:38
	TB-092820 SD	MSD	20092812-002 S	W	83294	178312	09/29/2020 09:44	09/29/2020 16:00
SW-846 8260 B-Modified	Effluent VSP-4	Initial	20092812-001	W	83429	178641	10/12/2020 08:04	10/12/2020 13:32
	TB-092820	Initial	20092812-002	W	83429	178641	10/12/2020 08:04	10/12/2020 13:54
	83429-1-BKS	BKS	83429-1-BKS	W	83429	178641	10/12/2020 08:04	10/12/2020 11:39
	83429-1-BLK	BLK	83429-1-BLK	W	83429	178641	10/12/2020 08:04	10/12/2020 13:09
	83429-1-BSD	BSD	83429-1-BSD	W	83429	178641	10/12/2020 08:04	10/12/2020 12:02

Project Name Kop-Flex

PSS Project No.: 20092812

Analytical Method: EPA 624 .1

Seq Number: 178312

Matrix: Water

Prep Method: E624PREP

Date Prep: 09/29/20

MB Sample Id: 83294-1-BLK

LCS Sample Id: 83294-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	29.03	58	54-148	ug/L	
Chloromethane	<1.000	50.00	37.39	75	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	39.73	79	5-195	ug/L	
Bromomethane	<1.000	50.00	41.51	83	15-185	ug/L	
Chloroethane	<1.000	50.00	43.83	88	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	43.62	87	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	44.32	89	50-150	ug/L	
Methylene Chloride	<1.000	50.00	43.15	86	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	45.99	92	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	45.18	90	70-130	ug/L	
Chloroform	<1.000	50.00	43.17	86	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	44.10	88	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	45.68	91	70-130	ug/L	
Benzene	<1.000	50.00	44.43	89	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	43.33	87	70-130	ug/L	
Trichloroethene	<1.000	50.00	45.27	91	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	43.71	87	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	46.66	93	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	44.30	89	25-175	ug/L	
Toluene	<1.000	50.00	45.72	91	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	45.06	90	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	46.59	93	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	48.81	98	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	47.58	95	70-135	ug/L	
Chlorobenzene	<1.000	50.00	47.92	96	65-135	ug/L	
Ethylbenzene	<1.000	50.00	48.34	97	60-140	ug/L	
Bromoform	<1.000	50.00	49.04	98	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	48.20	96	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	51.94	104	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	50.98	102	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	51.92	104	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	99		98		87-120	%
4-Bromofluorobenzene	95		96		85-147	%
Toluene-D8	99		98		88-110	%

Project Name Kop-Flex

PSS Project No.: 20092812

Analytical Method: EPA 624 .1

Seq Number: 178312

Parent Sample Id: 20092812-002

Matrix: Water

MS Sample Id: 20092812-002 S

Prep Method: E624PREP

Date Prep: 09/29/20

MSD Sample Id: 20092812-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	31.64	63	30.23	60	43-150	5	27	ug/L	
Chloromethane	<1.000	50.00	41.23	82	37.02	74	1-273	10	60	ug/L	
Vinyl Chloride	<1.000	50.00	42.84	86	40.78	82	1-251	5	66	ug/L	
Bromomethane	<1.000	50.00	41.28	83	39.14	78	1-242	6	61	ug/L	
Chloroethane	<1.000	50.00	48.31	97	43.62	87	14-230	11	78	ug/L	
Trichlorofluoromethane	<1.000	50.00	44.05	88	43.93	88	17-181	0	84	ug/L	
1,1-Dichloroethene	<1.000	50.00	49.05	98	46.75	94	1-234	4	32	ug/L	
Methylene Chloride	<1.000	50.00	44.12	88	44.57	89	1-221	1	28	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	48.13	96	47.01	94	54-156	2	45	ug/L	
1,1-Dichloroethane	<1.000	50.00	49.19	98	47.34	95	59-155	3	40	ug/L	
Chloroform	<1.000	50.00	46.44	93	44.77	90	51-138	3	54	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	48.01	96	46.20	92	52-162	4	36	ug/L	
Carbon Tetrachloride	<1.000	50.00	49.34	99	47.31	95	70-140	4	41	ug/L	
Benzene	<1.000	50.00	47.91	96	46.31	93	37-151	3	61	ug/L	
1,2-Dichloroethane	<1.000	50.00	44.17	88	43.15	86	49-155	2	49	ug/L	
Trichloroethene	<1.000	50.00	48.67	97	46.96	94	70-157	3	48	ug/L	
1,2-Dichloropropane	<1.000	50.00	46.48	93	45.03	90	1-210	3	55	ug/L	
Bromodichloromethane	<1.000	50.00	48.02	96	46.93	94	35-155	2	56	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	45.55	91	44.89	90	1-227	1	58	ug/L	
Toluene	<1.000	50.00	49.10	98	47.53	95	47-150	3	41	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	45.29	91	44.77	90	17-183	1	86	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	48.92	98	48.29	97	52-150	1	45	ug/L	
Tetrachloroethylene	<1.000	50.00	52.28	105	50.23	100	64-148	5	39	ug/L	
Dibromochloromethane	<1.000	50.00	48.31	97	47.60	95	53-149	2	50	ug/L	
Chlorobenzene	<1.000	50.00	51.13	102	49.31	99	37-160	3	53	ug/L	
Ethylbenzene	<1.000	50.00	52.18	104	49.62	99	37-162	5	63	ug/L	
Bromoform	<1.000	50.00	50.32	101	49.81	100	45-169	1	42	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	49.07	98	48.85	98	46-157	0	61	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	53.73	107	52.13	104	59-156	3	43	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	52.23	104	51.26	103	18-190	1	57	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	53.57	107	52.50	105	18-190	2	57	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
Dibromofluoromethane	99		99		87-120	%
4-Bromofluorobenzene	94		95		85-147	%
Toluene-D8	98		99		88-110	%

Analytical Method: SW-846 8260 B-Modified

Seq Number: 178641

MB Sample Id: 83429-1-BLK

Matrix: Water

LCS Sample Id: 83429-1-BKS

Prep Method: SW5030B

Date Prep: 10/12/20

LCSD Sample Id: 83429-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	20.00	32.19	161	29.92	150	50-150	7	20	ug/L	H

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	96		96		96		80-120	%

Project Name Kop-Flex
PSS Project No.: 20092812

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

PHASE SEPARATION SCIENCE

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

www.phaseonline.com ~ info@phaseonline.com

6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

PSS CLIENT: WSP		OFFICE LOCATION: Herndon, VA			PSS Work Order #: 20092812			PAGE 1 OF 1					
BILL TO (if different):		PHONE #: 703-709-0500			Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe								
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com			# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes				Preservative Codes		
PROJECT NAME: Kop - Flex		PROJECT #: 31401545.010-04					<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">1A-Pioxane 8500</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">VOCs 629.1</div> </div>				1 - HCL 2 - H ₂ SO ₄ 3 - HNO ₃ 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit		
SITE LOCATION: Hanover, MD		P.O. #:											
SAMPLER(S): Lauren Johnson		DW CERT #:											
Analysis/Method Required		③											
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB							
1	Effluent VSP-4	9/28/20	9:25	WW	3	G	X						
2	TB-092820	-	-	-	4	-	X	X					
Relinquished By: (1) <i>Lauren Johnson</i>		Date 9/28/20	Time 12:38	Received By: <i>[Signature]</i>		Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			Ice Present: PREV TB: 2.5°C				
Relinquished By: (2)		Date	Time	Received By:		STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER			Custody Seal: Cooler-Intact				
Relinquished By: (3)		Date	Time	Received By:		COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW			# Coolers: 1 Temp: 2.4°-2.5°C				
Relinquished By: (4)		Date	Time	Received By:		EDD FORMAT TYPE			Shipping Carrier: CIML				
						Special Instructions: standard 10 day TAT							

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation Page 11 of 12 and all attorney's or other reasonable fees if collection becomes necessary. Version 3.000

Sample Receipt Checklist

Project Name: Kop-Flex
 PSS Project No.: 20092812

Client Name WSP USA - Herndon
Disposal Date 11/02/2020

Received By Thomas Wingate
Date Received 09/28/2020 12:38:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 3.5
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Lauren Johnson
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 2
 Total No. of Containers Received 7

Preservation

Total Metals (pH<2) N/A
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) No
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

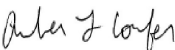
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 09/28/2020

PM Review and Approval:



Amber Confer

Date: 09/29/2020

Project Name: Kop-Flex
PSS Project No.: 20100701

October 21, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20100701**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010-04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20100701**.

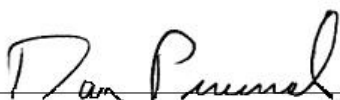
All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 11, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 20100701

Project ID: 31401545.010-04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 10/07/2020 at 09:50 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20100701-001	Effluent VSP-4	WASTE WATER	10/07/20 09:15

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C** Results Pending Final Confirmation.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail** The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J** The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL** This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND** Not Detected at or above the reporting limit.
- RL** PSS Reporting Limit.
- U** Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20100701

Sample ID: Effluent VSP-4 **Date/Time Sampled: 10/07/2020 09:15** **PSS Sample ID: 20100701-001**
Matrix: WASTE WATER **Date/Time Received: 10/07/2020 09:50**

Chemical Oxygen Demand Analytical Method: SM 5220D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chemical Oxygen Demand	ND	mg/L	20		1	10/16/20	10/16/20 13:56	1053

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20100701

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Lab Chronology

Project Name: Kop-Flex
 PSS Project No.: 20100701

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SM 5220D -2011	Effluent VSP-4	Initial	20100701-001	W	178814	178814	10/16/2020 13:56	10/16/2020 13:56
	178814-1-BKS	BKS	178814-1-BKS	W	178814	178814	10/16/2020 13:56	10/16/2020 13:56
	178814-1-BLK	BLK	178814-1-BLK	W	178814	178814	10/16/2020 13:56	10/16/2020 13:56
	Effluent VSP-4 S	MS	20100701-001 S	W	178814	178814	10/16/2020 13:56	10/16/2020 13:56
	Effluent VSP-4 SD	MSD	20100701-001 S	W	178814	178814	10/16/2020 13:56	10/16/2020 13:56

Project Name Kop-Flex
PSS Project No.: 20100701

Analytical Method: SM 5220D -2011

Seq Number: 178814 Matrix: Water
MB Sample Id: 178814-1-BLK LCS Sample Id: 178814-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Chemical Oxygen Demand	<20.00	483	505.7	105	80-120	mg/L	

Analytical Method: SM 5220D -2011

Seq Number: 178814 Matrix: Waste Water
Parent Sample Id: 20100701-001 MS Sample Id: 20100701-001 S MSD Sample Id: 20100701-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Chemical Oxygen Demand	<20.00	48.30	48.90	101	46.80	97	83-149	4	20	mg/L	

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

All fields must be completed accurately. Shaded sections for lab use only.

www.phaseonline.com ~ info@phaseonline.com

6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

PSS CLIENT: WSP		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 20100701			PAGE 1 OF 1						
BILL TO (if different):		PHONE #: 703-709-6500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe									
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes						Preservative Codes	
PROJECT NAME: Kop-Flex		PROJECT #: 31401545.010-04				<div style="display: flex; justify-content: space-between;"> Analysis/Method Required 2 </div> <div style="font-size: 2em; transform: rotate(-45deg); opacity: 0.5;">COD 5520 D</div> <div style="font-size: 1.5em; transform: rotate(-90deg); opacity: 0.5;">3</div>						1 - HCL	
SITE LOCATION: Hanover, Md		P.O. #:										2 - H ₂ SO ₄	
SAMPLER(S): Lauren Johnson		DW CERT #:										3 - HNO ₃	
												4 - NaOH	
				5 - E624KIT									
				6 - ICE									
				7 - Sodium Thiosulfate									
				8 - Ascorbic Acid									
				9 - TerraCora Kit									
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Analysis/Method Required						Preservative Codes
1	Effluent vSP-4	10/7/20	09:15	WW	1	G	X						
Relinquished By: (1) <i>Lauren Johnson</i>		Date	Time	Received By:		Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			Ice Present: PRES TB: 1.8°C				
Relinquished By: (2)		Date	Time	Received By:					Custody Seal: Cooler - Intact				
Relinquished By: (3)		Date	Time	Received By:		STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER			# Coolers: 1 Temp: 2.8°C				
Relinquished By: (4)		Date	Time	Received By:					Shipping Carrier: CLW				
						COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW	Special Instructions: standard 10 day TAT						
						EDD FORMAT TYPE							

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation Page 7 of 8 and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop-Flex
 PSS Project No.: 20100701

Client Name WSP USA - Herndon
Disposal Date 11/11/2020

Received By Thomas Wingate
Date Received 10/07/2020 09:50:00 AM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 2.8
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Lauren Johnson
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
 Total No. of Containers Received 1

Preservation

Total Metals (pH<2) N/A
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) Yes
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) N/A
 Do VOA vials have zero headspace? N/A
 624 VOC (Rcvd at least one unpreserved VOA vial) N/A
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

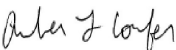
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 10/07/2020

PM Review and Approval:



Amber Confer

Date: 10/07/2020

Project Name: Kop-Flex
PSS Project No.: 20102612

November 10, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20102612**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010-04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20102612**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 30, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 20102612

Project ID: 31401545.010-04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 10/26/2020 at 01:10 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20102612-001	Effluent VSP-4	WASTE WATER	10/26/20 10:20

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C** Results Pending Final Confirmation.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail** The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J** The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL** This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND** Not Detected at or above the reporting limit.
- RL** PSS Reporting Limit.
- U** Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 20102612

Sample ID: Effluent VSP-4 **Date/Time Sampled: 10/26/2020 10:20** **PSS Sample ID: 20102612-001**
Matrix: WASTE WATER **Date/Time Received: 10/26/2020 13:10**

Dissolved Metals Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	3.3	ug/L	1.0		1	10/30/20	10/30/20 21:33	1064
Lead	ND	ug/L	1.0		1	10/30/20	10/30/20 21:33	1064
Nickel	15.0	ug/L	1.00		1	10/30/20	11/09/20 18:44	1051
Zinc	21.5	ug/L	20.0		1	10/30/20	10/30/20 21:33	1064

Total Metals Analytical Method: EPA 200.8 Preparation Method: 200.8

Qualifier(s): See Batch 179277 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	6.7	ug/L	1.0		1	10/30/20	10/30/20 19:41	1064
Lead	ND	ug/L	1.0		1	10/30/20	10/30/20 19:41	1064
Nickel	20.0	ug/L	1.0		1	10/30/20	11/09/20 18:49	1051
Zinc	32.6	ug/L	20.0		1	10/30/20	10/30/20 19:41	1064

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Chloromethane	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Vinyl Chloride	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Bromomethane	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Chloroethane	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Methylene Chloride	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Chloroform	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Benzene	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Trichloroethene	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Bromodichloromethane	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011

Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 20102612

Sample ID: Effluent VSP-4 **Date/Time Sampled: 10/26/2020 10:20** **PSS Sample ID: 20102612-001**
Matrix: WASTE WATER **Date/Time Received: 10/26/2020 13:10**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Toluene	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Tetrachloroethylene	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Dibromochloromethane	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Chlorobenzene	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Ethylbenzene	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Bromoform	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	11/04/20	11/04/20 16:25	1011
Surrogate(s) Recovery Limits								
<i>Dibromofluoromethane</i>	<i>102</i>	<i>%</i>	<i>87-120</i>		<i>1</i>	<i>11/04/20</i>	<i>11/04/20 16:25</i>	<i>1011</i>
<i>4-Bromofluorobenzene</i>	<i>109</i>	<i>%</i>	<i>85-147</i>		<i>1</i>	<i>11/04/20</i>	<i>11/04/20 16:25</i>	<i>1011</i>
<i>Toluene-D8</i>	<i>100</i>	<i>%</i>	<i>88-110</i>		<i>1</i>	<i>11/04/20</i>	<i>11/04/20 16:25</i>	<i>1011</i>

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: 200.8

Qualifier(s): See Batch 179277 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	18	mg/L	0.66		1	10/30/20	10/30/20 19:41	1064

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	10/27/20	10/27/20 15:17	1061

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20102612

Sample ID: Effluent VSP-4 **Date/Time Sampled: 10/26/2020 10:20** **PSS Sample ID: 20102612-001**
Matrix: WASTE WATER **Date/Time Received: 10/26/2020 13:10**

Biochemical Oxygen Demand Analytical Method: SM 5210B -2011

Start time: 28-Oct-20 10:00

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		11/02/20	11/02/20 16:00	4005

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20102612

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

20102612: Analyses associated with analyst code 4005 were performed by Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

Analytical:

Total Metals

Batch: 179277

Method exceedance: Laboratory control sample (LCS) exceedances identified, matrix spike/ matrix spike duplicate samples meet LCS criteria; see QC summary form.

Method exceedance: Continuing Calibration Verification (CCV) falls outside of acceptance limits (85% - 115%) for nickel at 76% recovery.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

Lab Chronology

Project Name: Kop-Flex
 PSS Project No.: 20102612

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	20102612-001	W	83703	179277	10/30/2020 13:53	10/30/2020 19:41
	83703-1-BKS	BKS	83703-1-BKS	W	83703	179277	10/30/2020 13:53	10/30/2020 19:36
	83703-1-BLK	BLK	83703-1-BLK	W	83703	179277	10/30/2020 13:53	10/30/2020 19:31
	Effluent VSP-4 S	MS	20102612-001 S	W	83703	179277	10/30/2020 13:53	10/30/2020 19:45
	Effluent VSP-4 SD	MSD	20102612-001 S	W	83703	179277	10/30/2020 13:53	10/30/2020 19:50
	Effluent VSP-4	Reanalysis	20102612-001	W	83703	179502	10/30/2020 13:53	11/09/2020 18:49
EPA 200.8	Effluent VSP-4	Initial	20102612-001	W	83706	179297	10/30/2020 13:55	10/30/2020 21:33
	83706-1-BKS	BKS	83706-1-BKS	W	83706	179297	10/30/2020 13:55	10/30/2020 21:29
	83706-1-BLK	BLK	83706-1-BLK	W	83706	179297	10/30/2020 13:55	10/30/2020 21:24
	Effluent VSP-4 S	MS	20102612-001 S	W	83706	179297	10/30/2020 13:55	10/30/2020 21:38
	Effluent VSP-4 SD	MSD	20102612-001 S	W	83706	179297	10/30/2020 13:55	10/30/2020 21:43
	83706-1-BKS	Reanalysis	83706-1-BKS	W	83706	179384	10/30/2020 13:55	11/04/2020 17:13
	83706-1-BLK	Reanalysis	83706-1-BLK	W	83706	179384	10/30/2020 13:55	11/04/2020 17:08
	Effluent VSP-4	Reanalysis	20102612-001	W	83706	179501	10/30/2020 13:55	11/09/2020 18:44
EPA 624 .1	Effluent VSP-4	Initial	20102612-001	W	83770	179378	11/04/2020 12:51	11/04/2020 16:25
	83770-1-BKS	BKS	83770-1-BKS	W	83770	179378	11/04/2020 12:51	11/04/2020 13:13
	83770-1-BLK	BLK	83770-1-BLK	W	83770	179378	11/04/2020 12:51	11/04/2020 14:55
	13680-EFF-11/20 S	MS	20110413-001 S	W	83770	179378	11/04/2020 12:51	11/04/2020 17:10
	13680-EFF-11/20 SD	MSD	20110413-001 S	W	83770	179378	11/04/2020 12:51	11/04/2020 17:33
SM 2340B	Effluent VSP-4	Initial	20102612-001	W	83703	179277	11/09/2020 11:43	10/30/2020 19:41
SM 2540D -2011	Effluent VSP-4	Initial	20102612-001	W	179120	179120	10/27/2020 15:17	10/27/2020 15:17
	179120-1-BLK	BLK	179120-1-BLK	W	179120	179120	10/27/2020 15:17	10/27/2020 15:17
	601 D	MD	20102618-002 D	W	179120	179120	10/27/2020 15:17	10/27/2020 15:17
SM 5210B -2011	Effluent VSP-4	Initial	20102612-001	W	179463	179463	11/02/2020 16:00	11/02/2020 16:00

Project Name Kop-Flex
PSS Project No.: 20102612

Analytical Method: SM 2540D -2011

Seq Number: 179120 Matrix: Water
MB Sample Id: 179120-1-BLK

Parameter	MB Result	LOD	RL	Units	Flag
Suspended Solids	ND	0.5000	1.000	mg/L	

Analytical Method: EPA 200.8

Seq Number: 179277 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 83703-1-BLK LCS Sample Id: 83703-1-BKS Date Prep: 10/30/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	37.54	94	85-115	ug/L	
Lead	<1.000	40.00	37.33	93	85-115	ug/L	
Zinc	<20.00	200	190.6	95	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179297 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 83706-1-BLK LCS Sample Id: 83706-1-BKS Date Prep: 10/30/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	35.48	89	85-115	ug/L	
Lead	<1.000	40.00	36.92	92	85-115	ug/L	
Zinc	<20.00	200	181.7	91	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179384 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 83706-1-BLK LCS Sample Id: 83706-1-BKS Date Prep: 10/30/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Nickel	<1.000	40.00	37.19	93	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179277 Matrix: Waste Water Prep Method: E200.8_PREP
Parent Sample Id: 20102612-001 MS Sample Id: 20102612-001 S Date Prep: 10/30/20
MSD Sample Id: 20102612-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	6.697	40.00	41.49	87	44.82	95	70-130	9	25	ug/L	
Lead	<1.000	40.00	35.82	90	38.47	96	70-130	6	25	ug/L	
Nickel	4.283	40.00	38.87	86	44.32	100	70-130	15	25	ug/L	
Zinc	32.63	200	209	88	229.3	98	70-130	11	25	ug/L	

QC Summary

Project Name Kop-Flex
PSS Project No.: 20102612

Analytical Method: EPA 200.8

Seq Number: 179297
Parent Sample Id: 20102612-001

Matrix: Waste Water
MS Sample Id: 20102612-001 S

Prep Method: E200.8_PREP
Date Prep: 10/30/20
MSD Sample Id: 20102612-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	3.252	40.00	40.19	92	42.83	99	70-130	7	25	ug/L	
Lead	<1.000	40.00	45.02	113	43.05	108	70-130	5	25	ug/L	
Nickel	<1.000	40.00	37.55	94	40.83	102	70-130	8	25	ug/L	
Zinc	21.52	200	218.9	99	229.2	104	70-130	5	25	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179384
REBLK Sample Id: 83706-1-BLK

Matrix: Water
LCS Sample Id: 83706-1-BKS

Prep Method: E200.8_PREP
Date Prep: 10/30/20

Parameter	REBLK Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	39.69	99	85-115	ug/L	
Lead	<1.000	40.00	38.50	96	85-115	ug/L	
Zinc	<20.00	200	187.3	94	85-115	ug/L	

Project Name Kop-Flex

PSS Project No.: 20102612

Analytical Method: EPA 624 .1

Seq Number: 179378

Matrix: Water

Prep Method: E624PREP

Date Prep: 11/04/20

MB Sample Id: 83770-1-BLK

LCS Sample Id: 83770-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	45.41	91	54-148	ug/L	
Chloromethane	<1.000	50.00	50.06	100	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	67.88	136	5-195	ug/L	
Bromomethane	<1.000	50.00	49.32	99	15-185	ug/L	
Chloroethane	<1.000	50.00	48.54	97	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	49.63	99	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.80	98	50-150	ug/L	
Methylene Chloride	<1.000	50.00	48.57	97	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	48.97	98	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	51.99	104	70-130	ug/L	
Chloroform	<1.000	50.00	48.85	98	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	49.86	100	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	45.77	92	70-130	ug/L	
Benzene	<1.000	50.00	49.00	98	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	49.70	99	70-130	ug/L	
Trichloroethene	<1.000	50.00	48.09	96	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	50.71	101	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	48.35	97	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	48.71	97	25-175	ug/L	
Toluene	<1.000	50.00	48.69	97	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	48.71	97	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.12	100	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	46.46	93	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	48.29	97	70-135	ug/L	
Chlorobenzene	<1.000	50.00	48.36	97	65-135	ug/L	
Ethylbenzene	<1.000	50.00	50.96	102	60-140	ug/L	
Bromoform	<1.000	50.00	48.33	97	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	50.95	102	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	48.48	97	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	47.76	96	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	48.44	97	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	102		99		87-120	%
4-Bromofluorobenzene	108		99		85-147	%
Toluene-D8	100		100		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Project Name Kop-Flex
PSS Project No.: 20102612

Analytical Method: EPA 200.8

Seq Number: 179277 Matrix: Water
CCV Sample Id: CCV 5

Analyzed Date: 10/30/20 18:50

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40	39.68	99	85-115	ug/L	
Lead	40	39.97	100	85-115	ug/L	
Zinc	200	200.3	100	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179277 Matrix: Water
CCV Sample Id: CCV 6

Analyzed Date: 10/30/20 19:59

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40	41.40	104	85-115	ug/L	
Lead	40	42.03	105	85-115	ug/L	
Zinc	200	210.4	105	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179277 Matrix: Water
CCV Sample Id: CCV 7

Analyzed Date: 10/30/20 21:05

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40	40.52	101	85-115	ug/L	
Lead	40	38.65	97	85-115	ug/L	
Zinc	200	208.8	104	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179297 Matrix: Water
CCV Sample Id: CCV 7

Analyzed Date: 10/30/20 21:05

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40	40.52	101	85-115	ug/L	
Lead	40	38.65	97	85-115	ug/L	
Zinc	200	208.8	104	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179297 Matrix: Water
CCV Sample Id: CCV 8

Analyzed Date: 10/30/20 22:11

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40	39.73	99	85-115	ug/L	
Lead	40	39.72	99	85-115	ug/L	
Zinc	200	207.8	104	85-115	ug/L	

Project Name Kop-Flex
PSS Project No.: 20102612

Analytical Method: EPA 200.8

Seq Number: 179384
CCV Sample Id: CCV 1

Matrix: Water

Analyzed Date: 11/04/20 17:46

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40	39.24	98	85-115	ug/L	
Lead	40	38.04	95	85-115	ug/L	
Nickel	40	36.92	92	85-115	ug/L	
Zinc	200	186.6	93	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179277
Parent Sample Id: ICV 1

Matrix: Water

ICV Sample Id: ICV 1

Analyzed Date: 10/30/20 13:17

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40	38.54	96	90-110	ug/L	
Lead	40	39.13	98	90-110	ug/L	
Zinc	200	201	101	90-110	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179297
Parent Sample Id: ICV 1

Matrix: Water

ICV Sample Id: ICV 1

Analyzed Date: 10/30/20 13:17

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40	38.54	96	90-110	ug/L	
Lead	40	39.13	98	90-110	ug/L	
Zinc	200	201	101	90-110	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179384
Parent Sample Id: ICV 1

Matrix: Water

ICV Sample Id: ICV 1

Analyzed Date: 11/04/20 16:20

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40	39.62	99	90-110	ug/L	
Lead	40	38.39	96	90-110	ug/L	
Nickel	40	37.50	94	90-110	ug/L	
Zinc	200	188.9	94	90-110	ug/L	

Project Name Kop-Flex
PSS Project No.: 20102612

Analytical Method: EPA 624 .1

Seq Number: 179209

Matrix: Water

Parent Sample Id: ICV-01

ICV Sample Id: ICV-01

Analyzed Date: 10/28/20 15:12

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	.05	0.05012	100	54-148	mg/L	
Chloromethane	.05	0.04935	99	57-135	mg/L	
Vinyl Chloride	.05	0.05045	101	64-129	mg/L	
Bromomethane	.05	0.05319	106	67-132	mg/L	
Chloroethane	.05	0.04715	94	62-133	mg/L	
Trichlorofluoromethane	.05	0.05001	100	71-137	mg/L	
1,1-Dichloroethene	.05	0.04959	99	67-126	mg/L	
Methylene Chloride	.05	0.04907	98	73-120	mg/L	
trans-1,2-dichloroethene	.05	0.05015	100	75-127	mg/L	
1,1-Dichloroethane	.05	0.05088	102	76-127	mg/L	
Chloroform	.05	0.05078	102	79-125	mg/L	
1,1,1-Trichloroethane	.05	0.05362	107	73-130	mg/L	
Carbon Tetrachloride	.05	0.04991	100	73-130	mg/L	
Benzene	.05	0.05128	103	73-132	mg/L	
1,2-Dichloroethane	.05	0.05076	102	77-129	mg/L	
Trichloroethene	.05	0.05175	104	79-126	mg/L	
1,2-Dichloropropane	.05	0.05144	103	74-129	mg/L	
Bromodichloromethane	.05	0.04964	99	81-125	mg/L	
cis-1,3-Dichloropropene	.05	0.05078	102	76-116	mg/L	
Toluene	.05	0.05104	102	77-127	mg/L	
trans-1,3-dichloropropene	.05	0.05084	102	78-114	mg/L	
1,1,2-Trichloroethane	.05	0.05154	103	78-127	mg/L	
Tetrachloroethylene	.05	0.05126	103	78-128	mg/L	
Dibromochloromethane	.05	0.04995	100	70-132	mg/L	
Chlorobenzene	.05	0.05090	102	72-128	mg/L	
Ethylbenzene	.05	0.05256	105	69-131	mg/L	
Bromoform	.05	0.05030	101	70-130	mg/L	
1,1,2,2-Tetrachloroethane	.05	0.05235	105	62-134	mg/L	
1,3-Dichlorobenzene	.05	0.05302	106	70-129	mg/L	
1,4-Dichlorobenzene	.05	0.05242	105	69-127	mg/L	
1,2-Dichlorobenzene	.05	0.05347	107	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	101	87-120	%	
4-Bromofluorobenzene	99	85-147	%	
Toluene-D8	100	88-110	%	

X = Recovery outside of QC Criteria

**PHASE
SEPARATION
SCIENCE**

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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PSS CLIENT: WSP		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 20102612			PAGE 1 OF 1							
BILL TO (if different):		PHONE #: 703-709-6600		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe										
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes			Preservative Codes					
PROJECT NAME: Kop-Flex		PROJECT #: 31401545.010-04				Analysis/Method Required			1 - HCL 2 - H ₂ SO ₄ 3 - HNO ₃ 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit					
SITE LOCATION: Hanover, Md		P.O. #:				VOCs (624) BOD TSS Dissolved metals (200.8) Total metals (200.8) + barabazic								
SAMPLER(S): Lauren Johnson		DW CERT #:												
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB								
1	Effluent vsp-4	10/26/20	10:20	WW	7	G	X	X	X	X	X			
Relinquished By: (1) <i>Lauren Johnson</i>		Date	Time	Received By: <i>[Signature]</i>		Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			Ice Present: PRES TB: 1.6°C					
Relinquished By: (2)		Date	Time	Received By:		STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER			Custody Seal: Cobex-Intact					
Relinquished By: (3)		Date	Time	Received By:		COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW			# Coolers: 1 Temp: 3.1°-3.5°C					
Relinquished By: (4)		Date	Time	Received By:		EDD FORMAT TYPE			Shipping Carrier: Client					
						Special Instructions: metals: Cu, Pb, Ni, Zn dissolved metals field filtered standard 10 day TAT								

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop-Flex
 PSS Project No.: 20102612

Client Name WSP USA - Herndon
Disposal Date 11/30/2020

Received By Thomas Wingate
Date Received 10/26/2020 01:10:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 3.5
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Lauren Johnson
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
 Total No. of Containers Received 7


Preservation

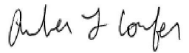
Total Metals (pH<2) Yes
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) No
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By:  Date: 10/26/2020
 Thomas Wingate

PM Review and Approval:  Date: 10/27/2020
 Amber Confer
 Page 15 of 15 Version 1.000

Project Name: Kop-Flex
PSS Project No.: 20102613

November 9, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20102613**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010-04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20102613**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 30, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop-Flex
PSS Project No.: 20102613

Project ID: 31401545.010-04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 10/26/2020 at 01:10 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20102613-001	Effluent VSP-4	WASTE WATER	10/26/20 10:20
20102613-002	TB-092820	WATER	10/26/20 00:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20102613

Sample ID: Effluent VSP-4 **Date/Time Sampled: 10/26/2020 10:20** **PSS Sample ID: 20102613-001**
Matrix: WASTE WATER **Date/Time Received: 10/26/2020 13:10**
 1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	2.0	ug/L	1.0		1	11/04/20	11/04/20 14:32	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	96	%	80-120		1	11/04/20	11/04/20 14:32	1045

Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 20102613

Sample ID: TB-092820 **Date/Time Sampled: 10/26/2020 00:00** **PSS Sample ID: 20102613-002**
Matrix: WATER **Date/Time Received: 10/26/2020 13:10**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Chloromethane	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Vinyl Chloride	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Bromomethane	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Chloroethane	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Methylene Chloride	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Chloroform	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Benzene	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Trichloroethene	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Bromodichloromethane	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Toluene	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Tetrachloroethylene	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Dibromochloromethane	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Chlorobenzene	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Ethylbenzene	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
Bromoform	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	11/04/20	11/04/20 15:40	1011

Surrogate(s)	Recovery	Limits			
Dibromofluoromethane	102 %	87-120	1	11/04/20	11/04/20 15:40 1011
4-Bromofluorobenzene	108 %	85-147	1	11/04/20	11/04/20 15:40 1011
Toluene-D8	101 %	88-110	1	11/04/20	11/04/20 15:40 1011

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20102613

Sample ID: TB-092820 **Date/Time Sampled: 10/26/2020 00:00** **PSS Sample ID: 20102613-002**
Matrix: WATER **Date/Time Received: 10/26/2020 13:10**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	11/04/20	11/04/20 14:54	1045
Surrogate(s)	Recovery		Limits					
<i>Toluene-D8</i>	96	%	80-120		1	11/04/20	11/04/20 14:54	1045

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20102613

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop-Flex
 PSS Project No.: 20102613

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-092820	Initial	20102613-002	W	83770	179378	11/04/2020 12:51	11/04/2020 15:40
	83770-1-BKS	BKS	83770-1-BKS	W	83770	179378	11/04/2020 12:51	11/04/2020 13:13
	83770-1-BLK	BLK	83770-1-BLK	W	83770	179378	11/04/2020 12:51	11/04/2020 14:55
	13680-EFF-11/20 S	MS	20110413-001 S	W	83770	179378	11/04/2020 12:51	11/04/2020 17:10
	13680-EFF-11/20 SD	MSD	20110413-001 S	W	83770	179378	11/04/2020 12:51	11/04/2020 17:33
SW-846 8260 B-Modified	Effluent VSP-4	Initial	20102613-001	W	83760	179362	11/04/2020 07:53	11/04/2020 14:32
	TB-092820	Initial	20102613-002	W	83760	179362	11/04/2020 07:53	11/04/2020 14:54
	83760-1-BKS	BKS	83760-1-BKS	W	83760	179362	11/04/2020 07:53	11/04/2020 10:51
	83760-1-BLK	BLK	83760-1-BLK	W	83760	179362	11/04/2020 07:53	11/04/2020 12:20
	83760-1-BSD	BSD	83760-1-BSD	W	83760	179362	11/04/2020 07:53	11/04/2020 11:13

Project Name Kop-Flex

PSS Project No.: 20102613

Analytical Method: EPA 624 .1

Seq Number: 179378

Matrix: Water

Prep Method: E624PREP

Date Prep: 11/04/20

MB Sample Id: 83770-1-BLK

LCS Sample Id: 83770-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	45.41	91	54-148	ug/L	
Chloromethane	<1.000	50.00	50.06	100	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	67.88	136	5-195	ug/L	
Bromomethane	<1.000	50.00	49.32	99	15-185	ug/L	
Chloroethane	<1.000	50.00	48.54	97	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	49.63	99	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.80	98	50-150	ug/L	
Methylene Chloride	<1.000	50.00	48.57	97	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	48.97	98	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	51.99	104	70-130	ug/L	
Chloroform	<1.000	50.00	48.85	98	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	49.86	100	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	45.77	92	70-130	ug/L	
Benzene	<1.000	50.00	49.00	98	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	49.70	99	70-130	ug/L	
Trichloroethene	<1.000	50.00	48.09	96	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	50.71	101	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	48.35	97	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	48.71	97	25-175	ug/L	
Toluene	<1.000	50.00	48.69	97	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	48.71	97	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	50.12	100	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	46.46	93	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	48.29	97	70-135	ug/L	
Chlorobenzene	<1.000	50.00	48.36	97	65-135	ug/L	
Ethylbenzene	<1.000	50.00	50.96	102	60-140	ug/L	
Bromoform	<1.000	50.00	48.33	97	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	50.95	102	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	48.48	97	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	47.76	96	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	48.44	97	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	102		99		87-120	%
4-Bromofluorobenzene	108		99		85-147	%
Toluene-D8	100		100		88-110	%

Analytical Method: SW-846 8260 B-Modified

Seq Number: 179362

Matrix: Water

Prep Method: SW5030B

Date Prep: 11/04/20

MB Sample Id: 83760-1-BLK

LCS Sample Id: 83760-1-BKS

LCSD Sample Id: 83760-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	32.13	107	33.09	110	50-150	3	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	97		97		98		80-120	%

Project Name Kop-Flex
PSS Project No.: 20102613

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

**PHASE
SEPARATION
SCIENCE**

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

www.phaseonline.com ~ info@phaseonline.com

6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

PSS CLIENT: WSP		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 20102613				PAGE 1 OF 1						
BILL TO (if different):		PHONE #: 703-709-6500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe										
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes		1 1						Preservative Codes 1 - HCL 2 - H ₂ SO ₄ 3 - HNO ₃ 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit
PROJECT NAME: Kop-Flex		PROJECT #: 31401545.010-04				Analysis/Method Required								
SITE LOCATION: Hanover, Md		P.O. #:				③								
SAMPLER(S): Lauren Johnson		DW CERT #:				1,4-dioxane 8260 VOCs (624)								
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Analysis/Method Required				Preservative Codes			
1	Effluent vsp-4	10/26/20	10:20	WW	3	G	X							
2	TB-102620	10/26/20	-	W	4	-	X	X						
Relinquished By: (1)		Date	Time	Received By:		Requested TAT (One TAT per COC)				Ice Present:				
Lauren Johnson		10/26/20	13:10	[Signature]		<input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other				PRES TB: 1.6°C				
Relinquished By: (2)		Date	Time	Received By:		STATE RESULTS REPORTED TO:				Custody Seal:				
						<input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER				Cooler-Intact				
Relinquished By: (3)		Date	Time	Received By:		COMPLIANCE?		Special Instructions:						
						<input type="checkbox"/> DW <input type="checkbox"/> WW		standard 10 day TAT						
Relinquished By: (4)		Date	Time	Received By:		EDD FORMAT TYPE		Shipping Carrier:						
								Clint						

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop-Flex
 PSS Project No.: 20102613

Client Name WSP USA - Herndon
Disposal Date 11/30/2020

Received By Thomas Wingate
Date Received 10/26/2020 01:10:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 3.5
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Lauren Johnson
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 2
 Total No. of Containers Received 7

Preservation

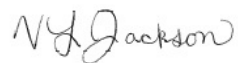
Total Metals (pH<2) N/A
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) No
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By:  Date: 10/26/2020
 Thomas Wingate

PM Review and Approval:  Date: 10/26/2020
 Lynn Jackson
 Page 11 of 11 Version 1.000

Project Name: Kop-Flex
PSS Project No.: 20111203

November 30, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20111203**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010-04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20111203**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on December 17, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Project Name: Kop-Flex
PSS Project No.: 20111203

Project ID: 31401545.010-04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 11/12/2020 at 09:55 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20111203-001	Effluent VSP-4	WASTE WATER	11/12/20 09:05

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 20111203

Sample ID: Effluent VSP-4 **Date/Time Sampled: 11/12/2020 09:05** **PSS Sample ID: 20111203-001**
Matrix: WASTE WATER **Date/Time Received: 11/12/2020 09:55**

Dissolved Metals Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	1.3	ug/L	1.0		1	11/16/20	11/17/20 14:39	1064
Lead	ND	ug/L	1.0		1	11/16/20	11/16/20 20:38	1064
Nickel	15.7	ug/L	1.00		1	11/16/20	11/17/20 14:39	1064
Zinc	21.4	ug/L	20.0		1	11/16/20	11/17/20 14:39	1064

Total Metals Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	2.2	ug/L	1.0		1	11/13/20	11/17/20 13:43	1064
Lead	ND	ug/L	1.0		1	11/13/20	11/16/20 19:51	1064
Nickel	16.6	ug/L	1.00		1	11/13/20	11/17/20 13:43	1064
Zinc	31.3	ug/L	20.0		1	11/13/20	11/17/20 13:43	1064

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 179623 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Chloromethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Vinyl Chloride	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Bromomethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Chloroethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Methylene Chloride	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Chloroform	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Benzene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Trichloroethene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Bromodichloromethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20111203

Sample ID: Effluent VSP-4 **Date/Time Sampled: 11/12/2020 09:05** **PSS Sample ID: 20111203-001**
Matrix: WASTE WATER **Date/Time Received: 11/12/2020 09:55**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 179623 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Toluene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Tetrachloroethylene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Dibromochloromethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Chlorobenzene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Ethylbenzene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Bromoform	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:57	1011
Surrogate(s)	Recovery		Limits					
<i>Dibromofluoromethane</i>	102 %		87-120		1	11/13/20	11/13/20 14:57	1011
<i>4-Bromofluorobenzene</i>	106 %		85-147		1	11/13/20	11/13/20 14:57	1011
<i>Toluene-D8</i>	100 %		88-110		1	11/13/20	11/13/20 14:57	1011

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	14	mg/L	33		50	11/16/20	11/17/20 03:27	1064

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	11/12/20	11/12/20 13:34	1061

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20111203

Sample ID: Effluent VSP-4 **Date/Time Sampled: 11/12/2020 09:05** **PSS Sample ID: 20111203-001**
Matrix: WASTE WATER **Date/Time Received: 11/12/2020 09:55**

Biochemical Oxygen Demand Analytical Method: SM 5210B -2011

Start time: 12-Nov-20 15:31

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		11/12/20	11/17/20 15:45	4005

Project Name: Kop-Flex

PSS Project No.: 20111203

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

20111203: Analyses associated with analyst code 4005 were performed by Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

Analytical:

Volatile Organics Compounds (TVO)

Batch: 179623

Method exceedance: A target analyte was detected in the method blank; chloromethane was 0.13 ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

Lab Chronology

Project Name: Kop-Flex
 PSS Project No.: 20111203

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	20111203-001	W	83871	179667	11/13/2020 12:12	11/16/2020 19:51
	83871-1-BKS	BKS	83871-1-BKS	W	83871	179667	11/13/2020 12:12	11/16/2020 19:14
	83871-1-BLK	BLK	83871-1-BLK	W	83871	179667	11/13/2020 12:12	11/16/2020 19:09
	Mississippi Ave S	MS	20111010-001 S	W	83871	179667	11/13/2020 12:12	11/16/2020 19:23
	Mississippi Ave SD	MSD	20111010-001 S	W	83871	179667	11/13/2020 12:12	11/16/2020 19:28
	83871-1-BKS	Reanalysis	83871-1-BKS	W	83871	179698	11/13/2020 12:12	11/17/2020 13:22
	83871-1-BLK	Reanalysis	83871-1-BLK	W	83871	179698	11/13/2020 12:12	11/17/2020 13:17
	Effluent VSP-4	Reanalysis	20111203-001	W	83871	179698	11/13/2020 12:12	11/17/2020 13:43
EPA 200.8	Effluent VSP-4	Initial	20111203-001	W	83888	179669	11/16/2020 15:32	11/16/2020 20:38
	83888-1-BKS	BKS	83888-1-BKS	W	83888	179669	11/16/2020 15:32	11/16/2020 20:33
	83888-1-BLK	BLK	83888-1-BLK	W	83888	179669	11/16/2020 15:32	11/16/2020 20:29
	Effluent VSP-4 S	MS	20111203-001 S	W	83888	179669	11/16/2020 15:32	11/16/2020 20:43
	DPS Wet Well S	MS	20111606-004 S	W	83888	179669	11/16/2020 15:32	11/16/2020 22:49
	Effluent VSP-4 SD	MSD	20111203-001 S	W	83888	179669	11/16/2020 15:32	11/16/2020 20:47
	83888-1-BKS	Reanalysis	83888-1-BKS	W	83888	179717	11/16/2020 15:32	11/17/2020 14:34
	83888-1-BLK	Reanalysis	83888-1-BLK	W	83888	179717	11/16/2020 15:32	11/17/2020 14:30
	Effluent VSP-4	Reanalysis	20111203-001	W	83888	179717	11/16/2020 15:32	11/17/2020 14:39
EPA 624 .1	Effluent VSP-4	Initial	20111203-001	W	83878	179623	11/13/2020 08:00	11/13/2020 14:57
	83878-1-BKS	BKS	83878-1-BKS	W	83878	179623	11/13/2020 08:00	11/13/2020 09:08
	83878-1-BLK	BLK	83878-1-BLK	W	83878	179623	11/13/2020 08:00	11/13/2020 13:42
	13668-EFF-11/20 S	MS	20111115-001 S	W	83878	179623	11/13/2020 08:00	11/13/2020 09:59
	13668-EFF-11/20 SD	MSD	20111115-001 S	W	83878	179623	11/13/2020 08:00	11/13/2020 10:22
SM 2340B	Effluent VSP-4	Initial	20111203-001	W	83892	179697	11/16/2020 17:33	11/17/2020 03:27
SM 2540D -2011	Effluent VSP-4	Initial	20111203-001	W	179572	179572	11/12/2020 13:34	11/12/2020 13:34
	179572-1-BLK	BLK	179572-1-BLK	W	179572	179572	11/12/2020 13:34	11/12/2020 13:34
	13668-EFF-11/20 D	MD	20111115-001 D	W	179572	179572	11/12/2020 13:34	11/12/2020 13:34
	OF-032 D	MD	20111208-003 D	W	179572	179572	11/12/2020 13:34	11/12/2020 13:34
SM 5210B -2011	Effluent VSP-4	Initial	20111203-001	W	179939	179939	11/12/2020 00:00	11/17/2020 15:45

Project Name Kop-Flex
PSS Project No.: 20111203

Analytical Method: SM 2540D -2011

Seq Number: 179572 Matrix: Water
MB Sample Id: 179572-1-BLK

Parameter	MB Result	LOD	RL	Units	Flag
Suspended Solids	ND	0.5000	1.000	mg/L	

Analytical Method: EPA 200.8

Seq Number: 179667 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 83871-1-BLK LCS Sample Id: 83871-1-BKS Date Prep: 11/13/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<1.000	40.00	41.76	104	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179698 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 83871-1-BLK LCS Sample Id: 83871-1-BKS Date Prep: 11/13/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	38.97	97	85-115	ug/L	
Nickel	<1.000	40.00	38.40	96	85-115	ug/L	
Zinc	<20.00	200	191.1	96	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179669 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 83888-1-BLK LCS Sample Id: 83888-1-BKS Date Prep: 11/16/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Lead	<1.000	40.00	39.46	99	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179717 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 83888-1-BLK LCS Sample Id: 83888-1-BKS Date Prep: 11/16/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	38.75	97	85-115	ug/L	
Nickel	<1.000	40.00	38.72	97	85-115	ug/L	
Zinc	<20.00	200	195.4	98	85-115	ug/L	

Project Name Kop-Flex

PSS Project No.: 20111203

Analytical Method: EPA 200.8

Seq Number: 179669

Parent Sample Id: 20111203-001

Matrix: Waste Water

MS Sample Id: 20111203-001 S

Prep Method: E200.8_PREP

Date Prep: 11/16/20

MSD Sample Id: 20111203-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Copper	1.066	40.00	39.37	96	41.29	101	70-130	5	25	ug/L	
Lead	<1.000	40.00	37.54	94	38.67	97	70-130	3	25	ug/L	
Nickel	13.96	40.00	51.22	93	54.30	101	70-130	8	25	ug/L	
Zinc	<20.00	200	210	105	223.8	112	70-130	6	25	ug/L	

Analytical Method: EPA 624 .1

Seq Number: 179623

MB Sample Id: 83878-1-BLK

Matrix: Water

LCS Sample Id: 83878-1-BKS

Prep Method: E624PREP

Date Prep: 11/13/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	40.25	81	54-148	ug/L	
Chloromethane	<1.000	50.00	41.27	83	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	46.26	93	5-195	ug/L	
Bromomethane	<1.000	50.00	33.94	68	15-185	ug/L	
Chloroethane	<1.000	50.00	44.84	90	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	44.23	88	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	46.33	93	50-150	ug/L	
Methylene Chloride	<1.000	50.00	48.34	97	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	48.35	97	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	49.83	100	70-130	ug/L	
Chloroform	<1.000	50.00	50.23	100	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	51.72	103	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	48.42	97	70-130	ug/L	
Benzene	<1.000	50.00	51.12	102	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	50.01	100	70-130	ug/L	
Trichloroethene	<1.000	50.00	50.84	102	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.96	104	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	52.40	105	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	53.21	106	25-175	ug/L	
Toluene	<1.000	50.00	50.31	101	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	53.54	107	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	52.27	105	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	49.60	99	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	53.84	108	70-135	ug/L	
Chlorobenzene	<1.000	50.00	51.58	103	65-135	ug/L	
Ethylbenzene	<1.000	50.00	52.66	105	60-140	ug/L	
Bromoform	<1.000	50.00	56.64	113	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	54.21	108	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	53.54	107	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	53.32	107	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	54.50	109	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	104		102		87-120	%
4-Bromofluorobenzene	105		99		85-147	%
Toluene-D8	99		99		88-110	%

Project Name Kop-Flex

PSS Project No.: 20111203

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Project Name Kop-Flex
PSS Project No.: 20111203

Analytical Method: EPA 200.8

Seq Number: 179667
CCV Sample Id: CCV 1

Matrix: Water

Analyzed Date: 11/16/20 20:05

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	40	39.36	98	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179669
CCV Sample Id: CCV 1

Matrix: Water

Analyzed Date: 11/16/20 20:05

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	40	39.36	98	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179669
CCV Sample Id: CCV 2

Matrix: Water

Analyzed Date: 11/16/20 21:20

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	40	38.90	97	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179669
CCV Sample Id: CCV 3

Matrix: Water

Analyzed Date: 11/16/20 22:21

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	40	38.85	97	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179669
CCV Sample Id: CCV 4

Matrix: Water

Analyzed Date: 11/16/20 23:22

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Lead	40	38.13	95	85-115	ug/L	

Project Name Kop-Flex
PSS Project No.: 20111203

Analytical Method: EPA 200.8

Seq Number: 179698
CCV Sample Id: CCV 1

Matrix: Water

Analyzed Date: 11/17/20 14:09

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40	38.22	96	85-115	ug/L	
Nickel	40	38.19	95	85-115	ug/L	
Zinc	200	189.2	95	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179717
CCV Sample Id: CCV 1

Matrix: Water

Analyzed Date: 11/17/20 14:09

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40	38.22	96	85-115	ug/L	
Nickel	40	38.19	95	85-115	ug/L	
Zinc	200	189.2	95	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179717
CCV Sample Id: CCV 2

Matrix: Water

Analyzed Date: 11/17/20 16:31

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40	38.94	97	85-115	ug/L	
Nickel	40	38.64	97	85-115	ug/L	
Zinc	200	190.9	95	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179717
CCV Sample Id: CCV 3

Matrix: Water

Analyzed Date: 11/17/20 17:28

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40	37.70	94	85-115	ug/L	
Nickel	40	37.45	94	85-115	ug/L	
Zinc	200	186.9	93	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179667
Parent Sample Id: ICV 1

Matrix: Water
ICV Sample Id: ICV 1

Analyzed Date: 11/16/20 18:36

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	40	39.53	99	90-110	ug/L	

Project Name Kop-Flex
PSS Project No.: 20111203

Analytical Method: EPA 200.8

Seq Number: 179669
Parent Sample Id: ICV 1

Matrix: Water
ICV Sample Id: ICV 1

Analyzed Date: 11/16/20 18:36

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Lead	40	39.53	99	90-110	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179698
Parent Sample Id: ICV 1

Matrix: Water
ICV Sample Id: ICV 1

Analyzed Date: 11/17/20 12:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40	39.71	99	90-110	ug/L	
Nickel	40	39.72	99	90-110	ug/L	
Zinc	200	200.2	100	90-110	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179717
Parent Sample Id: ICV 1

Matrix: Water
ICV Sample Id: ICV 1

Analyzed Date: 11/17/20 12:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40	39.71	99	90-110	ug/L	
Nickel	40	39.72	99	90-110	ug/L	
Zinc	200	200.2	100	90-110	ug/L	

Analytical Method: EPA 200.8

Seq Number: 179667
Parent Sample Id: LLICV 1

Matrix: Water
LLICV Sample Id: LLICV 1

Analyzed Date: 11/16/20 18:41

Parameter	Spike Amount	LLICV Result	LLICV %Rec	Limits	Units	Flag
Lead	1	0.9770	98	70-130	ug/L	

Project Name Kop-Flex

PSS Project No.: 20111203

Analytical Method: EPA 624 .1

Seq Number: 179415

Matrix: Water

Parent Sample Id: ICV-01

ICV Sample Id: ICV-01

Analyzed Date: 11/05/20 11:52

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	.05	0.05093	102	54-148	mg/L	
Chloromethane	.05	0.05298	106	57-135	mg/L	
Vinyl Chloride	.05	0.05282	106	64-129	mg/L	
Bromomethane	.05	0.05221	104	67-132	mg/L	
Chloroethane	.05	0.05048	101	62-133	mg/L	
Trichlorofluoromethane	.05	0.05215	104	71-137	mg/L	
1,1-Dichloroethene	.05	0.05235	105	67-126	mg/L	
Methylene Chloride	.05	0.05186	104	73-120	mg/L	
trans-1,2-dichloroethene	.05	0.05241	105	75-127	mg/L	
1,1-Dichloroethane	.05	0.05393	108	76-127	mg/L	
Chloroform	.05	0.05300	106	79-125	mg/L	
1,1,1-Trichloroethane	.05	0.05574	111	73-130	mg/L	
Carbon Tetrachloride	.05	0.05343	107	73-130	mg/L	
Benzene	.05	0.05413	108	73-132	mg/L	
1,2-Dichloroethane	.05	0.05331	107	77-129	mg/L	
Trichloroethene	.05	0.05426	109	79-126	mg/L	
1,2-Dichloropropane	.05	0.05468	109	74-129	mg/L	
Bromodichloromethane	.05	0.05289	106	81-125	mg/L	
cis-1,3-Dichloropropene	.05	0.05442	109	76-116	mg/L	
Toluene	.05	0.05369	107	77-127	mg/L	
trans-1,3-dichloropropene	.05	0.05489	110	78-114	mg/L	
1,1,2-Trichloroethane	.05	0.05365	107	78-127	mg/L	
Tetrachloroethylene	.05	0.05480	110	78-128	mg/L	
Dibromochloromethane	.05	0.05347	107	70-132	mg/L	
Chlorobenzene	.05	0.05394	108	72-128	mg/L	
Ethylbenzene	.05	0.05657	113	69-131	mg/L	
Bromoform	.05	0.05393	108	70-130	mg/L	
1,1,2,2-Tetrachloroethane	.05	0.05363	107	62-134	mg/L	
1,3-Dichlorobenzene	.05	0.05500	110	70-129	mg/L	
1,4-Dichlorobenzene	.05	0.05404	108	69-127	mg/L	
1,2-Dichlorobenzene	.05	0.05518	110	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	100	88-110	%	

X = Recovery outside of QC Criteria

**PHASE
SEPARATION
SCIENCE**

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

PSS CLIENT: WSP USA		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 2011203		PAGE 1 OF 1														
BILL TO (if different):		PHONE #: 703-709-6500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe																
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes	HCl	HNO ₃	HNO ₂	N/A	N/A								Preservative Codes	
PROJECT NAME: Kop-Flex		PROJECT #: 31401545.010-04				Analysis/Method Required	③	VOCs (629)	total metals	heavy metals	dissolved metals	TSS	BOD							1 - HCL
SITE LOCATION: Hanover, Md		P.O. #:																		2 - H ₂ SO ₄
SAMPLER(S): Lauren Johnson		DW CERT #:																		3 - HNO ₃
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	HCl	HNO ₃	HNO ₂	N/A	N/A								Preservative Codes	
	Effluent VSP-4	11/12/20	9:05	WW	1	G	X	X	X	X	X								4 - NaOH	
																			5 - E624KIT	
																			6 - ICE	
																			7 - Sodium Thiosulfate	
																			8 - Ascorbic Acid	
																			9 - TerraCore Kit	
Relinquished By: (1) Lauren Johnson		Date	Time	Received By: Lauren Johnson		Requested TAT (One TAT per COC)		Ice Present:		Custody Seal:		# Coolers:		Temp:		Shipping Carrier:				
Relinquished By: (2)		Date	Time	Received By:		<input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other		PRES TB=3.4°C		Intact-Cooler		1		3.1-4.5°C		Chent				
Relinquished By: (3)		Date	Time	Received By:		STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER														
Relinquished By: (4)		Date	Time	Received By:		COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW		Special Instructions: dissolved metals field filtered metals = Cu, Pb, Ni, Zn standard 10-day TAT												
		Date	Time	Received By:		EDD FORMAT TYPE														

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop-Flex
 PSS Project No.: 20111203

Client Name WSP USA - Herndon
Disposal Date 12/17/2020

Received By Amber Confer
Date Received 11/12/2020 09:55:00 AM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 4.5
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Lauren Johnson
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
 Total No. of Containers Received 7

Preservation

Total Metals (pH<2) Yes
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) Yes
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) No
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

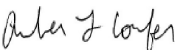
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 11/12/2020

PM Review and Approval:



Amber Confer

Date: 11/12/2020

Project Name: Kop Flex
PSS Project No.: 20111204

November 30, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20111204**
Project Name: Kop Flex
Project Location: Hanover, MD
Project ID.: 31401545.010-04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20111204**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on December 17, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop Flex
PSS Project No.: 20111204

Project ID: 31401545.010-04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 11/12/2020 at 09:55 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20111204-001	Effluent VSP-4	WASTE WATER	11/12/20 09:05
20111204-002	Influent VSP-1	GROUND WATER	11/12/20 08:55
20111204-003	TB-111220	WATER	11/12/20 08:52
20111204-003	TB-111220	WATER	11/12/20 08:52

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20111204

Sample ID: Effluent VSP-4 **Date/Time Sampled: 11/12/2020 09:05** **PSS Sample ID: 20111204-001**
Matrix: WASTE WATER **Date/Time Received: 11/12/2020 09:55**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	43	ug/L	1.0		1	11/26/20	11/26/20 16:49	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	104	%	80-120		1	11/26/20	11/26/20 16:49	1045

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20111204

Sample ID: Influent VSP-1 **Date/Time Sampled: 11/12/2020 08:55** **PSS Sample ID: 20111204-002**
Matrix: GROUND WATER **Date/Time Received: 11/12/2020 09:55**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 179706 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	11/17/20	11/17/20 14:00	1011
Benzene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Bromochloromethane	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Bromodichloromethane	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Bromoform	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Bromomethane	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	11/17/20	11/17/20 14:00	1011
Carbon Disulfide	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Carbon tetrachloride	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Chlorobenzene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Chloroethane	4.2	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Chloroform	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Chloromethane	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Cyclohexane	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Dibromochloromethane	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
1,1-Dichloroethane	47	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
1,2-Dichloroethane	1.4	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
cis-1,2-Dichloroethene	1.2	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
1,1-Dichloroethene	220	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Ethylbenzene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	11/17/20	11/17/20 14:00	1011
Isopropylbenzene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Methyl Acetate	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Methylcyclohexane	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Methylene chloride	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20111204

Sample ID: Influent VSP-1 **Date/Time Sampled: 11/12/2020 08:55** **PSS Sample ID: 20111204-002**
Matrix: GROUND WATER **Date/Time Received: 11/12/2020 09:55**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 179706 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	11/17/20	11/17/20 14:00	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Naphthalene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Styrene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Tetrachloroethene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Toluene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
1,1,1-Trichloroethane	19	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Trichloroethene	1.1	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Vinyl chloride	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
m&p-Xylene	ND	ug/L	2.0		1	11/17/20	11/17/20 14:00	1011
o-Xylene	ND	ug/L	1.0		1	11/17/20	11/17/20 14:00	1011
Surrogate(s)	Recovery		Limits					
4-Bromofluorobenzene	104 %		88-112		1	11/17/20	11/17/20 14:00	1011
Dibromofluoromethane	103 %		93-111		1	11/17/20	11/17/20 14:00	1011
Toluene-D8	100 %		94-107		1	11/17/20	11/17/20 14:00	1011

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	110	ug/L	10		10	11/26/20	11/26/20 17:56	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	103 %		80-120		10	11/26/20	11/26/20 17:56	1045

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20111204

Sample ID: TB-111220 **Date/Time Sampled: 11/12/2020 08:52** **PSS Sample ID: 20111204-003**
Matrix: WATER **Date/Time Received: 11/12/2020 09:55**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 179623 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Chloromethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Vinyl Chloride	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Bromomethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Chloroethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Methylene Chloride	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
trans-1,2-dichloroethene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Chloroform	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Carbon Tetrachloride	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Benzene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Trichloroethene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Bromodichloromethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Toluene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
trans-1,3-dichloropropene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Tetrachloroethylene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Dibromochloromethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Chlorobenzene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Ethylbenzene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
Bromoform	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	11/13/20	11/13/20 14:12	1011

Surrogate(s)	Recovery	Limits			
Dibromofluoromethane	103 %	87-120	1	11/13/20	11/13/20 14:12 1011
4-Bromofluorobenzene	104 %	85-147	1	11/13/20	11/13/20 14:12 1011
Toluene-D8	99 %	88-110	1	11/13/20	11/13/20 14:12 1011

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20111204

Sample ID: TB-111220 **Date/Time Sampled: 11/12/2020 08:52** **PSS Sample ID: 20111204-003**
Matrix: WATER **Date/Time Received: 11/12/2020 09:55**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	11/26/20	11/26/20 18:18	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	102	%	80-120		1	11/26/20	11/26/20 18:18	1045

Case Narrative

Project Name: Kop Flex

PSS Project No.: 20111204

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Analytical:

Volatile Organics Compounds (TVO)

Batch: 179623

Method exceedance: A target analyte was detected in the method blank; chloromethane was 0.13 ppb in method blank.

Analytical:

TCL Volatile Organic Compounds

Batch: 179706

Method exceedance: Laboratory control sample exceedances identified; see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop Flex
 PSS Project No.: 20111204

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-111220	Initial	20111204-003	W	83878	179623	11/13/2020 08:00	11/13/2020 14:12
	83878-1-BKS	BKS	83878-1-BKS	W	83878	179623	11/13/2020 08:00	11/13/2020 09:08
	83878-1-BLK	BLK	83878-1-BLK	W	83878	179623	11/13/2020 08:00	11/13/2020 13:42
	13668-EFF-11/20 S	MS	20111115-001 S	W	83878	179623	11/13/2020 08:00	11/13/2020 09:59
	13668-EFF-11/20 SD	MSD	20111115-001 S	W	83878	179623	11/13/2020 08:00	11/13/2020 10:22
SW-846 8260 B	Influent VSP-1	Initial	20111204-002	W	83917	179706	11/17/2020 09:12	11/17/2020 14:00
	83917-1-BKS	BKS	83917-1-BKS	W	83917	179706	11/17/2020 09:12	11/17/2020 10:06
	83917-1-BLK	BLK	83917-1-BLK	W	83917	179706	11/17/2020 09:12	11/17/2020 11:37
	MW-2 S	MS	20111111-005 S	W	83917	179706	11/17/2020 09:12	11/17/2020 14:23
	MW-2 SD	MSD	20111111-005 S	W	83917	179706	11/17/2020 09:12	11/17/2020 14:46
SW-846 8260 B-Modified	Effluent VSP-4	Initial	20111204-001	W	84032	179951	11/30/2020 13:01	11/26/2020 16:49
	Influent VSP-1	Initial	20111204-002	W	84032	179951	11/30/2020 13:01	11/26/2020 17:56
	TB-111220	Initial	20111204-003	W	84032	179951	11/30/2020 13:01	11/26/2020 18:18
	84032-1-BKS	BKS	84032-1-BKS	W	84032	179951	11/30/2020 13:01	11/26/2020 14:57
	84032-1-BLK	BLK	84032-1-BLK	W	84032	179951	11/30/2020 13:01	11/26/2020 16:26
	84032-1-BSD	BSD	84032-1-BSD	W	84032	179951	11/30/2020 13:01	11/26/2020 15:19

Project Name Kop Flex

PSS Project No.: 20111204

Analytical Method: EPA 624 .1

Seq Number: 179623

Matrix: Water

Prep Method: E624PREP

Date Prep: 11/13/20

MB Sample Id: 83878-1-BLK

LCS Sample Id: 83878-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	40.25	81	54-148	ug/L	
Chloromethane	<1.000	50.00	41.27	83	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	46.26	93	5-195	ug/L	
Bromomethane	<1.000	50.00	33.94	68	15-185	ug/L	
Chloroethane	<1.000	50.00	44.84	90	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	44.23	88	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	46.33	93	50-150	ug/L	
Methylene Chloride	<1.000	50.00	48.34	97	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	48.35	97	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	49.83	100	70-130	ug/L	
Chloroform	<1.000	50.00	50.23	100	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	51.72	103	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	48.42	97	70-130	ug/L	
Benzene	<1.000	50.00	51.12	102	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	50.01	100	70-130	ug/L	
Trichloroethene	<1.000	50.00	50.84	102	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.96	104	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	52.40	105	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	53.21	106	25-175	ug/L	
Toluene	<1.000	50.00	50.31	101	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	53.54	107	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	52.27	105	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	49.60	99	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	53.84	108	70-135	ug/L	
Chlorobenzene	<1.000	50.00	51.58	103	65-135	ug/L	
Ethylbenzene	<1.000	50.00	52.66	105	60-140	ug/L	
Bromoform	<1.000	50.00	56.64	113	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	54.21	108	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	53.54	107	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	53.32	107	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	54.50	109	65-135	ug/L	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	
Dibromofluoromethane	104		102		87-120	%	
4-Bromofluorobenzene	105		99		85-147	%	
Toluene-D8	99		99		88-110	%	

Project Name Kop Flex
PSS Project No.: 20111204

Analytical Method: SW-846 8260 B

Seq Number: 179706

MB Sample Id: 83917-1-BLK

Matrix: Water

LCS Sample Id: 83917-1-BKS

Prep Method: SW5030B

Date Prep: 11/17/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<5.000	50.00	43.82	88	26-128	ug/L	
Benzene	<1.000	50.00	52.04	104	82-115	ug/L	
Bromochloromethane	<1.000	50.00	51.96	104	91-115	ug/L	
Bromodichloromethane	<1.000	50.00	52.13	104	88-122	ug/L	
Bromoform	<1.000	50.00	54.23	108	79-122	ug/L	
Bromomethane	<1.000	50.00	40.16	80	50-143	ug/L	
2-Butanone (MEK)	<5.000	50.00	53.86	108	51-113	ug/L	
Carbon Disulfide	<1.000	50.00	54.57	109	71-132	ug/L	
Carbon tetrachloride	<1.000	50.00	51.71	103	85-125	ug/L	
Chlorobenzene	<1.000	50.00	52.20	104	80-116	ug/L	
Chloroethane	<1.000	50.00	49.20	98	58-115	ug/L	
Chloroform	<1.000	50.00	51.66	103	81-113	ug/L	
Chloromethane	<1.000	50.00	46.19	92	48-132	ug/L	
Cyclohexane	<1.000	50.00	53.46	107	81-125	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	54.72	109	63-122	ug/L	
Dibromochloromethane	<1.000	50.00	52.87	106	84-120	ug/L	
1,2-Dibromoethane	<1.000	50.00	54.26	109	82-122	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	54.69	109	79-122	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	54.88	110	79-122	ug/L	
Dichlorodifluoromethane	<1.000	50.00	45.59	91	73-126	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	54.39	109	79-119	ug/L	
1,1-Dichloroethane	<1.000	50.00	53.71	107	70-121	ug/L	
1,2-Dichloroethane	<1.000	50.00	51.66	103	78-118	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	55.04	110	76-116	ug/L	
1,1-Dichloroethene	<1.000	50.00	52.18	104	71-124	ug/L	
1,2-Dichloropropane	<1.000	50.00	52.88	106	79-121	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	52.60	105	83-123	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	53.25	107	82-125	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	51.62	103	74-118	ug/L	
Ethylbenzene	<1.000	50.00	54.93	110	85-120	ug/L	
2-Hexanone (MBK)	<5.000	50.00	49.98	100	51-126	ug/L	
Isopropylbenzene	<1.000	50.00	55.56	111	84-125	ug/L	
Methyl Acetate	<1.000	50.00	52.94	106	75-114	ug/L	
Methylcyclohexane	<1.000	50.00	52.94	106	88-124	ug/L	
Methylene chloride	<1.000	50.00	50.23	100	70-117	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	51.88	104	63-112	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	52.98	106	70-127	ug/L	
Naphthalene	<1.000	50.00	55.47	111	71-138	ug/L	
Styrene	<1.000	50.00	52.74	105	78-121	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	53.98	108	70-118	ug/L	
Tetrachloroethene	<1.000	50.00	52.72	105	83-113	ug/L	
Toluene	<1.000	50.00	51.87	104	85-112	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	54.84	110	80-134	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	55.61	111	83-134	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	54.01	108	84-122	ug/L	
Trichloroethene	<1.000	50.00	52.24	104	82-117	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	52.95	106	82-115	ug/L	
Trichlorofluoromethane	<1.000	50.00	52.40	105	71-123	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	52.97	106	72-126	ug/L	
Vinyl chloride	<1.000	50.00	60.12	120	75-113	ug/L	H
m&p-Xylene	<2.000	100	110.7	111	87-120	ug/L	

Project Name Kop Flex

PSS Project No.: 20111204

Analytical Method: SW-846 8260 B

Seq Number: 179706

MB Sample Id: 83917-1-BLK

Matrix: Water

LCS Sample Id: 83917-1-BKS

Prep Method: SW5030B

Date Prep: 11/17/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	54.69	109	87-122	ug/L	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Flag
4-Bromofluorobenzene	106		99		88-112	%	
Dibromofluoromethane	102		101		93-111	%	
Toluene-D8	100		100		94-107	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 179951

MB Sample Id: 84032-1-BLK

Matrix: Water

LCS Sample Id: 84032-1-BKS

Prep Method: SW5030B

Date Prep: 11/30/20

LCSD Sample Id: 84032-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	20.00	26.27	131	26.35	132	50-150	1	20	ug/L	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Flag		
Toluene-D8	105		112		111		80-120	%			

F = RPD exceeded the laboratory control limits

X = Recovery of MS, MSD or both outside of QC Criteria

H= Recovery of BS,BSD or both exceeded the laboratory control limits

L = Recovery of BS,BSD or both below the laboratory control limits

Project Name Kop Flex

PSS Project No.: 20111204

Analytical Method: EPA 624 .1

Seq Number: 179415

Matrix: Water

Parent Sample Id: ICV-01

ICV Sample Id: ICV-01

Analyzed Date: 11/05/20 11:52

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05093	102	54-148	mg/L	
Chloromethane	0.05000	0.05298	106	57-135	mg/L	
Vinyl Chloride	0.05000	0.05282	106	64-129	mg/L	
Bromomethane	0.05000	0.05221	104	67-132	mg/L	
Chloroethane	0.05000	0.05048	101	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05215	104	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05235	105	67-126	mg/L	
Methylene Chloride	0.05000	0.05186	104	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05241	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05393	108	76-127	mg/L	
Chloroform	0.05000	0.05300	106	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05574	111	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05343	107	73-130	mg/L	
Benzene	0.05000	0.05413	108	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05331	107	77-129	mg/L	
Trichloroethene	0.05000	0.05426	109	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05468	109	74-129	mg/L	
Bromodichloromethane	0.05000	0.05289	106	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05442	109	76-116	mg/L	
Toluene	0.05000	0.05369	107	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05489	110	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05365	107	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05480	110	78-128	mg/L	
Dibromochloromethane	0.05000	0.05347	107	70-132	mg/L	
Chlorobenzene	0.05000	0.05394	108	72-128	mg/L	
Ethylbenzene	0.05000	0.05657	113	69-131	mg/L	
Bromoform	0.05000	0.05393	108	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05363	107	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05500	110	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05404	108	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05518	110	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	100	88-110	%	

Project Name Kop Flex

PSS Project No.: 20111204

Analytical Method: SW-846 8260 B

Seq Number: 179706

Matrix: Water

CCV Sample Id: CCV-01

Analyzed Date: 11/17/20 09:35

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acetone	50.00	46.35	93	80-120	ug/L	
Benzene	50.00	52.16	104	80-120	ug/L	
Bromochloromethane	50.00	52.98	106	80-120	ug/L	
Bromodichloromethane	50.00	52.38	105	80-120	ug/L	
Bromoform	50.00	53.66	107	80-120	ug/L	
Bromomethane	50.00	37.95	76	80-120	ug/L	X
2-Butanone (MEK)	50.00	55.63	111	80-120	ug/L	
Carbon Disulfide	50.00	53.97	108	80-120	ug/L	
Carbon tetrachloride	50.00	50.21	100	80-120	ug/L	
Chlorobenzene	50.00	51.13	102	80-120	ug/L	
Chloroethane	50.00	50.13	100	80-120	ug/L	
Chloroform	50.00	51.82	104	80-120	ug/L	
Chloromethane	50.00	46.94	94	80-120	ug/L	
Cyclohexane	50.00	52.05	104	80-120	ug/L	
1,2-Dibromo-3-chloropropane	50.00	52.21	104	80-120	ug/L	
Dibromochloromethane	50.00	52.43	105	80-120	ug/L	
1,2-Dibromoethane	50.00	53.34	107	80-120	ug/L	
1,2-Dichlorobenzene	50.00	50.72	101	80-120	ug/L	
1,3-Dichlorobenzene	50.00	50.16	100	80-120	ug/L	
Dichlorodifluoromethane	50.00	43.68	87	80-120	ug/L	
1,4-Dichlorobenzene	50.00	50.14	100	80-120	ug/L	
1,1-Dichloroethane	50.00	54.73	109	80-120	ug/L	
1,2-Dichloroethane	50.00	52.10	104	80-120	ug/L	
cis-1,2-Dichloroethene	50.00	50.61	101	80-120	ug/L	
1,1-Dichloroethene	50.00	51.31	103	80-120	ug/L	
1,2-Dichloropropane	50.00	53.29	107	80-120	ug/L	
cis-1,3-Dichloropropene	50.00	52.43	105	80-120	ug/L	
trans-1,3-Dichloropropene	50.00	52.55	105	80-120	ug/L	
trans-1,2-Dichloroethene	50.00	51.85	104	80-120	ug/L	
Ethylbenzene	50.00	53.69	107	80-120	ug/L	
2-Hexanone (MBK)	50.00	51.06	102	80-120	ug/L	
Isopropylbenzene	50.00	51.49	103	80-120	ug/L	
Methyl Acetate	50.00	54.75	110	80-120	ug/L	
Methylcyclohexane	50.00	50.81	102	80-120	ug/L	
Methylene chloride	50.00	51.60	103	80-120	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	52.90	106	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	53.50	107	80-120	ug/L	
Naphthalene	50.00	50.71	101	80-120	ug/L	
Styrene	50.00	51.48	103	80-120	ug/L	
1,1,2,2-Tetrachloroethane	50.00	51.74	103	80-120	ug/L	
Tetrachloroethene	50.00	50.84	102	80-120	ug/L	
Toluene	50.00	51.35	103	80-120	ug/L	
1,2,3-Trichlorobenzene	50.00	49.85	100	80-120	ug/L	
1,2,4-Trichlorobenzene	50.00	49.56	99	80-120	ug/L	
1,1,1-Trichloroethane	50.00	52.41	105	80-120	ug/L	
Trichloroethene	50.00	51.20	102	80-120	ug/L	
1,1,2-Trichloroethane	50.00	53.28	107	80-120	ug/L	
Trichlorofluoromethane	50.00	51.43	103	80-120	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	50.85	102	80-120	ug/L	
Vinyl chloride	50.00	58.49	117	80-120	ug/L	
m&p-Xylene	100	108.2	108	80-120	ug/L	

Project Name Kop Flex
PSS Project No.: 20111204

Analytical Method: SW-846 8260 B

Seq Number: 179706

Matrix: Water

CCV Sample Id: CCV-01

Analyzed Date: 11/17/20 09:35

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
o-Xylene	50.00	53.62	107	80-120	ug/L	
Surrogate		CCV Result		Limits	Units	Flag
4-Bromofluorobenzene		96		80-120	%	
Dibromofluoromethane		101		80-120	%	
Toluene-D8		101		80-120	%	

Project Name Kop Flex

PSS Project No.: 20111204

Analytical Method: SW-846 8260 B

Seq Number: 179414

Matrix: Water

Parent Sample Id: ICV-01

ICV Sample Id: ICV-01

Analyzed Date: 11/05/20 11:52

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	50.00	48.41	97	75-125	ug/L	
Benzene	50.00	54.13	108	75-125	ug/L	
Bromochloromethane	50.00	54.30	109	75-125	ug/L	
Bromodichloromethane	50.00	52.89	106	75-125	ug/L	
Bromoform	50.00	53.93	108	75-125	ug/L	
Bromomethane	50.00	52.21	104	75-125	ug/L	
2-Butanone (MEK)	50.00	48.92	98	75-125	ug/L	
Carbon Disulfide	50.00	54.56	109	75-125	ug/L	
Carbon tetrachloride	50.00	53.43	107	75-125	ug/L	
Chlorobenzene	50.00	53.94	108	75-125	ug/L	
Chloroethane	50.00	50.48	101	75-125	ug/L	
Chloroform	50.00	53.00	106	75-125	ug/L	
Chloromethane	50.00	52.98	106	75-125	ug/L	
Cyclohexane	50.00	55.29	111	75-125	ug/L	
1,2-Dibromo-3-chloropropane	50.00	53.95	108	75-125	ug/L	
Dibromochloromethane	50.00	53.47	107	75-125	ug/L	
1,2-Dibromoethane	50.00	56.73	113	75-125	ug/L	
1,2-Dichlorobenzene	50.00	55.18	110	75-125	ug/L	
1,3-Dichlorobenzene	50.00	55.00	110	75-125	ug/L	
Dichlorodifluoromethane	50.00	50.93	102	75-125	ug/L	
1,4-Dichlorobenzene	50.00	54.04	108	75-125	ug/L	
1,1-Dichloroethane	50.00	53.93	108	75-125	ug/L	
1,2-Dichloroethane	50.00	53.31	107	75-125	ug/L	
cis-1,2-Dichloroethene	50.00	52.10	104	75-125	ug/L	
1,1-Dichloroethene	50.00	52.35	105	75-125	ug/L	
1,2-Dichloropropane	50.00	54.68	109	75-125	ug/L	
cis-1,3-Dichloropropene	50.00	54.42	109	75-125	ug/L	
trans-1,3-Dichloropropene	50.00	54.89	110	75-125	ug/L	
trans-1,2-Dichloroethene	50.00	52.41	105	75-125	ug/L	
Ethylbenzene	50.00	56.57	113	75-125	ug/L	
2-Hexanone (MBK)	50.00	53.00	106	75-125	ug/L	
Isopropylbenzene	50.00	57.31	115	75-125	ug/L	
Methyl Acetate	50.00	53.44	107	75-125	ug/L	
Methylcyclohexane	50.00	56.31	113	75-125	ug/L	
Methylene chloride	50.00	51.86	104	75-125	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	53.94	108	75-125	ug/L	
Methyl-t-Butyl Ether	50.00	53.91	108	75-125	ug/L	
Naphthalene	50.00	54.46	109	75-125	ug/L	
Styrene	50.00	53.72	107	75-125	ug/L	
1,1,2,2-Tetrachloroethane	50.00	53.63	107	75-125	ug/L	
Tetrachloroethene	50.00	54.80	110	75-125	ug/L	
Toluene	50.00	53.69	107	75-125	ug/L	
1,2,3-Trichlorobenzene	50.00	56.52	113	75-125	ug/L	
1,2,4-Trichlorobenzene	50.00	57.71	115	75-125	ug/L	
1,1,1-Trichloroethane	50.00	55.74	111	75-125	ug/L	
Trichloroethene	50.00	54.26	109	75-125	ug/L	
1,1,2-Trichloroethane	50.00	53.65	107	75-125	ug/L	
Trichlorofluoromethane	50.00	52.15	104	75-125	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	52.48	105	75-125	ug/L	
Vinyl chloride	50.00	52.82	106	75-125	ug/L	
m&p-Xylene	100	113.7	114	75-125	ug/L	

Project Name Kop Flex

PSS Project No.: 20111204

Analytical Method: SW-846 8260 B

Seq Number: 179414

Matrix: Water

Parent Sample Id: ICV-01

ICV Sample Id: ICV-01

Analyzed Date: 11/05/20 11:52

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
o-Xylene	50.00	56.22	112	75-125	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	98	75-125	%	
Dibromofluoromethane	100	75-125	%	
Toluene-D8	100	75-125	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 179951

Matrix: Water

CCV Sample Id: CCV, VOC-1

Analyzed Date: 11/26/20 14:35

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	20.00	24.16	121	80-120	ug/L	X

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	114	80-120	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 179362

Matrix: Water

Parent Sample Id: ICV, 1,4-DIOXANE

ICV Sample Id: ICV, 1,4-DIOXANE

Analyzed Date: 11/04/20 10:29

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	31.20	104	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	96	80-120	%	

X = Recovery outside of QC Criteria

**PHASE
SEPARATION
SCIENCE**

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

PSS CLIENT: WSP USA		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 2011204			PAGE 1 OF 1			
BILL TO (if different):		PHONE #: 703-709-0500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe						
CONTACT: Eric Johnson		EMAIL: ehc.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes HCl(HCl) HCl			Preservative Codes 1 - HCL 2 - H ₂ SO ₄ 3 - HNO ₃ 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit	
PROJECT NAME: Kop-Flex		PROJECT #: 31401545.010-04				Analysis/Method Required				
SITE LOCATION: Hanover, Md		P.O. #:				③				
SAMPLER(S): Lauren Johnson		DW CERT #:				1,4-dioxane (8260B SIM) VOCs (8260B) VOCs (624)				
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB				
	Effluent VSP-4	11/12/20	9:05	WW	3	G	X			
	Influent VSP-1	11/12/20	8:55	GW	1	G	X	X		
	TB-111220	11/12/20	-	W	4	-	X	X		
Relinquished By: (1) Lauren Johnson		Date: 11/12/20	Time: 9:55	Received By: ala nson		Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			Ice Present: YES TB=3.4°C	
Relinquished By: (2)		Date:	Time:	Received By:		STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER			Custody Seal: Intact - Cooler	
Relinquished By: (3)		Date:	Time:	Received By:		COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW			# Coolers: 1 Temp: 4.1-5.7°C	
Relinquished By: (4)		Date:	Time:	Received By:		EDD FORMAT TYPE			Shipping Carrier: FT client am 11/21/20	
						Special Instructions: standard 10-day TAT				

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop Flex
PSS Project No.: 20111204

Client Name WSP USA - Herndon
Disposal Date 12/17/2020

Received By Amber Confer
Date Received 11/12/2020 09:55:00 AM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
Seal(s) Signed / Dated? Yes

Ice Present
Temp (deg C) 5.7
Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
Chain of Custody Yes

Sampler Name Lauren Johnson
MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
Intact? Yes
Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 3
Total No. of Containers Received 13

Preservation

Total Metals (pH<2) N/A
Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
Orthophosphorus, filtered within 15 minutes of collection N/A
Cyanides (pH>12) N/A
Sulfide (pH>9) N/A
TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
TOX, TKN, NH3, Total Phos (pH<2) N/A
VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
Do VOA vials have zero headspace? Yes
624 VOC (Rcvd at least one unpreserved VOA vial) No
524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

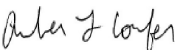
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 11/12/2020

PM Review and Approval:



Amber Confer

Date: 11/12/2020

Project Name: Kop-Flex
PSS Project No.: 20120309

December 17, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20120309**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20120309**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on January 7, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager

Explanation of Qualifiers

Project Name: Kop-Flex
 PSS Project No.: 20120309

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 12/03/2020 at 12:55 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20120309-001	Effluent VSP-4	WASTE WATER	12/03/20 12:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C** Results Pending Final Confirmation.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail** The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J** The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL** This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND** Not Detected at or above the reporting limit.
- RL** PSS Reporting Limit.
- U** Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
 State Certifications: MD 179, WV 303
 Regulated Soil Permit: P330-12-00268
 NSWC USCG Accepted Laboratory
 LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20120309

Sample ID: Effluent VSP-4 **Date/Time Sampled: 12/03/2020 12:00** **PSS Sample ID: 20120309-001**
Matrix: WASTE WATER **Date/Time Received: 12/03/2020 12:55**

Dissolved Metals Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	1.3	ug/L	1.0		1	12/04/20	12/05/20 00:47	1064
Lead	ND	ug/L	1.0		1	12/04/20	12/05/20 00:47	1064
Nickel	17.2	ug/L	1.00		1	12/04/20	12/05/20 00:47	1064
Zinc	22.7	ug/L	20.0		1	12/04/20	12/05/20 00:47	1064

Total Metals Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Copper	2.7	ug/L	1.0		1	12/04/20	12/04/20 20:23	1064
Lead	ND	ug/L	1.0		1	12/04/20	12/04/20 20:23	1064
Nickel	17.7	ug/L	1.00		1	12/04/20	12/04/20 20:23	1064
Zinc	27.5	ug/L	20.0		1	12/04/20	12/04/20 20:23	1064

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 180249 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Chloromethane	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Vinyl Chloride	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Bromomethane	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Chloroethane	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Trichlorofluoromethane	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
1,1-Dichloroethene	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Methylene Chloride	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
trans-1,2-dichloroethene	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
1,1-Dichloroethane	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Chloroform	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
1,1,1-Trichloroethane	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Carbon Tetrachloride	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Benzene	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
1,2-Dichloroethane	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Trichloroethene	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
1,2-Dichloropropane	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Bromodichloromethane	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014

Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 20120309

Sample ID: Effluent VSP-4 **Date/Time Sampled: 12/03/2020 12:00** **PSS Sample ID: 20120309-001**
Matrix: WASTE WATER **Date/Time Received: 12/03/2020 12:55**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 180249 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Toluene	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
trans-1,3-dichloropropene	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
1,1,2-Trichloroethane	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Tetrachloroethylene	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Dibromochloromethane	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Chlorobenzene	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Ethylbenzene	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Bromoform	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
1,3-Dichlorobenzene	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
1,4-Dichlorobenzene	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
1,2-Dichlorobenzene	ND	ug/L	1.0		1	12/09/20	12/09/20 16:58	1014
Surrogate(s) Recovery Limits								
<i>Dibromofluoromethane</i>	<i>102</i>	<i>%</i>	<i>87-120</i>		<i>1</i>	<i>12/09/20</i>	<i>12/09/20 16:58</i>	<i>1014</i>
<i>4-Bromofluorobenzene</i>	<i>105</i>	<i>%</i>	<i>85-147</i>		<i>1</i>	<i>12/09/20</i>	<i>12/09/20 16:58</i>	<i>1014</i>
<i>Toluene-D8</i>	<i>100</i>	<i>%</i>	<i>88-110</i>		<i>1</i>	<i>12/09/20</i>	<i>12/09/20 16:58</i>	<i>1014</i>

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	24	mg/L	0.66		1	12/07/20	12/07/20 17:12	1064

Total Suspended Solids Analytical Method: SM 2540D -2011

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Suspended Solids	ND	mg/L	1.0		1	12/04/20	12/04/20 14:15	1061

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20120309

Sample ID: Effluent VSP-4 **Date/Time Sampled: 12/03/2020 12:00** **PSS Sample ID: 20120309-001**
Matrix: WASTE WATER **Date/Time Received: 12/03/2020 12:55**

Biochemical Oxygen Demand Analytical Method: SM 5210B -2011

Start time: 03-Dec-20 15:45

	Result	Units	RL	Flag	Prepared	Analyzed	Analyst
Biochemical Oxygen Demand, 5 day	ND	mg/L	5.0		12/03/20	12/08/20 17:50	4005

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20120309

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

20120309: Analyses associated with analyst code 4005 were performed by Enviro-Chem Laboratories, Inc., 47 Loveton Circle, Suite K, Sparks, MD 21152

Analytical:

Volatile Organics Compounds (TVO)

Batch: 180249

Method exceedance: A target analyte was detected in the method blank; Chloromethane was 0.19ppb, Chloroform was 0.24ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SM 5210B -2011

Lab Chronology

Project Name: Kop-Flex
 PSS Project No.: 20120309

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	Effluent VSP-4	Initial	20120309-001	W	84086	180092	12/04/2020 10:21	12/04/2020 20:23
	84086-1-BKS	BKS	84086-1-BKS	W	84086	180092	12/04/2020 10:21	12/04/2020 14:30
	84086-1-BLK	BLK	84086-1-BLK	W	84086	180092	12/04/2020 10:21	12/04/2020 14:26
	13409-EFF-11/30/20 S	MS	20120108-001 S	W	84086	180092	12/04/2020 10:21	12/04/2020 18:16
	Effluent VSP-4 S	MS	20120309-001 S	W	84086	180092	12/04/2020 10:21	12/04/2020 20:28
	13409-EFF-11/30/20 SD	MSD	20120108-001 S	W	84086	180092	12/04/2020 10:21	12/04/2020 18:21
EPA 200.8	Effluent VSP-4	Initial	20120309-001	W	84094	180136	12/04/2020 18:57	12/05/2020 00:47
	84094-1-BKS	BKS	84094-1-BKS	W	84094	180136	12/04/2020 18:57	12/04/2020 23:37
	84094-1-BLK	BLK	84094-1-BLK	W	84094	180136	12/04/2020 18:57	12/04/2020 23:32
	20201202-001 S	MS	20120214-001 S	W	84094	180136	12/04/2020 18:57	12/04/2020 23:46
	Discharge 201202 S	MS	20120312-002 S	W	84094	180136	12/04/2020 18:57	12/05/2020 01:01
	20201202-001 SD	MSD	20120214-001 S	W	84094	180136	12/04/2020 18:57	12/04/2020 23:51
EPA 624 .1	Effluent VSP-4	Initial	20120309-001	W	84163	180249	12/09/2020 08:25	12/09/2020 16:58
	84163-1-BKS	BKS	84163-1-BKS	W	84163	180249	12/09/2020 08:25	12/09/2020 09:10
	84163-1-BLK	BLK	84163-1-BLK	W	84163	180249	12/09/2020 08:25	12/09/2020 12:59
	1015 Discharge - 120720 S	MS	20120713-001 S	W	84163	180249	12/09/2020 08:25	12/09/2020 09:57
	1015 Discharge - 120720 SD	MSD	20120713-001 S	W	84163	180249	12/09/2020 08:25	12/09/2020 10:20
SM 2340B	Effluent VSP-4	Initial	20120309-001	W	84086	180160	12/07/2020 15:35	12/07/2020 17:12
SM 2540D -2011	Effluent VSP-4	Initial	20120309-001	W	180088	180088	12/04/2020 14:15	12/04/2020 14:15
	180088-1-BLK	BLK	180088-1-BLK	W	180088	180088	12/04/2020 14:15	12/04/2020 14:15
	Millville 001 D	MD	20120305-001 D	W	180088	180088	12/04/2020 14:15	12/04/2020 14:15
	RIA TDA JG MEDIAN DEC 2020 D	MD	20120335-001 D	W	180088	180088	12/04/2020 14:15	12/04/2020 14:15
SM 5210B -2011	Effluent VSP-4	Initial	20120309-001	W	180443	180443	12/03/2020 00:00	12/08/2020 17:50

Project Name Kop-Flex
PSS Project No.: 20120309

Analytical Method: SM 2540D -2011

Seq Number: 180088 Matrix: Water
MB Sample Id: 180088-1-BLK

Parameter	MB Result	LOD	RL	Units	Flag
Suspended Solids	ND	0.5000	1.000	mg/L	

Analytical Method: EPA 200.8

Seq Number: 180092 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 84086-1-BLK LCS Sample Id: 84086-1-BKS Date Prep: 12/04/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	41.46	104	85-115	ug/L	
Lead	<1.000	40.00	37.85	95	85-115	ug/L	
Nickel	<1.000	40.00	40.96	102	85-115	ug/L	
Zinc	<20.00	200	205.6	103	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180136 Matrix: Water Prep Method: E200.8_PREP
MB Sample Id: 84094-1-BLK LCS Sample Id: 84094-1-BKS Date Prep: 12/04/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Copper	<1.000	40.00	37.50	94	85-115	ug/L	
Lead	<1.000	40.00	35.33	88	85-115	ug/L	
Nickel	<1.000	40.00	37.31	93	85-115	ug/L	
Zinc	<20.00	200	193.2	97	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180092 Matrix: Waste Water Prep Method: E200.8_PREP
Parent Sample Id: 20120309-001 MS Sample Id: 20120309-001 S Date Prep: 12/04/20

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Flag
Copper	2.749	40.00	40.19	94	70-130	ug/L	
Lead	<1.000	40.00	35.86	90	70-130	ug/L	
Nickel	17.67	40.00	53.87	91	70-130	ug/L	
Zinc	27.47	200	214.5	94	70-130	ug/L	

Project Name Kop-Flex
PSS Project No.: 20120309

Analytical Method: EPA 624 .1

Seq Number: 180249

MB Sample Id: 84163-1-BLK

Matrix: Water

LCS Sample Id: 84163-1-BKS

Prep Method: E624PREP

Date Prep: 12/09/20

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	42.23	84	54-148	ug/L	
Chloromethane	<1.000	50.00	46.08	92	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	53.67	107	5-195	ug/L	
Bromomethane	<1.000	50.00	42.24	84	15-185	ug/L	
Chloroethane	<1.000	50.00	46.29	93	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	46.38	93	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.29	97	50-150	ug/L	
Methylene Chloride	<1.000	50.00	50.19	100	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	50.16	100	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	53.63	107	70-130	ug/L	
Chloroform	<1.000	50.00	51.76	104	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	52.14	104	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	48.80	98	70-130	ug/L	
Benzene	<1.000	50.00	52.09	104	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	52.51	105	70-130	ug/L	
Trichloroethene	<1.000	50.00	50.99	102	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	54.32	109	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	52.94	106	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	54.52	109	25-175	ug/L	
Toluene	<1.000	50.00	51.22	102	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	55.04	110	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	53.07	106	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	48.74	97	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	50.46	101	70-135	ug/L	
Chlorobenzene	<1.000	50.00	48.60	97	65-135	ug/L	
Ethylbenzene	<1.000	50.00	50.06	100	60-140	ug/L	
Bromoform	<1.000	50.00	51.00	102	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	48.24	96	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	47.11	94	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	46.92	94	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	47.36	95	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	102		98		87-120	%
4-Bromofluorobenzene	105		97		85-147	%
Toluene-D8	100		106		88-110	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Project Name Kop-Flex

PSS Project No.: 20120309

Analytical Method: EPA 200.8

Seq Number: 180092

Matrix: Water

CCV Sample Id: CCV 1

Analyzed Date: 12/04/20 15:01

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	37.34	93	85-115	ug/L	
Lead	40.00	39.32	98	85-115	ug/L	
Nickel	40.00	36.97	92	85-115	ug/L	
Zinc	200	187.5	94	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180092

Matrix: Water

CCV Sample Id: CCV 2

Analyzed Date: 12/04/20 18:35

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	37.80	95	85-115	ug/L	
Lead	40.00	39.09	98	85-115	ug/L	
Nickel	40.00	37.80	95	85-115	ug/L	
Zinc	200	191.1	96	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180092

Matrix: Water

CCV Sample Id: CCV 3

Analyzed Date: 12/04/20 19:45

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	35.20	88	85-115	ug/L	
Lead	40.00	40.74	102	85-115	ug/L	
Nickel	40.00	34.89	87	85-115	ug/L	
Zinc	200	174.4	87	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180092

Matrix: Water

CCV Sample Id: CCV 4

Analyzed Date: 12/04/20 20:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	36.81	92	85-115	ug/L	
Lead	40.00	39.38	98	85-115	ug/L	
Nickel	40.00	36.74	92	85-115	ug/L	
Zinc	200	186.7	93	85-115	ug/L	

Project Name Kop-Flex
PSS Project No.: 20120309

Analytical Method: EPA 200.8

Seq Number: 180136
CCV Sample Id: CCV 6

Matrix: Water

Analyzed Date: 12/04/20 23:03

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	38.41	96	85-115	ug/L	
Lead	40.00	36.63	92	85-115	ug/L	
Nickel	40.00	38.41	96	85-115	ug/L	
Zinc	200	195.2	98	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180136
CCV Sample Id: CCV 7

Matrix: Water

Analyzed Date: 12/05/20 00:09

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	37.33	93	85-115	ug/L	
Lead	40.00	37.96	95	85-115	ug/L	
Nickel	40.00	37.29	93	85-115	ug/L	
Zinc	200	192.2	96	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180136
CCV Sample Id: CCV 8

Matrix: Water

Analyzed Date: 12/05/20 01:15

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Copper	40.00	40.20	101	85-115	ug/L	
Lead	40.00	34.88	87	85-115	ug/L	
Nickel	40.00	40.56	101	85-115	ug/L	
Zinc	200	202.3	101	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180092
Parent Sample Id: ICV 1

Matrix: Water
ICV Sample Id: ICV 1

Analyzed Date: 12/04/20 12:59

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	38.19	95	90-110	ug/L	
Lead	40.00	38.79	97	90-110	ug/L	
Nickel	40.00	38.10	95	90-110	ug/L	
Zinc	200	193.2	97	90-110	ug/L	

Project Name Kop-Flex

PSS Project No.: 20120309

Analytical Method: EPA 200.8

Seq Number: 180136

Matrix: Water

Parent Sample Id: ICV 1

ICV Sample Id: ICV 1

Analyzed Date: 12/04/20 12:59

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Copper	40.00	38.19	95	90-110	ug/L	
Lead	40.00	38.79	97	90-110	ug/L	
Nickel	40.00	38.10	95	90-110	ug/L	
Zinc	200	193.2	97	90-110	ug/L	

Analytical Method: EPA 624 .1

Seq Number: 179415

Matrix: Water

Parent Sample Id: ICV-01

ICV Sample Id: ICV-01

Analyzed Date: 11/05/20 11:52

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05093	102	54-148	mg/L	
Chloromethane	0.05000	0.05298	106	57-135	mg/L	
Vinyl Chloride	0.05000	0.05282	106	64-129	mg/L	
Bromomethane	0.05000	0.05221	104	67-132	mg/L	
Chloroethane	0.05000	0.05048	101	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05215	104	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05235	105	67-126	mg/L	
Methylene Chloride	0.05000	0.05186	104	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05241	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05393	108	76-127	mg/L	
Chloroform	0.05000	0.05300	106	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05574	111	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05343	107	73-130	mg/L	
Benzene	0.05000	0.05413	108	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05331	107	77-129	mg/L	
Trichloroethene	0.05000	0.05426	109	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05468	109	74-129	mg/L	
Bromodichloromethane	0.05000	0.05289	106	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05442	109	76-116	mg/L	
Toluene	0.05000	0.05369	107	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05489	110	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05365	107	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05480	110	78-128	mg/L	
Dibromochloromethane	0.05000	0.05347	107	70-132	mg/L	
Chlorobenzene	0.05000	0.05394	108	72-128	mg/L	
Ethylbenzene	0.05000	0.05657	113	69-131	mg/L	
Bromoform	0.05000	0.05393	108	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05363	107	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05500	110	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05404	108	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05518	110	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	100	88-110	%	

Project Name Kop-Flex
PSS Project No.: 20120309

X = Recovery outside of QC Criteria

PHASE SEPARATION SCIENCE

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

www.phaseonline.com ~ info@phaseonline.com

6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

PSS CLIENT: WSP		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 20120309			PAGE 1 OF 1									
BILL TO (if different):		PHONE #: 703-709-6500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe												
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes						Preservative Codes 1 - HCL 2 - H ₂ SO ₄ 3 - HNO ₃ 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit				
PROJECT NAME: Kop-Flex		PROJECT #: 31401545.010/04				Analysis/Method Required										
SITE LOCATION: Hanover, MD		P.O. #:				<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">VOCS (624)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Dissolved Metals (200.8)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Total Metals + Hardness (200.8)</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TSS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BOD</div> </div>										
SAMPLER(S): Shannon Burke		DW CERT #:														
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	SW	DW	GW	WW	O	S	SOL	A	WI	
1	Effluent VSP-4	12/3/20	1200	WW	7	G	X	X	X	X	X					Dissolved metals field-filtered
Relinquished By: (1) Shannon Burke		Date 12/3/20	Time 1255	Received By: [Signature]	Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			Ice Present: PRES TA 3.1°C								
Relinquished By: (2)		Date	Time	Received By:	STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER			Custody Seal: ACCELERANT								
Relinquished By: (3)		Date	Time	Received By:	COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW			# Coolers: 1 Temp: 48°-5.1°C								
Relinquished By: (4)		Date	Time	Received By:	EDD FORMAT TYPE			Shipping Carrier: CLW								
					Special Instructions: Standard 10-day TAT Metals = Pb, Cu, Ni, Zn											

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 20120309

Client Name WSP USA - Herndon
Disposal Date 01/07/2021

Received By Thomas Wingate
Date Received 12/03/2020 12:55:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
Seal(s) Signed / Dated? Yes

Ice Present
Temp (deg C) 5.1
Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
Chain of Custody Yes

Sampler Name Shannon Burke
MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
Intact? Yes
Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
Total No. of Containers Received 7

Preservation

Total Metals (pH<2) Yes
Dissolved Metals, filtered within 15 minutes of collection (pH<2) Yes
Orthophosphorus, filtered within 15 minutes of collection N/A
Cyanides (pH>12) N/A
Sulfide (pH>9) N/A
TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
TOX, TKN, NH3, Total Phos (pH<2) N/A
VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
Do VOA vials have zero headspace? Yes
624 VOC (Rcvd at least one unpreserved VOA vial) No
524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

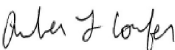
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 12/03/2020

PM Review and Approval:



Amber Confer

Date: 12/03/2020

Project Name: Kop-Flex
PSS Project No.: 20120310

December 8, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20120310**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20120310**.

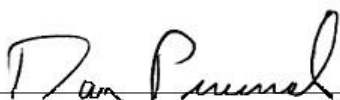
All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on January 7, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Project Name: Kop-Flex
PSS Project No.: 20120310

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 12/03/2020 at 12:55 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20120310-001	Effluent VSP-4	WASTE WATER	12/03/20 12:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20120310

Sample ID: Effluent VSP-4 **Date/Time Sampled: 12/03/2020 12:00** **PSS Sample ID: 20120310-001**
Matrix: WASTE WATER **Date/Time Received: 12/03/2020 12:55**
 1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	2.0	ug/L	1.0		1	12/07/20	12/07/20 16:06	1011
Surrogate(s)	Recovery		Limits					
Toluene-D8	102	%	80-120		1	12/07/20	12/07/20 16:06	1011

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20120310

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

General Comments:

Per client, analyze sample 001 on a 3-day turnaround.

Refer to work order 20120311 for remaining results.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop-Flex
 PSS Project No.: 20120310

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SW-846 8260 B-Modified	Effluent VSP-4	Initial	20120310-001	W	84126	180149	12/07/2020 12:57	12/07/2020 16:06
	84126-1-BKS	BKS	84126-1-BKS	W	84126	180149	12/07/2020 12:57	12/07/2020 14:37
	84126-1-BLK	BLK	84126-1-BLK	W	84126	180149	12/07/2020 12:57	12/07/2020 15:44
	84126-1-BSD	BSD	84126-1-BSD	W	84126	180149	12/07/2020 12:57	12/07/2020 14:59

Project Name Kop-Flex
PSS Project No.: 20120310

Analytical Method: SW-846 8260 B-Modified

Seq Number: 180149

Matrix: Water

Prep Method: SW5030B

Date Prep: 12/07/20

MB Sample Id: 84126-1-BLK

LCS Sample Id: 84126-1-BKS

LCSD Sample Id: 84126-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	27.63	92	27.43	91	50-150	1	20	ug/L	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units			
Toluene-D8	100		102		102		80-120	%			

F = RPD exceeded the laboratory control limits
 X = Recovery of MS, MSD or both outside of QC Criteria
 H= Recovery of BS,BSD or both exceeded the laboratory control limits
 L = Recovery of BS,BSD or both below the laboratory control limits

Project Name Kop-Flex

PSS Project No.: 20120310

Analytical Method: SW-846 8260 B-Modified

Seq Number: 175110

Matrix: Water

CCV Sample Id: CCV-01

Analyzed Date: 06/11/20 11:36

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	30.40	101	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	99	80-120	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 180149

Matrix: Water

CCV Sample Id: CCV-01

Analyzed Date: 12/07/20 14:08

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	28.03	93	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	104	80-120	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 175110

Matrix: Water

Parent Sample Id: ICV-01

ICV Sample Id: ICV-01

Analyzed Date: 06/11/20 11:14

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	31.22	104	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	99	80-120	%	

X = Recovery outside of QC Criteria

**PHASE
SEPARATION
SCIENCE**

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

www.phaseonline.com ~ info@phaseonline.com

6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

① PSS CLIENT: WSP		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 20120310				PAGE 1 OF 1							
BILL TO (if different):		PHONE #: 703-709-6500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe											
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes								Preservative Codes 1 - HCL 2 - H ₂ SO ₄ 3 - HNO ₃ 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit	
PROJECT NAME: Kop-Flex		PROJECT #: 3140545.0 10/04				Analysis/Method Required									
SITE LOCATION: Hanover, MD		P.O. #:				③									
SAMPLER(S): Shannon Burke		DW CERT #:				14-dioxane (624) VOCs (624)									
② PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB									
1	Effluent VSP-4	12/3/20	1200	WW	3	G	X								
2	TB-120320	—	—	W	4	—	X X	Trip blank							
⑤ Relinquished By: (1)		Date	Time	Received By:	Requested TAT (One TAT per COC)			Ice Present:							
<i>Shannon Burke</i>		12/3/20	1255	<i>Table</i>	<input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			PRES TB: 3.1°C							
Relinquished By: (2)		Date	Time	Received By:	STATE RESULTS REPORTED TO:			Custody Seal:							
					<input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER			Cooler-Intact							
Relinquished By: (3)		Date	Time	Received By:	COMPLIANCE?			# Coolers: Temp:							
					<input type="checkbox"/> DW <input type="checkbox"/> WW			PRES Temp: 5.1°-5.4°C							
Relinquished By: (4)		Date	Time	Received By:	EDD FORMAT TYPE			Shipping Carrier:							
								Clerk							
					Special Instructions:										
								Standard 10-day TAT							

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation Page 6 of 9 and all attorney's or other reasonable fees if collection becomes necessary. Version 1.000

Sample Receipt Checklist

Project Name: Kop-Flex
 PSS Project No.: 20120310

Client Name WSP USA - Herndon
Disposal Date 01/07/2021

Received By Thomas Wingate
Date Received 12/03/2020 12:55:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 5.4
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Shannon Burke
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
 Total No. of Containers Received 3

Preservation

Total Metals (pH<2) N/A
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) N/A
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

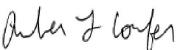
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 12/03/2020

PM Review and Approval:



Amber Confer

Date: 12/03/2020

Project Name: Kop-Flex
PSS Project No.: 20120311

December 17, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20120311**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20120311**.

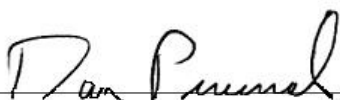
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We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Project Name: Kop-Flex
PSS Project No.: 20120311

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 12/03/2020 at 12:55 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20120311-002	TB-120320	WATER	12/03/20 11:18
20120311-002	TB-120320	WATER	12/03/20 11:18

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 20120311

Sample ID: TB-120320 **Date/Time Sampled: 12/03/2020 11:18** **PSS Sample ID: 20120311-002**
Matrix: WATER **Date/Time Received: 12/03/2020 12:55**

Volatile Organics Compounds (TVO) Analytical Method: EPA 624 .1 Preparation Method: 624

Qualifier(s): See Batch 180249 on Case Narrative.

pH=2

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Dichlorodifluoromethane	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Chloromethane	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Vinyl Chloride	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Bromomethane	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Chloroethane	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Trichlorofluoromethane	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
1,1-Dichloroethene	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Methylene Chloride	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
trans-1,2-dichloroethene	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
1,1-Dichloroethane	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Chloroform	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
1,1,1-Trichloroethane	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Carbon Tetrachloride	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Benzene	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
1,2-Dichloroethane	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Trichloroethene	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
1,2-Dichloropropane	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Bromodichloromethane	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Toluene	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
trans-1,3-dichloropropene	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
1,1,2-Trichloroethane	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Tetrachloroethylene	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Dibromochloromethane	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Chlorobenzene	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Ethylbenzene	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
Bromoform	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
1,3-Dichlorobenzene	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
1,4-Dichlorobenzene	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014
1,2-Dichlorobenzene	ND	ug/L	1.0		1	12/09/20	12/09/20 15:04	1014

Surrogate(s)	Recovery	Limits			
Dibromofluoromethane	102 %	87-120	1	12/09/20	12/09/20 15:04 1014
4-Bromofluorobenzene	104 %	85-147	1	12/09/20	12/09/20 15:04 1014
Toluene-D8	100 %	88-110	1	12/09/20	12/09/20 15:04 1014

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20120311

Sample ID: TB-120320 **Date/Time Sampled: 12/03/2020 11:18** **PSS Sample ID: 20120311-002**
Matrix: WATER **Date/Time Received: 12/03/2020 12:55**
 1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	12/07/20	12/07/20 16:28	1011
Surrogate(s)	Recovery		Limits					
Toluene-D8	100	%	80-120		1	12/07/20	12/07/20 16:28	1011

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20120311

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

General Comments:

Refer to work order 20120310 for remaining results.

Analytical:

Volatile Organics Compounds (TVO)

Batch: 180249

Method exceedance: A target analyte was detected in the method blank; Chloromethane was 0.19ppb, Chloroform was 0.24ppb in method blank.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop-Flex
 PSS Project No.: 20120311

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 624 .1	TB-120320	Initial	20120311-002	W	84163	180249	12/09/2020 08:25	12/09/2020 15:04
	84163-1-BKS	BKS	84163-1-BKS	W	84163	180249	12/09/2020 08:25	12/09/2020 09:10
	84163-1-BLK	BLK	84163-1-BLK	W	84163	180249	12/09/2020 08:25	12/09/2020 12:59
	1015 Discharge - 120720 S	MS	20120713-001 S	W	84163	180249	12/09/2020 08:25	12/09/2020 09:57
	1015 Discharge - 120720 SD	MSD	20120713-001 S	W	84163	180249	12/09/2020 08:25	12/09/2020 10:20
SW-846 8260 B- Modified	TB-120320	Initial	20120311-002	W	84126	180149	12/07/2020 12:57	12/07/2020 16:28
	84126-1-BKS	BKS	84126-1-BKS	W	84126	180149	12/07/2020 12:57	12/07/2020 14:37
	84126-1-BLK	BLK	84126-1-BLK	W	84126	180149	12/07/2020 12:57	12/07/2020 15:44
	84126-1-BSD	BSD	84126-1-BSD	W	84126	180149	12/07/2020 12:57	12/07/2020 14:59

Project Name Kop-Flex

PSS Project No.: 20120311

Analytical Method: EPA 624 .1

Seq Number: 180249

Matrix: Water

Prep Method: E624PREP

Date Prep: 12/09/20

MB Sample Id: 84163-1-BLK

LCS Sample Id: 84163-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Dichlorodifluoromethane	<1.000	50.00	42.23	84	54-148	ug/L	
Chloromethane	<1.000	50.00	46.08	92	1-205	ug/L	
Vinyl Chloride	<1.000	50.00	53.67	107	5-195	ug/L	
Bromomethane	<1.000	50.00	42.24	84	15-185	ug/L	
Chloroethane	<1.000	50.00	46.29	93	40-160	ug/L	
Trichlorofluoromethane	<1.000	50.00	46.38	93	50-150	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.29	97	50-150	ug/L	
Methylene Chloride	<1.000	50.00	50.19	100	60-140	ug/L	
trans-1,2-dichloroethene	<1.000	50.00	50.16	100	70-130	ug/L	
1,1-Dichloroethane	<1.000	50.00	53.63	107	70-130	ug/L	
Chloroform	<1.000	50.00	51.76	104	70-135	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	52.14	104	70-130	ug/L	
Carbon Tetrachloride	<1.000	50.00	48.80	98	70-130	ug/L	
Benzene	<1.000	50.00	52.09	104	65-135	ug/L	
1,2-Dichloroethane	<1.000	50.00	52.51	105	70-130	ug/L	
Trichloroethene	<1.000	50.00	50.99	102	65-135	ug/L	
1,2-Dichloropropane	<1.000	50.00	54.32	109	35-165	ug/L	
Bromodichloromethane	<1.000	50.00	52.94	106	65-135	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	54.52	109	25-175	ug/L	
Toluene	<1.000	50.00	51.22	102	70-130	ug/L	
trans-1,3-dichloropropene	<1.000	50.00	55.04	110	50-150	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	53.07	106	70-130	ug/L	
Tetrachloroethylene	<1.000	50.00	48.74	97	70-130	ug/L	
Dibromochloromethane	<1.000	50.00	50.46	101	70-135	ug/L	
Chlorobenzene	<1.000	50.00	48.60	97	65-135	ug/L	
Ethylbenzene	<1.000	50.00	50.06	100	60-140	ug/L	
Bromoform	<1.000	50.00	51.00	102	70-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	48.24	96	60-140	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	47.11	94	70-130	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	46.92	94	65-135	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	47.36	95	65-135	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
Dibromofluoromethane	102		98		87-120	%
4-Bromofluorobenzene	105		97		85-147	%
Toluene-D8	100		106		88-110	%

Analytical Method: SW-846 8260 B-Modified

Seq Number: 180149

Matrix: Water

Prep Method: SW5030B

Date Prep: 12/07/20

MB Sample Id: 84126-1-BLK

LCS Sample Id: 84126-1-BKS

LCSD Sample Id: 84126-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	27.63	92	27.43	91	50-150	1	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	100		102		102		80-120	%

Project Name Kop-Flex
PSS Project No.: 20120311

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Project Name Kop-Flex

PSS Project No.: 20120311

Analytical Method: EPA 624 .1

Seq Number: 179415

Matrix: Water

Parent Sample Id: ICV-01

ICV Sample Id: ICV-01

Analyzed Date: 11/05/20 11:52

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Dichlorodifluoromethane	0.05000	0.05093	102	54-148	mg/L	
Chloromethane	0.05000	0.05298	106	57-135	mg/L	
Vinyl Chloride	0.05000	0.05282	106	64-129	mg/L	
Bromomethane	0.05000	0.05221	104	67-132	mg/L	
Chloroethane	0.05000	0.05048	101	62-133	mg/L	
Trichlorofluoromethane	0.05000	0.05215	104	71-137	mg/L	
1,1-Dichloroethene	0.05000	0.05235	105	67-126	mg/L	
Methylene Chloride	0.05000	0.05186	104	73-120	mg/L	
trans-1,2-dichloroethene	0.05000	0.05241	105	75-127	mg/L	
1,1-Dichloroethane	0.05000	0.05393	108	76-127	mg/L	
Chloroform	0.05000	0.05300	106	79-125	mg/L	
1,1,1-Trichloroethane	0.05000	0.05574	111	73-130	mg/L	
Carbon Tetrachloride	0.05000	0.05343	107	73-130	mg/L	
Benzene	0.05000	0.05413	108	73-132	mg/L	
1,2-Dichloroethane	0.05000	0.05331	107	77-129	mg/L	
Trichloroethene	0.05000	0.05426	109	79-126	mg/L	
1,2-Dichloropropane	0.05000	0.05468	109	74-129	mg/L	
Bromodichloromethane	0.05000	0.05289	106	81-125	mg/L	
cis-1,3-Dichloropropene	0.05000	0.05442	109	76-116	mg/L	
Toluene	0.05000	0.05369	107	77-127	mg/L	
trans-1,3-dichloropropene	0.05000	0.05489	110	78-114	mg/L	
1,1,2-Trichloroethane	0.05000	0.05365	107	78-127	mg/L	
Tetrachloroethylene	0.05000	0.05480	110	78-128	mg/L	
Dibromochloromethane	0.05000	0.05347	107	70-132	mg/L	
Chlorobenzene	0.05000	0.05394	108	72-128	mg/L	
Ethylbenzene	0.05000	0.05657	113	69-131	mg/L	
Bromoform	0.05000	0.05393	108	70-130	mg/L	
1,1,2,2-Tetrachloroethane	0.05000	0.05363	107	62-134	mg/L	
1,3-Dichlorobenzene	0.05000	0.05500	110	70-129	mg/L	
1,4-Dichlorobenzene	0.05000	0.05404	108	69-127	mg/L	
1,2-Dichlorobenzene	0.05000	0.05518	110	65-133	mg/L	

Surrogate	ICV Result	Limits	Units	Flag
Dibromofluoromethane	100	87-120	%	
4-Bromofluorobenzene	98	85-147	%	
Toluene-D8	100	88-110	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 175110

Matrix: Water

CCV Sample Id: CCV-01

Analyzed Date: 06/11/20 11:36

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	30.40	101	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	99	80-120	%	

Project Name Kop-Flex

PSS Project No.: 20120311

Analytical Method: SW-846 8260 B-Modified

Seq Number: 180149

Matrix: Water

CCV Sample Id: CCV-01

Analyzed Date: 12/07/20 14:08

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	28.03	93	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Toluene-D8	104	80-120	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 175110

Matrix: Water

Parent Sample Id: ICV-01

ICV Sample Id: ICV-01

Analyzed Date: 06/11/20 11:14

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	31.22	104	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Toluene-D8	99	80-120	%	

X = Recovery outside of QC Criteria

PHASE SEPARATION SCIENCE

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

www.phaseonline.com ~ info@phaseonline.com

6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

PSS CLIENT: NSP			OFFICE LOCATION: Herndon, VA			PSS Work Order #: 20120310 20120311			PAGE 1 OF 1			
BILL TO (if different):			PHONE #: 703-709-6500			Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe						
CONTACT: Eric Johnson			EMAIL: eric.johnson@nsp.com			# OF CONTAINERS SAMPLE TYPE: C=COMPOSITE G=GRAB Preservatives Use Codes: 1 1 Analysis/Method Required: 14-dioxane (8200) VOCs (624)				Preservative Codes		
PROJECT NAME: Kop-Flex			PROJECT #: 3140545.0 10/04							1 - HCL 2 - H ₂ SO ₄ 3 - HNO ₃ 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit		
SITE LOCATION: Hanover, MD			P.O. #:									
SAMPLER(S): Shannon Burke			DW CERT #:									
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB						
1	Effluent VSP-4	12/3/20	1200	WW	3	G	X					
2	TB-120320	—	—	W	4	—	X	X				Trip blank
Relinquished By: (1) <i>Shannon Burke</i>		Date: 12/3/20	Time: 1255	Received By: <i>[Signature]</i>		Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other			Ice Present: PRES TB: 3.1°C			
Relinquished By: (2)		Date:	Time:	Received By:		STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER			Custody Seal: Cooler-Intact			
Relinquished By: (3)		Date:	Time:	Received By:		COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW			# Coolers: PRES Temp: 5.1°C - 5.4°C			
Relinquished By: (4)		Date:	Time:	Received By:		EDD FORMAT TYPE			Shipping Carrier: CLW			
						Special Instructions: Standard 10-day TAT						

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop-Flex
 PSS Project No.: 20120311

Client Name WSP USA - Herndon
Disposal Date 01/07/2021

Received By Thomas Wingate
Date Received 12/03/2020 12:55:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 5.4
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Shannon Burke
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 1
 Total No. of Containers Received 4

Preservation

Total Metals (pH<2) N/A
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) No
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Acrolein, acrylonitrile, and 2-chloroethyl vinyl ether not required for EPA 624 samples.

Samples Inspected/Checklist Completed By: Amber Confer Date: 12/03/2020
 Amber Confer

PM Review and Approval: Amber Confer Date: 12/03/2020
 Amber Confer

Project Name: Kop-Flex
PSS Project No.: 20121516

December 22, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20121516**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20121516**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on January 19, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop-Flex

PSS Project No.: 20121516

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 12/15/2020 at 02:22 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20121516-001	VSP-2	WASTE WATER	12/15/20 11:40
20121516-002	VSP-3	WASTE WATER	12/15/20 11:50
20121516-003	T-1200 Lead EF	WASTE WATER	12/15/20 11:55
20121516-004	Effluent VSP-4	WASTE WATER	12/15/20 11:30
20121516-005	TB-121520	WATER	12/15/20 14:22

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C** Results Pending Final Confirmation.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail** The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J** The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL** This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND** Not Detected at or above the reporting limit.
- RL** PSS Reporting Limit.
- U** Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015



Certificate of Analysis

6630 Baltimore National Pike
 Baltimore, MD 21228
 410-747-8770
 800-932-9047
 www.phaseonline.com

Project Name: Kop-Flex
 PSS Project No.: 20121516

Sample ID: VSP-2 **Date/Time Sampled: 12/15/2020 11:40** **PSS Sample ID: 20121516-001**
Matrix: WASTE WATER **Date/Time Received: 12/15/2020 14:22**

Dissolved Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	129	ug/L	100		1	12/17/20	12/17/20 16:18	1051
Copper	4.8	ug/L	1.0		1	12/17/20	12/17/20 16:18	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 16:18	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 16:18	1051
Nickel	14.5	ug/L	1.00		1	12/17/20	12/17/20 16:18	1051
Zinc	25.8	ug/L	20.0		1	12/17/20	12/17/20 16:18	1051

Total Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	135	ug/L	100		1	12/17/20	12/17/20 18:35	1051
Copper	5.5	ug/L	1.0		1	12/17/20	12/17/20 18:35	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 18:35	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 18:35	1051
Nickel	15.0	ug/L	1.00		1	12/17/20	12/17/20 18:35	1051
Zinc	40.1	ug/L	20.0		1	12/17/20	12/17/20 18:35	1051

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	7.8	mg/L	0.66		1	12/17/20	12/17/20 18:35	1051

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20121516

Sample ID: VSP-3 **Date/Time Sampled: 12/15/2020 11:50** **PSS Sample ID: 20121516-002**
Matrix: WASTE WATER **Date/Time Received: 12/15/2020 14:22**

Dissolved Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	120	ug/L	100		1	12/17/20	12/17/20 16:22	1051
Copper	4.8	ug/L	1.0		1	12/17/20	12/17/20 16:22	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 16:22	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 16:22	1051
Nickel	14.5	ug/L	1.00		1	12/17/20	12/17/20 16:22	1051
Zinc	26.2	ug/L	20.0		1	12/17/20	12/17/20 16:22	1051

Total Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	126	ug/L	100		1	12/17/20	12/17/20 18:49	1051
Copper	5.6	ug/L	1.0		1	12/17/20	12/17/20 18:49	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 18:49	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 18:49	1051
Nickel	14.8	ug/L	1.00		1	12/17/20	12/17/20 18:49	1051
Zinc	24.5	ug/L	20.0		1	12/17/20	12/17/20 18:49	1051

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	7.8	mg/L	0.66		1	12/17/20	12/17/20 18:49	1051

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20121516

Sample ID: T-1200 Lead EF **Date/Time Sampled: 12/15/2020 11:55** **PSS Sample ID: 20121516-003**
Matrix: WASTE WATER **Date/Time Received: 12/15/2020 14:22**

Dissolved Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	185	ug/L	100		1	12/17/20	12/17/20 16:26	1051
Copper	11.7	ug/L	1.00		1	12/17/20	12/17/20 16:26	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 16:26	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 16:26	1051
Nickel	14.8	ug/L	1.00		1	12/17/20	12/17/20 16:26	1051
Zinc	41.1	ug/L	20.0		1	12/17/20	12/17/20 16:26	1051

Total Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	182	ug/L	100		1	12/17/20	12/17/20 18:53	1051
Copper	16.4	ug/L	1.00		1	12/17/20	12/17/20 18:53	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 18:53	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 18:53	1051
Nickel	14.8	ug/L	1.00		1	12/17/20	12/17/20 18:53	1051
Zinc	59.5	ug/L	20.0		1	12/17/20	12/17/20 18:53	1051

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	7.7	mg/L	0.66		1	12/17/20	12/17/20 18:53	1051

Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 20121516

Sample ID: Effluent VSP-4 **Date/Time Sampled: 12/15/2020 11:30** **PSS Sample ID: 20121516-004**
Matrix: WASTE WATER **Date/Time Received: 12/15/2020 14:22**

Dissolved Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	ND	ug/L	100		1	12/17/20	12/17/20 16:30	1051
Copper	2.2	ug/L	1.0		1	12/17/20	12/17/20 16:30	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 16:30	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 16:30	1051
Nickel	17.5	ug/L	1.00		1	12/17/20	12/17/20 16:30	1051
Zinc	25.1	ug/L	20.0		1	12/17/20	12/17/20 16:30	1051

Total Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	ND	ug/L	100		1	12/17/20	12/17/20 18:58	1051
Copper	3.7	ug/L	1.0		1	12/17/20	12/17/20 18:58	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 18:58	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 18:58	1051
Nickel	17.0	ug/L	1.00		1	12/17/20	12/17/20 18:58	1051
Zinc	26.3	ug/L	20.0		1	12/17/20	12/17/20 18:58	1051

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	8.0	mg/L	0.66		1	12/17/20	12/17/20 18:58	1051

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	2.2	ug/L	1.0		1	12/22/20	12/22/20 11:35	1011
<i>Surrogate(s)</i>	<i>Recovery</i>		<i>Limits</i>					
<i>Toluene-D8</i>	98 %		80-120		1	12/22/20	12/22/20 11:35	1011

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20121516

Sample ID: TB-121520 **Date/Time Sampled: 12/15/2020 14:22** **PSS Sample ID: 20121516-005**

Matrix: WATER **Date/Time Received: 12/15/2020 14:22**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	12/22/20	12/22/20 13:46	1011
Surrogate(s)	Recovery		Limits					
<i>Toluene-D8</i>	<i>100</i>	<i>%</i>	<i>80-120</i>		<i>1</i>	<i>12/22/20</i>	<i>12/22/20 13:46</i>	<i>1011</i>

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20121516

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Project Name: Kop-Flex
PSS Project No.: 20121516

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	VSP-2	Initial	20121516-001	W	84260	180502	12/17/2020 10:49	12/17/2020 18:35
	VSP-3	Initial	20121516-002	W	84260	180502	12/17/2020 10:49	12/17/2020 18:49
	T-1200 Lead EF	Initial	20121516-003	W	84260	180502	12/17/2020 10:49	12/17/2020 18:53
	Effluent VSP-4	Initial	20121516-004	W	84260	180502	12/17/2020 10:49	12/17/2020 18:58
	84260-1-BKS	BKS	84260-1-BKS	W	84260	180502	12/17/2020 10:49	12/17/2020 18:30
	84260-1-BLK	BLK	84260-1-BLK	W	84260	180502	12/17/2020 10:49	12/17/2020 18:25
	VSP-2 S	MS	20121516-001 S	W	84260	180502	12/17/2020 10:49	12/17/2020 18:39
	VSP-2 SD	MSD	20121516-001 S	W	84260	180502	12/17/2020 10:49	12/17/2020 18:44
EPA 200.8	VSP-2	Initial	20121516-001	W	84264	180497	12/17/2020 12:37	12/17/2020 16:18
	VSP-3	Initial	20121516-002	W	84264	180497	12/17/2020 12:37	12/17/2020 16:22
	T-1200 Lead EF	Initial	20121516-003	W	84264	180497	12/17/2020 12:37	12/17/2020 16:26
	Effluent VSP-4	Initial	20121516-004	W	84264	180497	12/17/2020 12:37	12/17/2020 16:30
	84264-1-BKS	BKS	84264-1-BKS	W	84264	180497	12/17/2020 12:37	12/17/2020 16:01
	84264-1-BLK	BLK	84264-1-BLK	W	84264	180497	12/17/2020 12:37	12/17/2020 15:56
	Millville 001 S	MS	20121506-001 S	W	84264	180497	12/17/2020 12:37	12/17/2020 16:10
	Millville 001 SD	MSD	20121506-001 S	W	84264	180497	12/17/2020 12:37	12/17/2020 16:14
SM 2340B	VSP-2	Initial	20121516-001	W	84260	180503	12/18/2020 12:59	12/17/2020 18:35
	VSP-3	Initial	20121516-002	W	84260	180503	12/18/2020 12:59	12/17/2020 18:49
	T-1200 Lead EF	Initial	20121516-003	W	84260	180503	12/18/2020 12:59	12/17/2020 18:53
	Effluent VSP-4	Initial	20121516-004	W	84260	180503	12/18/2020 12:59	12/17/2020 18:58
SW-846 8260 B-Modified	Effluent VSP-4	Initial	20121516-004	W	84342	180587	12/22/2020 08:48	12/22/2020 11:35
	TB-121520	Initial	20121516-005	W	84342	180587	12/22/2020 08:48	12/22/2020 13:46
	84342-1-BKS	BKS	84342-1-BKS	W	84342	180587	12/22/2020 08:48	12/22/2020 09:43
	84342-1-BLK	BLK	84342-1-BLK	W	84342	180587	12/22/2020 08:48	12/22/2020 11:12
	84342-1-BSD	BSD	84342-1-BSD	W	84342	180587	12/22/2020 08:48	12/22/2020 10:05

Project Name Kop-Flex

PSS Project No.: 20121516

Analytical Method: EPA 200.8

Seq Number: 180502

Matrix: Water

Prep Method: E200.8_PREP

Date Prep: 12/17/20

MB Sample Id: 84260-1-BLK

LCS Sample Id: 84260-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Aluminum	<100	200	196.2	98	85-115	ug/L	
Copper	<1.000	40.00	39.45	99	85-115	ug/L	
Iron	<100	400	372.8	93	85-115	ug/L	
Lead	<1.000	40.00	39.24	98	85-115	ug/L	
Nickel	<1.000	40.00	37.32	93	85-115	ug/L	
Zinc	<20.00	200	191.3	96	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180497

Matrix: Water

Prep Method: E200.8_PREP

Date Prep: 12/17/20

MB Sample Id: 84264-1-BLK

LCS Sample Id: 84264-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Aluminum	<100	200	197.4	99	85-115	ug/L	
Copper	<1.000	40.00	37.84	95	85-115	ug/L	
Iron	<100	400	422.9	106	85-115	ug/L	
Lead	<1.000	40.00	38.04	95	85-115	ug/L	
Nickel	<1.000	40.00	37.07	93	85-115	ug/L	
Zinc	<20.00	200	192.4	96	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180502

Matrix: Waste Water

Prep Method: E200.8_PREP

Date Prep: 12/17/20

Parent Sample Id: 20121516-001

MS Sample Id: 20121516-001 S

MSD Sample Id: 20121516-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Aluminum	134.7	200	306.8	86	307.9	87	70-130	1	25	ug/L	
Copper	5.488	40.00	44.20	97	47.31	105	70-130	8	25	ug/L	
Iron	<100	400	411.6	103	420.2	105	70-130	2	25	ug/L	
Lead	<1.000	40.00	38.27	96	38.63	97	70-130	1	25	ug/L	
Nickel	15.02	40.00	52.21	93	55.63	102	70-130	9	25	ug/L	
Zinc	40.14	200	218.7	89	247	103	70-130	15	25	ug/L	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 180587

Matrix: Water

Prep Method: SW5030B

Date Prep: 12/22/20

MB Sample Id: 84342-1-BLK

LCS Sample Id: 84342-1-BKS

LCSD Sample Id: 84342-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	31.20	104	31.83	106	50-150	2	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Toluene-D8	99		103		102		80-120	%

Project Name Kop-Flex
PSS Project No.: 20121516

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Project Name Kop-Flex
PSS Project No.: 20121516

Analytical Method: EPA 200.8

Seq Number: 180497 Matrix: Water
CCV Sample Id: CCV 3

Analyzed Date: 12/17/20 15:37

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	211.3	106	85-115	ug/L	
Copper	40.00	39.48	99	85-115	ug/L	
Iron	400	389	97	85-115	ug/L	
Lead	40.00	42.18	105	85-115	ug/L	
Nickel	40.00	38.40	96	85-115	ug/L	
Zinc	200	197.2	99	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180497 Matrix: Water
CCV Sample Id: CCV 4

Analyzed Date: 12/17/20 16:46

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	202.3	101	85-115	ug/L	
Copper	40.00	39.88	100	85-115	ug/L	
Iron	400	380.9	95	85-115	ug/L	
Lead	40.00	39.66	99	85-115	ug/L	
Nickel	40.00	38.36	96	85-115	ug/L	
Zinc	200	198.1	99	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180497 Matrix: Water
CCV Sample Id: CCV 6

Analyzed Date: 12/17/20 18:11

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	209.5	105	85-115	ug/L	
Copper	40.00	39.29	98	85-115	ug/L	
Iron	400	377.6	94	85-115	ug/L	
Lead	40.00	41.66	104	85-115	ug/L	
Nickel	40.00	38.10	95	85-115	ug/L	
Zinc	200	194.9	97	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180502 Matrix: Water
CCV Sample Id: CCV 6

Analyzed Date: 12/17/20 18:11

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	209.5	105	85-115	ug/L	
Copper	40.00	39.29	98	85-115	ug/L	
Iron	400	377.6	94	85-115	ug/L	
Lead	40.00	41.66	104	85-115	ug/L	
Nickel	40.00	38.10	95	85-115	ug/L	
Zinc	200	194.9	97	85-115	ug/L	

Project Name Kop-Flex
PSS Project No.: 20121516

Analytical Method: EPA 200.8

Seq Number: 180502 Matrix: Water
CCV Sample Id: CCV 8

Analyzed Date: 12/17/20 19:24

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	202.3	101	85-115	ug/L	
Copper	40.00	39.40	99	85-115	ug/L	
Iron	400	378.3	95	85-115	ug/L	
Lead	40.00	40.31	101	85-115	ug/L	
Nickel	40.00	38.13	95	85-115	ug/L	
Zinc	200	194.9	97	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180502 Matrix: Water
CCV Sample Id: CCV 9

Analyzed Date: 12/17/20 20:39

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	201.7	101	85-115	ug/L	
Copper	40.00	38.98	97	85-115	ug/L	
Iron	400	378.5	95	85-115	ug/L	
Lead	40.00	39.26	98	85-115	ug/L	
Nickel	40.00	37.92	95	85-115	ug/L	
Zinc	200	193.2	97	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180497 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1

Analyzed Date: 12/17/20 11:50

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Aluminum	200	203.2	102	90-110	ug/L	
Copper	40.00	39.93	100	90-110	ug/L	
Iron	400	397	99	90-110	ug/L	
Lead	40.00	40.29	101	90-110	ug/L	
Nickel	40.00	38.99	97	90-110	ug/L	
Zinc	200	198.7	99	90-110	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180502 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1

Analyzed Date: 12/17/20 11:50

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Aluminum	200	203.2	102	90-110	ug/L	
Copper	40.00	39.93	100	90-110	ug/L	
Iron	400	397	99	90-110	ug/L	
Lead	40.00	40.29	101	90-110	ug/L	
Nickel	40.00	38.99	97	90-110	ug/L	
Zinc	200	198.7	99	90-110	ug/L	

Project Name Kop-Flex
PSS Project No.: 20121516

Analytical Method: SW-846 8260 B-Modified

Seq Number: 175110 Matrix: Water
CCV Sample Id: CCV-01

Analyzed Date: 06/11/20 11:36

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	30.40	101	80-120	ug/L	
Surrogate		CCV Result		Limits	Units	Flag
Toluene-D8		99		80-120	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 180587 Matrix: Water
CCV Sample Id: CCV-01

Analyzed Date: 12/22/20 09:21

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	29.03	97	80-120	ug/L	
Surrogate		CCV Result		Limits	Units	Flag
Toluene-D8		104		80-120	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 175110 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01

Analyzed Date: 06/11/20 11:14

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	31.22	104	70-130	ug/L	
Surrogate		ICV Result		Limits	Units	Flag
Toluene-D8		99		80-120	%	

X = Recovery outside of QC Criteria

**PHASE
SEPARATION
SCIENCE**

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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PSS CLIENT: WSP USA		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 20121516				PAGE 1 OF 1							
BILL TO (if different):		PHONE #: 703-709-6500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soll SOL=Solid A=Air WI=Wipe											
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes: 3 3 1						Preservative Codes			
PROJECT NAME: Kop-Flex		PROJECT #: 3140545.010/04				Analysis/Method Required ③ Total Metals + Hardness (200g) Dissolved Metals (200g) 14-dioxane (8260B 5.1M)						1 - HCL			
SITE LOCATION: Hanover, MD		P.O. #:										9 - TerraCore Kit			
SAMPLER(S): Shannon Burke		DW CERT #:										8 - Ascorbic Acid			
SAMPLER(S): Shannon Burke		DW CERT #:		7 - Sodium Thiosulfate		6 - ICE		5 - E624KIT		4 - NaOH					
SAMPLER(S): Shannon Burke		DW CERT #:		3 - HNO ₃		2 - H ₂ SO ₄		1 - HCL							
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Analysis/Method Required						Preservative Codes		
1	VSP-2	12/15/20	2:11:40	WW	2	G	X	X							Time 1140
2	VSP-3	12/15/20	2:11:50	WW	2	G	X	X							Time 1150
3	T-1200 Lead ER	12/15/20	2:11:55	WW	2	G	X	X							Time 1155
4	Effluent VSP-4	12/15/20	5:11:30	WW	5	G	X	X	X						Time 1130
5	TB-121520			W	2	-			X						
Relinquished By: (1) <i>Shannon Burke</i>		Date 12/15/20	Time 1422	Received By: <i>Ch Burke</i>	Requested TAT (One TAT per COC) <input checked="" type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input type="checkbox"/> Other				Ice Present: YES TB: 3.1°C						
Relinquished By: (2)		Date	Time	Received By:	STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER				Custody Seal: Cooler-Intact						
Relinquished By: (3)		Date	Time	Received By:	COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW				# Coolers: RLS Temp: 1.2-1.9°C						
Relinquished By: (4)		Date	Time	Received By:	EDD FORMAT TYPE				Shipping Carrier: Ch Burke						
					Special Instructions: Metals = Al, Cu, Fe, Pb, Ni, Zn Dissolved metals samples field filtered at time of collection.										

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 20121516

Client Name WSP USA - Herndon
Disposal Date 01/19/2021

Received By Thomas Wingate
Date Received 12/15/2020 02:22:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
Seal(s) Signed / Dated? Yes

Ice Present
Temp (deg C) 1.9
Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
Chain of Custody Yes

Sampler Name Shannon Burke
MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
Intact? Yes
Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 5
Total No. of Containers Received 13

Preservation

Total Metals (pH<2) Yes
Dissolved Metals, filtered within 15 minutes of collection (pH<2) Yes
Orthophosphorus, filtered within 15 minutes of collection N/A
Cyanides (pH>12) N/A
Sulfide (pH>9) N/A
TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
TOX, TKN, NH3, Total Phos (pH<2) N/A
VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
Do VOA vials have zero headspace? Yes
624 VOC (Rcvd at least one unpreserved VOA vial) N/A
524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

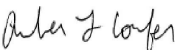
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 12/15/2020

PM Review and Approval:



Amber Confer

Date: 12/15/2020

APPENDIX

B RESIN CLEANING AND FOULANT ANALYSIS DOCUMENTATION

RESIN CLEANING EVALUATION



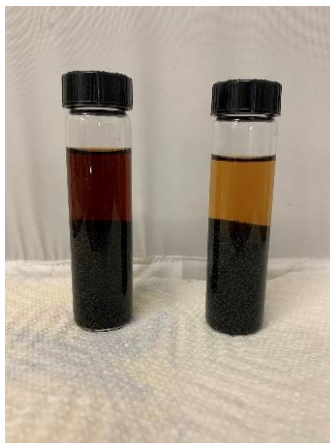
Emerging Compounds Treatment Technologies T1100 Resin Report

Introduction

Recirculation Technologies, LLC (RTI) has analyzed the **T1100** resin sample from Emerging Compounds Treatment Technologies (ECT2) in Rochester, New York: the before and after cleaning resin from a customer location in Baltimore, MD. The resin is Dow Ambersorb 560, a carbonaceous adsorbent used to remove selective organics from water solutions.

Analysis

Total Organic Carbon (TOC) analysis, in ppm, shows organic material present in the before cleaning resin sample. The cleaning process performed was a series of four (4) subsequent rounds of fresh 10% NaOH solution, each one hour long, in the presence of 140F heat with frequent mixing. This method was successful in removing organic material from the resin.



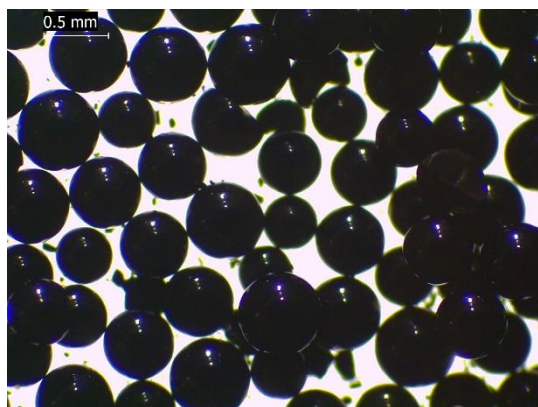
Resin Sample	VCS Color Scale ¹	Total Organic Carbon, ppm
T1100 Before Cleaning	15	414
T1100 After Cleaning	7	107
New Resin	3	34

¹ VCS is Varnish Color Scale, a qualitative method used to evaluate varnish. It has been co-opted to characterize natural organics present in solutions since many natural organics are highly colored. The scale extends from 0, which is water-white, to 18, which is opaque black.

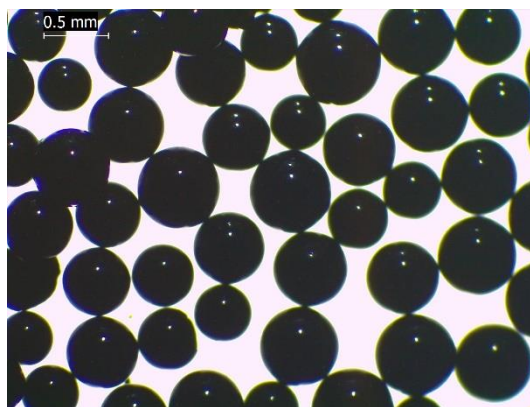
This represents a **74%** removal of organic material from before cleaning to after cleaning. This large fraction of the organic material was removed efficiently during the cleaning. The TOC

solutions eluted from the before and after resin samples showed a dark solution before (15 on the 0-18 scale) and a light solution after (7 on the same 0-18 scale), corresponding to significant organics present before and much less organics present after cleaning.

The before cleaning resin is surrounded by particulates and some resin fines. The particulates were removed during cleaning by RTI. This opens the flow of process solution through the entire resin bed, allowing for better treatment.



T1100 Before Cleaning Resin Sample



T1100 After Cleaning Resin Sample

Conclusion

The cleaning of the T1100 resin with a 10% NaOH solution removed a significant portion of the organic fouling contained in the resin. This method lowered the organic fouling, removed all particulate fouling, and will allow the resin to function optimally going forward.

For RTI,
Joel Shulman
Laboratory Manager
jshulman@rtiservices.com
215-682-7099 Ext. 09

March 12, 2020



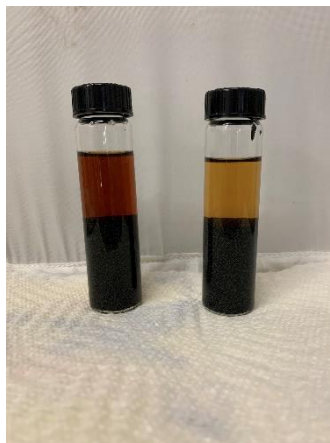
Emerging Compounds Treatment Technologies T1200 Resin Report

Introduction

Recirculation Technologies, LLC (RTI) has analyzed the **T1200** resin sample from Emerging Compounds Treatment Technologies (ECT2) in Rochester, New York: the before and after cleaning resin from a customer location in Baltimore, MD. The resin is Dow Ambersorb 560, a carbonaceous adsorbent used to remove selective organics from water solutions.

Analysis

Total Organic Carbon (TOC) analysis, in ppm, shows organic material present in the as received resin sample. The cleaning process performed was a series of four (4) subsequent rounds of fresh 10% NaOH solution, each one hour long, in the presence of 140F heat with frequent mixing. This method was successful in removing organic material from the resin.



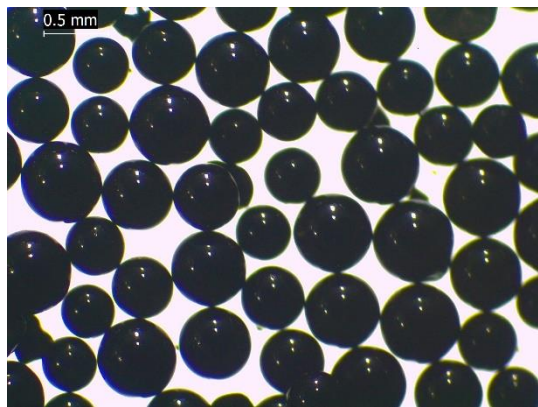
Resin Sample	VCS Color Scale ¹	Total Organic Carbon, ppm
Resin As Received	14	378
Resin After Cleaning	8	100
New Resin	3	34

¹ VCS is Varnish Color Scale, a qualitative method used to evaluate varnish. It has been co-opted to characterize natural organics present in solutions since many natural organics are highly colored. The scale extends from 0, which is water-white, to 18, which is opaque black.

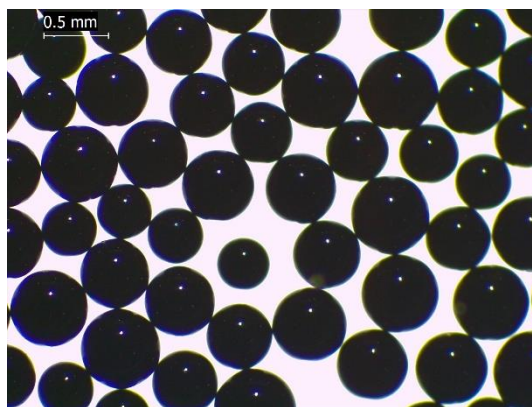
This represents a **73.6%** removal of organic material from before cleaning to after cleaning. This large fraction of the organic material was removed efficiently during the cleaning. The TOC

solutions eluted from the before and after resin samples showed a dark solution before (14 on the 0-18 scale) and a light solution after (8 on the same 0-18 scale), corresponding to significant organics present before and much less organics present after cleaning.

The before cleaning resin is surrounded by some particulates. The particulates were removed during cleaning by RTI. This opens the flow of process solution through the entire resin bed, allowing for better treatment.



T1200 Before Cleaning Resin Sample



T1200 After Cleaning Resin Sample

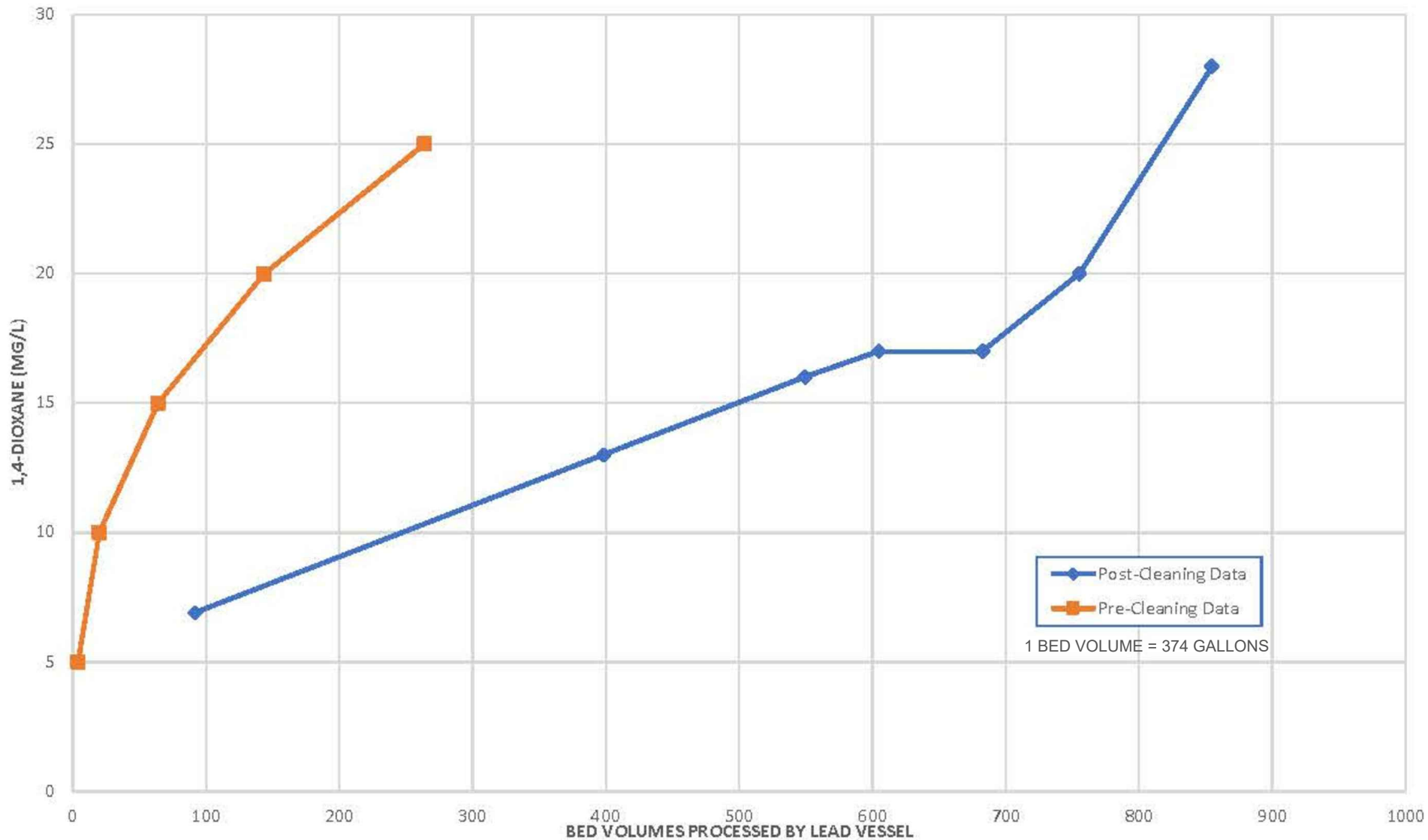
Conclusion

The cleaning of the T1200 resin with a 10% NaOH solution removed a significant portion of the organic fouling contained in the resin. This method lowered the organic fouling, removed all particulate fouling, and will allow the resin to function optimally going forward.

For RTI,
Joel Shulman
Laboratory Manager
jshulman@rtiservices.com
215-682-7099 Ext. 09

March 12, 2020

WASTE DISPOSAL MANIFEST AND BILLS OF LADING



NOTICE: THIS DRAWING HAS BEEN PREPARED UNDER THE DIRECTION OF A PROFESSIONAL. DO NOT ALTER THIS DOCUMENT IN ANY WAY WITHOUT THE WRITTEN CONSENT OF WSP USA INC.

THE ORIGINAL VERSION OF THIS DRAWING IS IN COLOR. BLACK AND WHITE COPIES MAY NOT ACCURATELY DEPICT CERTAIN INFORMATION.

A



WSP USA Inc.
13530 DULLES TECHNOLOGY DR
SUITE 300
HERNDON, VA 20171
TEL: +1 703.709.6500

Figure 1
DATA SHOWING 1,4-DIOXANE
BREAKTHROUGH OF TREATMENT RESIN

FORMER KOP-FLEX FACILITY SITE
HANOVER, MARYLAND

PREPARED FOR
EMERSUB 16 LLC
ST. LOUIS, MISSOURI

Drawn By: EGC

Checked:

Approved: *EGC* 7/28/2020

DWG Name: 314V1545.010-058

Project Name: Kop Flex
PSS Project No.: 20050113

May 15, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171

Reference: PSS Project No: **20050113**
Project Name: Kop Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/.4



Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20050113**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on June 5, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal

Laboratory Manager



Project Name: Kop Flex
PSS Project No.: 20050113

Project ID: 31401545.010/4

The following samples were received under chain of custody by Phase Separation Science (PSS) on 05/01/2020 at 01:00 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20050113-001	T-1100 Lead Effluent-1	WASTE WATER	04/27/20 15:00
20050113-002	T-1100 Lead Effluent-2	WASTE WATER	04/28/20 17:00
20050113-003	T-1100 Lead Effluent-3	WASTE WATER	04/29/20 06:00
20050113-004	T-1100 Lead Effluent-4	WASTE WATER	04/29/20 11:00
20050113-005	Trip Blank	WATER	05/01/20 13:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop Flex
PSS Project No.: 20050113

Sample ID: T-1100 Lead Effluent-1 **Date/Time Sampled: 04/27/2020 15:00** **PSS Sample ID: 20050113-001**
Matrix: WASTE WATER **Date/Time Received: 05/01/2020 13:00**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	6.9	ug/L	1.0		1	05/11/20	05/11/20 17:18	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	88	%	80-120		1	05/11/20	05/11/20 17:18	1045

Sample ID: T-1100 Lead Effluent-2 **Date/Time Sampled: 04/28/2020 17:00** **PSS Sample ID: 20050113-002**
Matrix: WASTE WATER **Date/Time Received: 05/01/2020 13:00**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	13	ug/L	1.0		1	05/11/20	05/11/20 17:40	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	88	%	80-120		1	05/11/20	05/11/20 17:40	1045

Sample ID: T-1100 Lead Effluent-3 **Date/Time Sampled: 04/29/2020 06:00** **PSS Sample ID: 20050113-003**
Matrix: WASTE WATER **Date/Time Received: 05/01/2020 13:00**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	16	ug/L	1.0		1	05/11/20	05/11/20 18:03	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	88	%	80-120		1	05/11/20	05/11/20 18:03	1045

Sample ID: T-1100 Lead Effluent-4 **Date/Time Sampled: 04/29/2020 11:00** **PSS Sample ID: 20050113-004**
Matrix: WASTE WATER **Date/Time Received: 05/01/2020 13:00**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	17	ug/L	1.0		1	05/11/20	05/11/20 18:25	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	85	%	80-120		1	05/11/20	05/11/20 18:25	1045

Certificate of Analysis

Project Name: Kop Flex
 PSS Project No.: 20050113

Sample ID: Trip Blank **Date/Time Sampled: 05/01/2020 13:00** **PSS Sample ID: 20050113-005**
Matrix: WATER **Date/Time Received: 05/01/2020 13:00**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	05/11/20	05/11/20 18:47	1045
Surrogate(s)	Recovery		Limits					
Toluene-D8	88	%	80-120		1	05/11/20	05/11/20 18:47	1045

Case Narrative

Project Name: Kop Flex

PSS Project No.: 20050113

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Received Trip Blanks that were not on the COC. Logged in for 1,4 dioxane by method 8260.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop Flex
PSS Project No.: 20050113

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SW-846 8260 B-Modified	T-1100 Lead Effluent-1	Initial	20050113-001	W	81467	174294	05/11/2020 12:50	05/11/2020 17:18
	T-1100 Lead Effluent-2	Initial	20050113-002	W	81467	174294	05/11/2020 12:50	05/11/2020 17:40
	T-1100 Lead Effluent-3	Initial	20050113-003	W	81467	174294	05/11/2020 12:50	05/11/2020 18:03
	T-1100 Lead Effluent-4	Initial	20050113-004	W	81467	174294	05/11/2020 12:50	05/11/2020 18:25
	Trip Blank	Initial	20050113-005	W	81467	174294	05/11/2020 12:50	05/11/2020 18:47
	81467-1-BKS	BKS	81467-1-BKS	W	81467	174294	05/11/2020 12:50	05/11/2020 14:42
	81467-1-BLK	BLK	81467-1-BLK	W	81467	174294	05/11/2020 12:50	05/11/2020 16:56
	81467-1-BSD	BSD	81467-1-BSD	W	81467	174294	05/11/2020 12:50	05/11/2020 15:04

Project Name Kop Flex
PSS Project No.: 20050113

Analytical Method: SW-846 8260 B-Modified

Seq Number: 174294

Matrix: Water

Prep Method: SW5030B

Date Prep: 05/11/20

MB Sample Id: 81467-1-BLK

LCS Sample Id: 81467-1-BKS

LCSD Sample Id: 81467-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	25.15	84	25.57	85	50-150	1	20	ug/L	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units			
Toluene-D8	89		89		90		80-120	%			

F = RPD exceeded the laboratory control limits
 X = Recovery of MS, MSD or both outside of QC Criteria
 H= Recovery of BS,BSD or both exceeded the laboratory control limits
 L = Recovery of BS,BSD or both below the laboratory control limits

**PHASE
SEPARATION
SCIENCE**

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

www.phaseonline.com ~ info@phaseonline.com

6630 Baltimore National Pike • Suite 103-A • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047

PSS CLIENT: WSP		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 20050113				PAGE 1 OF 1											
BILL TO (if different):		PHONE #: 703-709-6500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe															
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes HCl								Preservative Codes 1 - HCL 2 - H ₂ SO ₄ 3 - HNO ₃ 4 - NaOH 5 - E624KIT 6 - ICE 7 - Sodium Thiosulfate 8 - Ascorbic Acid 9 - TerraCore Kit					
PROJECT NAME: Kop Flex		PROJECT #: 31401545.010/04				Analysis/Method Required ③ <i>1,4-dioxane 8200B SIM</i>													
SITE LOCATION: Hanover, MD		P.O. #:																	
SAMPLER(S): Shannon Burke		DW CERT #:																	
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB													
1	T-1100 Lead Effluent-1	4/27/20	1500	WW	3	G	X												
2	T-1100 Lead Effluent-2	4/28/20	1700	WW	3	G	X												
3	T-1100 Lead Effluent-3	4/29/20	0600	WW	3	G	X												
4	T-1100 Lead Effluent-4	4/29/20	1100	WW	3	G	X												
	T-1100 Lead Effluent-5	4/29/20		WW	3	G	X												
	T-1100 Lead Effluent-6	4/29/20		WW	3	G	X												
Relinquished By: (1) <i>Shannon Burke</i>		Date 5/1/20	Time 6:10	Received By: <i>[Signature]</i>		Requested TAT (One TAT per COC) <input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> Other				Ice Present: PRES									
Relinquished By: (2) <i>[Signature]</i>		Date 5/1/20	Time 1300	Received By: <i>[Signature]</i>		STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER				# Coolers: 1 TB: 2.2°C Temp: 2.2 = 2.2°C									
Relinquished By: (3)		Date	Time	Received By:		COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW		Special Instructions: Standard 10-day TAT											
Relinquished By: (4)		Date	Time	Received By:		EDD FORMAT TYPE													

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop Flex
PSS Project No.: 20050113

Client Name WSP USA - Herndon
Disposal Date 06/05/2020

Received By Thomas Wingate
Date Received 05/01/2020 01:00:00 PM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? N/A
Seal(s) Signed / Dated? N/A

Ice Present
Temp (deg C) 2.3
Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
Chain of Custody Yes

Sampler Name Shannon Burke
MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
Intact? Yes
Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 5
Total No. of Containers Received 14

Preservation

Total Metals (pH<2) N/A
Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
Orthophosphorus, filtered within 15 minutes of collection N/A
Cyanides (pH>12) N/A
Sulfide (pH>9) N/A
TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
TOX, TKN, NH3, Total Phos (pH<2) N/A
VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
Do VOA vials have zero headspace? Yes
624 VOC (Rcvd at least one unpreserved VOA vial) N/A
524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Received Trip Blanks that were not on the COC. Logged in for 1,4 dioxane by method 8260.

Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 05/01/2020

PM Review and Approval:



Thomas Wingate

Date: 05/01/2020

Project Name: Kop-Flex
PSS Project No.: 20051204

May 27, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20051204**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20051204**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on June 16, 2020, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager

Project Name: Kop-Flex

PSS Project No.: 20051204

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 05/12/2020 at 10:35 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20051204-001	T-1100 Lead Effluent-5	WASTE WATER	05/11/20 14:30
20051204-002	T-1100 Lead Effluent-6	WASTE WATER	05/11/20 21:00
20051204-003	T-1100 Lead Effluent-7	WASTE WATER	05/12/20 07:00
20051204-004	TB-051120	WATER	05/11/20 00:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C Results Pending Final Confirmation.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND Not Detected at or above the reporting limit.
- RL PSS Reporting Limit.
- U Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
 State Certifications: MD 179, WV 303
 Regulated Soil Permit: P330-12-00268
 NSWG USCG Accepted Laboratory
 LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 20051204

Sample ID: T-1100 Lead Effluent-5 **Date/Time Sampled: 05/11/2020 14:30** **PSS Sample ID: 20051204-001**
Matrix: WASTE WATER **Date/Time Received: 05/12/2020 10:35**
1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	17	ug/L	1.0		1	05/20/20	05/20/20 16:53	1011
Surrogate(s)	Recovery		Limits					
Toluene-D8	101	%	80-120		1	05/20/20	05/20/20 16:53	1011

Sample ID: T-1100 Lead Effluent-6 **Date/Time Sampled: 05/11/2020 21:00** **PSS Sample ID: 20051204-002**
Matrix: WASTE WATER **Date/Time Received: 05/12/2020 10:35**
1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	20	ug/L	1.0		1	05/20/20	05/20/20 16:30	1011
Surrogate(s)	Recovery		Limits					
Toluene-D8	93	%	80-120		1	05/20/20	05/20/20 16:30	1011

Sample ID: T-1100 Lead Effluent-7 **Date/Time Sampled: 05/12/2020 07:00** **PSS Sample ID: 20051204-003**
Matrix: WASTE WATER **Date/Time Received: 05/12/2020 10:35**
1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	28	ug/L	1.0		1	05/20/20	05/20/20 16:08	1011
Surrogate(s)	Recovery		Limits					
Toluene-D8	97	%	80-120		1	05/20/20	05/20/20 16:08	1011

Sample ID: TB-051120 **Date/Time Sampled: 05/11/2020 00:00** **PSS Sample ID: 20051204-004**
Matrix: WATER **Date/Time Received: 05/12/2020 10:35**
1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	05/20/20	05/20/20 15:46	1011
Surrogate(s)	Recovery		Limits					
Toluene-D8	97	%	80-120		1	05/20/20	05/20/20 15:46	1011

Project Name: Kop-Flex

PSS Project No.: 20051204

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop-Flex
 PSS Project No.: 20051204

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SW-846 8260 B-Modified	T-1100 Lead Effluent-5	Initial	20051204-001	W	81620	174615	05/20/2020 10:16	05/20/2020 16:53
	T-1100 Lead Effluent-6	Initial	20051204-002	W	81620	174615	05/20/2020 10:16	05/20/2020 16:30
	T-1100 Lead Effluent-7	Initial	20051204-003	W	81620	174615	05/20/2020 10:16	05/20/2020 16:08
	TB-051120	Initial	20051204-004	W	81620	174615	05/20/2020 10:16	05/20/2020 15:46
	81620-1-BKS	BKS	81620-1-BKS	W	81620	174615	05/20/2020 10:16	05/20/2020 13:54
	81620-1-BLK	BLK	81620-1-BLK	W	81620	174615	05/20/2020 10:16	05/20/2020 15:23
	81620-1-BSD	BSD	81620-1-BSD	W	81620	174615	05/20/2020 10:16	05/20/2020 14:17

Project Name Kop-Flex
PSS Project No.: 20051204

Analytical Method: SW-846 8260 B-Modified

Seq Number: 174615

Matrix: Water

Prep Method: SW5030B

Date Prep: 05/20/20

MB Sample Id: 81620-1-BLK

LCS Sample Id: 81620-1-BKS

LCSD Sample Id: 81620-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	30.22	101	32.57	109	50-150	8	20	ug/L	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units			
Toluene-D8	93		98		99		80-120	%			

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits



SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

1 *CLIENT: <u>WSP</u> *OFFICE LOC. <u>Herndon, VA</u>		PSS Work Order #: <u>20051204</u>				PAGE <u>1</u> OF <u>1</u>																																																																																																																																																																																																																																																																																																																																																																																																																																			
*PROJECT MGR: <u>Eric Johnson</u> *PHONE NO.: <u>(703) 709-6500</u>		Matrix Codes: SW =Surface Wtr DW =Drinking Wtr GW =Ground Wtr WW =Waste Wtr O =Oil S =Soil L =Liquid SOL =Solid A =Air WI =Wipe																																																																																																																																																																																																																																																																																																																																																																																																																																							
EMAIL: <u>eric.johnson@wsp.com</u> FAX NO.: ()		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">No. CONTAINERS</th> <th rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">SAMPLE TYPE</th> <th rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Preservatives Used</th> <th colspan="10"></th> <th rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">REMARKS</th> </tr> <tr> <th colspan="10" style="text-align:center;">Analysis/Method Required</th> </tr> <tr> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">C = COMP</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">G = GRAB</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">③</td> <td colspan="10" style="text-align:center;">HCl</td> <td rowspan="2"></td> </tr> <tr> <td colspan="10" style="text-align:center;">* 1,4-dioxane (8260B SIM)</td> </tr> </table>						No. CONTAINERS	SAMPLE TYPE	Preservatives Used											REMARKS	Analysis/Method Required										C = COMP	G = GRAB	③	HCl											* 1,4-dioxane (8260B SIM)																																																																																																																																																																																																																																																																																																																																																																																											
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		DW COMPLIANCE? YES <input type="checkbox"/>		EDD FORMAT TYPE _____		STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER _____																																																																																																																																																																																																																																																																																																																																																																																																																																			

6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

The client (Client Name), by signing, or having client's agent sign, this "Sample Chain of Custody/Agreement Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary. * = REQUIRED

Sample Receipt Checklist

Project Name: Kop-Flex
 PSS Project No.: 20051204

Client Name WSP USA - Herndon
Disposal Date 06/16/2020

Received By Thomas Wingate
Date Received 05/12/2020 10:35:00 AM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
 Seal(s) Signed / Dated? Yes

Ice Present
 Temp (deg C) 1.1
 Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Shannon Burke
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 4
 Total No. of Containers Received 11

Preservation

Total Metals (pH<2) N/A
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) N/A
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) N/A
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

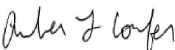
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 05/12/2020

PM Review and Approval:



Amber Confer
 Page 8 of 8

Date: 05/12/2020

POST-CLEANING 1,4-DIOXANE BREAKTHROUGH SAMPLING

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
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Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-2314-1

Client Project/Site: Former Kop-Flex Facility Site

For:

WSP USA Corp.
Attn: Environmental Accounts Payable
13530 Dulles Technology Drive
Suite 300
Herndon, Virginia 20171

Attn: Eric Johnson



Authorized for release by:
6/17/2020 1:55:53 PM

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Results relate only to the items tested and the sample(s) as received by the laboratory.

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Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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A handwritten signature in black ink, appearing to read "Hannah L. Cottman". The signature is written in a cursive style.

Hannah Cottman
Operations Support Specialist
6/17/2020 1:55:53 PM



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Definitions/Glossary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Job ID: 410-2314-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative 410-2314-1

Receipt

The samples were received on 5/14/2020 5:30 PM; the samples arrived in good condition, properly preserved, and where required, on ice. The temperatures of the 5 coolers at receipt time were 0.5°C, 0.7°C, 0.9°C, 1.4°C and 1.7°C

SUBCONTRACTING

The following analysis was subcontracted to ALS Environmental:
Subcontracted Analysis - Total Organic Carbon

Diesel Range Organics

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



Detection Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Client Sample ID: MW-01 **Lab Sample ID: 410-2314-1**

Sample Analysis Not Complete.

Client Sample ID: MW-27D **Lab Sample ID: 410-2314-2**

Sample Analysis Not Complete.

Client Sample ID: VSP-1D **Lab Sample ID: 410-2314-3**

Sample Analysis Not Complete.

Client Sample ID: VSP-1S **Lab Sample ID: 410-2314-4**

Sample Analysis Not Complete.

Client Sample ID: VSP-4 **Lab Sample ID: 410-2314-5**

Sample Analysis Not Complete.

Client Sample ID: T-1100 **Lab Sample ID: 410-2314-6**

Sample Analysis Not Complete.

Client Sample ID: VSP-100 **Lab Sample ID: 410-2314-7**

Sample Analysis Not Complete.

Client Sample ID: MW-100 **Lab Sample ID: 410-2314-8**

Sample Analysis Not Complete.

Client Sample ID: EB-051320 **Lab Sample ID: 410-2314-9**

Sample Analysis Not Complete.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC



Client Sample Results

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Client Sample ID: MW-01

Lab Sample ID: 410-2314-1

Date Collected: 05/14/20 10:18

Matrix: Water

Date Received: 05/14/20 17:30

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/20/20 21:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr) (1C)	87		50 - 150				05/20/20 08:54	05/20/20 21:30	1

Method: 8015C - Nonhalogenated Organics using GC/FID-Modified (DRO) Silica Gel Treatment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/26/20 22:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Capric Acid (Surr) (1C)	0.00005		0 - 1				05/20/20 08:54	05/26/20 22:36	1
<i>o</i> -terphenyl (Surr) (1C)	64		50 - 150				05/20/20 08:54	05/26/20 22:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<5.2		5.2		mg/L			05/18/20 16:16	1
SGT-HEM (TPH)	<5.2		5.2		mg/L			05/18/20 16:16	1

Client Sample ID: MW-27D

Lab Sample ID: 410-2314-2

Date Collected: 05/13/20 14:55

Matrix: Water

Date Received: 05/14/20 17:30

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	120		100		ug/L		05/20/20 08:54	05/20/20 21:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr) (1C)	88		50 - 150				05/20/20 08:54	05/20/20 21:52	1

Method: 8015C - Nonhalogenated Organics using GC/FID-Modified (DRO) Silica Gel Treatment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/26/20 22:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Capric Acid (Surr) (1C)	0.0002		0 - 1				05/20/20 08:54	05/26/20 22:59	1
<i>o</i> -terphenyl (Surr) (1C)	65		50 - 150				05/20/20 08:54	05/26/20 22:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<5.2		5.2		mg/L			05/18/20 16:16	1
SGT-HEM (TPH)	<5.2		5.2		mg/L			05/18/20 16:16	1

Client Sample ID: VSP-1D

Lab Sample ID: 410-2314-3

Date Collected: 05/14/20 10:00

Matrix: Water

Date Received: 05/14/20 17:30

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/20/20 22:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr) (1C)	88		50 - 150				05/20/20 08:54	05/20/20 22:15	1

Client Sample Results

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Client Sample ID: VSP-1D

Date Collected: 05/14/20 10:00

Date Received: 05/14/20 17:30

Lab Sample ID: 410-2314-3

Matrix: Water

Method: 8015C - Nonhalogenated Organics using GC/FID-Modified (DRO) Silica Gel Treatment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/26/20 23:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Capric Acid (Surr) (1C)	0.003		0 - 1				05/20/20 08:54	05/26/20 23:21	1
o-terphenyl (Surr) (1C)	64		50 - 150				05/20/20 08:54	05/26/20 23:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<5.4		5.4		mg/L			05/18/20 16:16	1
SGT-HEM (TPH)	<5.4		5.4		mg/L			05/18/20 16:16	1

Client Sample ID: VSP-1S

Date Collected: 05/14/20 10:25

Date Received: 05/14/20 17:30

Lab Sample ID: 410-2314-4

Matrix: Water

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/20/20 22:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-terphenyl (Surr) (1C)	83		50 - 150				05/20/20 08:54	05/20/20 22:38	1

Method: 8015C - Nonhalogenated Organics using GC/FID-Modified (DRO) Silica Gel Treatment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/26/20 23:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Capric Acid (Surr) (1C)	0.0002		0 - 1				05/20/20 08:54	05/26/20 23:44	1
o-terphenyl (Surr) (1C)	62		50 - 150				05/20/20 08:54	05/26/20 23:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<5.4		5.4		mg/L			05/18/20 16:16	1
SGT-HEM (TPH)	<5.4		5.4		mg/L			05/18/20 16:16	1

Client Sample ID: VSP-4

Date Collected: 05/14/20 09:10

Date Received: 05/14/20 17:30

Lab Sample ID: 410-2314-5

Matrix: Water

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/20/20 23:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-terphenyl (Surr) (1C)	82		50 - 150				05/20/20 08:54	05/20/20 23:00	1

Method: 8015C - Nonhalogenated Organics using GC/FID-Modified (DRO) Silica Gel Treatment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/27/20 00:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Capric Acid (Surr) (1C)	0.0001		0 - 1				05/20/20 08:54	05/27/20 00:07	1
o-terphenyl (Surr) (1C)	63		50 - 150				05/20/20 08:54	05/27/20 00:07	1

Eurofins Lancaster Laboratories Env, LLC

Client Sample Results

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Client Sample ID: VSP-4
Date Collected: 05/14/20 09:10
Date Received: 05/14/20 17:30

Lab Sample ID: 410-2314-5
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<5.2		5.2		mg/L			05/18/20 16:16	1
SGT-HEM (TPH)	<5.2		5.2		mg/L			05/18/20 16:16	1

Client Sample ID: T-1100
Date Collected: 05/14/20 09:35
Date Received: 05/14/20 17:30

Lab Sample ID: 410-2314-6
Matrix: Water

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/20/20 23:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-terphenyl (Surr) (1C)</i>	81		50 - 150				05/20/20 08:54	05/20/20 23:23	1

Method: 8015C - Nonhalogenated Organics using GC/FID-Modified (DRO) Silica Gel Treatment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/27/20 00:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Capric Acid (Surr) (1C)</i>	0.001		0 - 1				05/20/20 08:54	05/27/20 00:29	1
<i>o-terphenyl (Surr) (1C)</i>	63		50 - 150				05/20/20 08:54	05/27/20 00:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<5.4		5.4		mg/L			05/18/20 16:16	1
SGT-HEM (TPH)	<5.4		5.4		mg/L			05/18/20 16:16	1

Client Sample ID: VSP-100
Date Collected: 05/14/20 08:00
Date Received: 05/14/20 17:30

Lab Sample ID: 410-2314-7
Matrix: Water

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/20/20 23:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-terphenyl (Surr) (1C)</i>	83		50 - 150				05/20/20 08:54	05/20/20 23:46	1

Method: 8015C - Nonhalogenated Organics using GC/FID-Modified (DRO) Silica Gel Treatment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/27/20 00:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Capric Acid (Surr) (1C)</i>	0.003		0 - 1				05/20/20 08:54	05/27/20 00:52	1
<i>o-terphenyl (Surr) (1C)</i>	67		50 - 150				05/20/20 08:54	05/27/20 00:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<5.3		5.3		mg/L			05/21/20 18:53	1
SGT-HEM (TPH)	<5.3		5.3		mg/L			05/21/20 18:53	1

Client Sample Results

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Client Sample ID: MW-100

Lab Sample ID: 410-2314-8

Date Collected: 05/13/20 08:00

Matrix: Water

Date Received: 05/14/20 17:30

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	110		100		ug/L		05/20/20 08:54	05/21/20 00:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr) (1C)	82		50 - 150				05/20/20 08:54	05/21/20 00:08	1

Method: 8015C - Nonhalogenated Organics using GC/FID-Modified (DRO) Silica Gel Treatment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/27/20 01:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Capric Acid (Surr) (1C)	0.003		0 - 1				05/20/20 08:54	05/27/20 01:15	1
<i>o</i> -terphenyl (Surr) (1C)	67		50 - 150				05/20/20 08:54	05/27/20 01:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<5.2		5.2		mg/L			05/18/20 16:16	1
SGT-HEM (TPH)	<5.2		5.2		mg/L			05/18/20 16:16	1

Client Sample ID: EB-051320

Lab Sample ID: 410-2314-9

Date Collected: 05/13/20 16:45

Matrix: Water

Date Received: 05/14/20 17:30

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/21/20 00:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr) (1C)	84		50 - 150				05/20/20 08:54	05/21/20 00:31	1

Method: 8015C - Nonhalogenated Organics using GC/FID-Modified (DRO) Silica Gel Treatment

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/27/20 01:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Capric Acid (Surr) (1C)	0.003		0 - 1				05/20/20 08:54	05/27/20 01:37	1
<i>o</i> -terphenyl (Surr) (1C)	72		50 - 150				05/20/20 08:54	05/27/20 01:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<5.6		5.6		mg/L			05/21/20 18:53	1
SGT-HEM (TPH)	<5.6		5.6		mg/L			05/21/20 18:53	1

Surrogate Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OTP1 (50-150)
410-2314-1	MW-01	87
410-2314-2	MW-27D	88
410-2314-3	VSP-1D	88
410-2314-4	VSP-1S	83
410-2314-5	VSP-4	82
410-2314-6	T-1100	81
410-2314-7	VSP-100	83
410-2314-8	MW-100	82
410-2314-9	EB-051320	84
LCS 410-8859/3-A	Lab Control Sample	88
LCSD 410-8859/6-A	Lab Control Sample Dup	81
MB 410-8859/1-A	Method Blank	83

Surrogate Legend

OTP = o- terphenyl (Surr) (1C)

Method: 8015C - Nonhalogenated Organics using GC/FID-Modified (DRO) Silica Gel Treatment

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	NDA1 (0-1)	OTP1 (50-150)
410-2314-1	MW-01	0.00005	64
410-2314-2	MW-27D	0.0002	65
410-2314-3	VSP-1D	0.003	64
410-2314-4	VSP-1S	0.0002	62
410-2314-5	VSP-4	0.0001	63
410-2314-6	T-1100	0.001	63
410-2314-7	VSP-100	0.003	67
410-2314-8	MW-100	0.003	67
410-2314-9	EB-051320	0.003	72
LCS 410-8859/3-B	Lab Control Sample	0.2	64
LCSD 410-8859/6-B	Lab Control Sample Dup	0.2	77
MB 410-8859/1-B	Method Blank	0.002	64

Surrogate Legend

NDA = Capric Acid (Surr) (1C)

OTP = o- terphenyl (Surr) (1C)

QC Sample Results

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Lab Sample ID: MB 410-8859/1-A
Matrix: Water
Analysis Batch: 9047

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8859

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/20/20 20:22	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr) (1C)	83		50 - 150				05/20/20 08:54	05/20/20 20:22	1

Lab Sample ID: LCS 410-8859/3-A
Matrix: Water
Analysis Batch: 9047

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8859

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
DRO (C10-C28) (1C)	600	392		ug/L		65	20 - 118	
Surrogate	%Recovery	LCS Qualifier	Limits					
<i>o</i> -terphenyl (Surr) (1C)	88		50 - 150					

Lab Sample ID: LCSD 410-8859/6-A
Matrix: Water
Analysis Batch: 9047

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 8859

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)	600	367		ug/L		61	20 - 118	7	20
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -terphenyl (Surr) (1C)	81		50 - 150						

Method: 8015C - Nonhalogenated Organics using GC/FID-Modified (DRO) Silica Gel Treatment

Lab Sample ID: MB 410-8859/1-B
Matrix: Water
Analysis Batch: 9278

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8859

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28) (1C)	<100		100		ug/L		05/20/20 08:54	05/26/20 21:28	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Capric Acid (Surr) (1C)	0.002		0 - 1				05/20/20 08:54	05/26/20 21:28	1
<i>o</i> -terphenyl (Surr) (1C)	64		50 - 150				05/20/20 08:54	05/26/20 21:28	1

Lab Sample ID: LCS 410-8859/3-B
Matrix: Water
Analysis Batch: 9278

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8859

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
DRO (C10-C28) (1C)	600	289		ug/L		48	12 - 115	
Surrogate	%Recovery	LCS Qualifier	Limits					
Capric Acid (Surr) (1C)	0.2		0 - 1					

Eurofins Lancaster Laboratories Env, LLC

QC Sample Results

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Method: 8015C - Nonhalogenated Organics using GC/FID-Modified (DRO) Silica Gel Treatment (Continued)

Lab Sample ID: LCS 410-8859/3-B
Matrix: Water
Analysis Batch: 9278

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8859

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>o-terphenyl (Surr) (1C)</i>	64		50 - 150

Lab Sample ID: LCSD 410-8859/6-B
Matrix: Water
Analysis Batch: 9278

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 8859

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
DRO (C10-C28) (1C)	600	349		ug/L		58	12 - 115	19	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>Capric Acid (Surr) (1C)</i>	0.2		0 - 1
<i>o-terphenyl (Surr) (1C)</i>	77		50 - 150

Method: 1664B - HEM and SGT-HEM

Lab Sample ID: MB 410-8681/1
Matrix: Water
Analysis Batch: 8681

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<5.0		5.0		mg/L			05/18/20 16:16	1
SGT-HEM (TPH)	<5.0		5.0		mg/L			05/18/20 16:16	1

Lab Sample ID: LCS 410-8681/2
Matrix: Water
Analysis Batch: 8681

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM (Oil & Grease)	40.0	36.2		mg/L		91	78 - 114
SGT-HEM (TPH)	20.0	15.5		mg/L		78	64 - 132

Lab Sample ID: LCSD 410-8681/3
Matrix: Water
Analysis Batch: 8681

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
HEM (Oil & Grease)	40.0	33.9		mg/L		85	78 - 114	7	13
SGT-HEM (TPH)	20.0	14.7		mg/L		74	64 - 132	5	23

Lab Sample ID: 410-2314-6 MS
Matrix: Water
Analysis Batch: 8681

Client Sample ID: T-1100
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM (Oil & Grease)	<5.4		43.5	37.7		mg/L		87	78 - 114
SGT-HEM (TPH)	<5.4		21.7	17.2		mg/L		79	64 - 132

QC Sample Results

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Method: 1664B - HEM and SGT-HEM (Continued)

Lab Sample ID: MB 410-9067/1
Matrix: Water
Analysis Batch: 9067

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<5.0		5.0		mg/L			05/21/20 18:53	1
SGT-HEM (TPH)	<5.0		5.0		mg/L			05/21/20 18:53	1

Lab Sample ID: LCS 410-9067/2
Matrix: Water
Analysis Batch: 9067

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM (Oil & Grease)	40.0	40.0		mg/L		100	78 - 114
SGT-HEM (TPH)	20.0	16.8		mg/L		84	64 - 132

Lab Sample ID: LCSD 410-9067/3
Matrix: Water
Analysis Batch: 9067

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
HEM (Oil & Grease)	40.0	38.9		mg/L		97	78 - 114	3	13
SGT-HEM (TPH)	20.0	18.3		mg/L		92	64 - 132	9	23

Lab Sample ID: 410-2314-9 MS
Matrix: Water
Analysis Batch: 9067

Client Sample ID: EB-051320
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM (Oil & Grease)	<5.6		44.4	41.7		mg/L		94	78 - 114
SGT-HEM (TPH)	<5.6		22.2	19.2		mg/L		87	64 - 132

QC Association Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

GC Semi VOA

Prep Batch: 8859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-2314-1	MW-01	Total/NA	Water	3510C	
410-2314-1	MW-01	Total/NA	Water	3510C	
410-2314-2	MW-27D	Total/NA	Water	3510C	
410-2314-2	MW-27D	Total/NA	Water	3510C	
410-2314-3	VSP-1D	Total/NA	Water	3510C	
410-2314-3	VSP-1D	Total/NA	Water	3510C	
410-2314-4	VSP-1S	Total/NA	Water	3510C	
410-2314-4	VSP-1S	Total/NA	Water	3510C	
410-2314-5	VSP-4	Total/NA	Water	3510C	
410-2314-5	VSP-4	Total/NA	Water	3510C	
410-2314-6	T-1100	Total/NA	Water	3510C	
410-2314-6	T-1100	Total/NA	Water	3510C	
410-2314-7	VSP-100	Total/NA	Water	3510C	
410-2314-7	VSP-100	Total/NA	Water	3510C	
410-2314-8	MW-100	Total/NA	Water	3510C	
410-2314-8	MW-100	Total/NA	Water	3510C	
410-2314-9	EB-051320	Total/NA	Water	3510C	
410-2314-9	EB-051320	Total/NA	Water	3510C	
MB 410-8859/1-A	Method Blank	Total/NA	Water	3510C	
MB 410-8859/1-B	Method Blank	Total/NA	Water	3510C	
LCS 410-8859/3-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 410-8859/3-B	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-8859/6-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 410-8859/6-B	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 9047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-2314-1	MW-01	Total/NA	Water	8015C	8859
410-2314-2	MW-27D	Total/NA	Water	8015C	8859
410-2314-3	VSP-1D	Total/NA	Water	8015C	8859
410-2314-4	VSP-1S	Total/NA	Water	8015C	8859
410-2314-5	VSP-4	Total/NA	Water	8015C	8859
410-2314-6	T-1100	Total/NA	Water	8015C	8859
410-2314-7	VSP-100	Total/NA	Water	8015C	8859
410-2314-8	MW-100	Total/NA	Water	8015C	8859
410-2314-9	EB-051320	Total/NA	Water	8015C	8859
MB 410-8859/1-A	Method Blank	Total/NA	Water	8015C	8859
LCS 410-8859/3-A	Lab Control Sample	Total/NA	Water	8015C	8859
LCSD 410-8859/6-A	Lab Control Sample Dup	Total/NA	Water	8015C	8859

Cleanup Batch: 9095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-2314-1	MW-01	Total/NA	Water	3630C	8859
410-2314-2	MW-27D	Total/NA	Water	3630C	8859
410-2314-3	VSP-1D	Total/NA	Water	3630C	8859
410-2314-4	VSP-1S	Total/NA	Water	3630C	8859
410-2314-5	VSP-4	Total/NA	Water	3630C	8859
410-2314-6	T-1100	Total/NA	Water	3630C	8859
410-2314-7	VSP-100	Total/NA	Water	3630C	8859
410-2314-8	MW-100	Total/NA	Water	3630C	8859
410-2314-9	EB-051320	Total/NA	Water	3630C	8859

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QC Association Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

GC Semi VOA (Continued)

Cleanup Batch: 9095 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-8859/1-B	Method Blank	Total/NA	Water	3630C	8859
LCS 410-8859/3-B	Lab Control Sample	Total/NA	Water	3630C	8859
LCSD 410-8859/6-B	Lab Control Sample Dup	Total/NA	Water	3630C	8859

Analysis Batch: 9278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-2314-1	MW-01	Total/NA	Water	8015C	9095
410-2314-2	MW-27D	Total/NA	Water	8015C	9095
410-2314-3	VSP-1D	Total/NA	Water	8015C	9095
410-2314-4	VSP-1S	Total/NA	Water	8015C	9095
410-2314-5	VSP-4	Total/NA	Water	8015C	9095
410-2314-6	T-1100	Total/NA	Water	8015C	9095
410-2314-7	VSP-100	Total/NA	Water	8015C	9095
410-2314-8	MW-100	Total/NA	Water	8015C	9095
410-2314-9	EB-051320	Total/NA	Water	8015C	9095
MB 410-8859/1-B	Method Blank	Total/NA	Water	8015C	9095
LCS 410-8859/3-B	Lab Control Sample	Total/NA	Water	8015C	9095
LCSD 410-8859/6-B	Lab Control Sample Dup	Total/NA	Water	8015C	9095

General Chemistry

Analysis Batch: 8681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-2314-1	MW-01	Total/NA	Water	1664B	
410-2314-2	MW-27D	Total/NA	Water	1664B	
410-2314-3	VSP-1D	Total/NA	Water	1664B	
410-2314-4	VSP-1S	Total/NA	Water	1664B	
410-2314-5	VSP-4	Total/NA	Water	1664B	
410-2314-6	T-1100	Total/NA	Water	1664B	
410-2314-8	MW-100	Total/NA	Water	1664B	
MB 410-8681/1	Method Blank	Total/NA	Water	1664B	
LCS 410-8681/2	Lab Control Sample	Total/NA	Water	1664B	
LCSD 410-8681/3	Lab Control Sample Dup	Total/NA	Water	1664B	
410-2314-6 MS	T-1100	Total/NA	Water	1664B	

Analysis Batch: 9067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-2314-7	VSP-100	Total/NA	Water	1664B	
410-2314-9	EB-051320	Total/NA	Water	1664B	
MB 410-9067/1	Method Blank	Total/NA	Water	1664B	
LCS 410-9067/2	Lab Control Sample	Total/NA	Water	1664B	
LCSD 410-9067/3	Lab Control Sample Dup	Total/NA	Water	1664B	
410-2314-9 MS	EB-051320	Total/NA	Water	1664B	

Lab Chronicle

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Client Sample ID: MW-01

Date Collected: 05/14/20 10:18

Date Received: 05/14/20 17:30

Lab Sample ID: 410-2314-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Analysis	8015C		1	9047	05/20/20 21:30	IUSB	ELLE
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Cleanup	3630C			9095	05/22/20 05:34	UKQ8	ELLE
Total/NA	Analysis	8015C		1	9278	05/26/20 22:36	KP5X	ELLE
Total/NA	Analysis	1664B		1	8681	05/18/20 16:16	QT6L	ELLE

Client Sample ID: MW-27D

Date Collected: 05/13/20 14:55

Date Received: 05/14/20 17:30

Lab Sample ID: 410-2314-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Analysis	8015C		1	9047	05/20/20 21:52	IUSB	ELLE
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Cleanup	3630C			9095	05/22/20 05:34	UKQ8	ELLE
Total/NA	Analysis	8015C		1	9278	05/26/20 22:59	KP5X	ELLE
Total/NA	Analysis	1664B		1	8681	05/18/20 16:16	QT6L	ELLE

Client Sample ID: VSP-1D

Date Collected: 05/14/20 10:00

Date Received: 05/14/20 17:30

Lab Sample ID: 410-2314-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Analysis	8015C		1	9047	05/20/20 22:15	IUSB	ELLE
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Cleanup	3630C			9095	05/22/20 05:34	UKQ8	ELLE
Total/NA	Analysis	8015C		1	9278	05/26/20 23:21	KP5X	ELLE
Total/NA	Analysis	1664B		1	8681	05/18/20 16:16	QT6L	ELLE

Client Sample ID: VSP-1S

Date Collected: 05/14/20 10:25

Date Received: 05/14/20 17:30

Lab Sample ID: 410-2314-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Analysis	8015C		1	9047	05/20/20 22:38	IUSB	ELLE
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Cleanup	3630C			9095	05/22/20 05:34	UKQ8	ELLE
Total/NA	Analysis	8015C		1	9278	05/26/20 23:44	KP5X	ELLE
Total/NA	Analysis	1664B		1	8681	05/18/20 16:16	QT6L	ELLE

Lab Chronicle

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Client Sample ID: VSP-4

Date Collected: 05/14/20 09:10

Date Received: 05/14/20 17:30

Lab Sample ID: 410-2314-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Analysis	8015C		1	9047	05/20/20 23:00	IUSB	ELLE
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Cleanup	3630C			9095	05/22/20 05:34	UKQ8	ELLE
Total/NA	Analysis	8015C		1	9278	05/27/20 00:07	KP5X	ELLE
Total/NA	Analysis	1664B		1	8681	05/18/20 16:16	QT6L	ELLE

Client Sample ID: T-1100

Date Collected: 05/14/20 09:35

Date Received: 05/14/20 17:30

Lab Sample ID: 410-2314-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Analysis	8015C		1	9047	05/20/20 23:23	IUSB	ELLE
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Cleanup	3630C			9095	05/22/20 05:34	UKQ8	ELLE
Total/NA	Analysis	8015C		1	9278	05/27/20 00:29	KP5X	ELLE
Total/NA	Analysis	1664B		1	8681	05/18/20 16:16	QT6L	ELLE

Client Sample ID: VSP-100

Date Collected: 05/14/20 08:00

Date Received: 05/14/20 17:30

Lab Sample ID: 410-2314-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Analysis	8015C		1	9047	05/20/20 23:46	IUSB	ELLE
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Cleanup	3630C			9095	05/22/20 05:34	UKQ8	ELLE
Total/NA	Analysis	8015C		1	9278	05/27/20 00:52	KP5X	ELLE
Total/NA	Analysis	1664B		1	9067	05/21/20 18:53	QT6L	ELLE

Client Sample ID: MW-100

Date Collected: 05/13/20 08:00

Date Received: 05/14/20 17:30

Lab Sample ID: 410-2314-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Analysis	8015C		1	9047	05/21/20 00:08	IUSB	ELLE
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Cleanup	3630C			9095	05/22/20 05:34	UKQ8	ELLE
Total/NA	Analysis	8015C		1	9278	05/27/20 01:15	KP5X	ELLE
Total/NA	Analysis	1664B		1	8681	05/18/20 16:16	QT6L	ELLE

Lab Chronicle

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Client Sample ID: EB-051320

Lab Sample ID: 410-2314-9

Date Collected: 05/13/20 16:45

Matrix: Water

Date Received: 05/14/20 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Analysis	8015C		1	9047	05/21/20 00:31	IUSB	ELLE
Total/NA	Prep	3510C			8859	05/20/20 08:54	I5BW	ELLE
Total/NA	Cleanup	3630C			9095	05/22/20 05:34	UKQ8	ELLE
Total/NA	Analysis	8015C		1	9278	05/27/20 01:37	KP5X	ELLE
Total/NA	Analysis	1664B		1	9067	05/21/20 18:53	QT6L	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Method Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Method	Method Description	Protocol	Laboratory
8015C	Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)	SW846	ELLE
8015C	Nonhalogenated Organics using GC/FID-Modified (DRO) Silica Gel Treatment	EPA	ELLE
1664B	HEM and SGT-HEM	1664B	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3630C	Silica Gel Cleanup	SW846	ELLE

Protocol References:

1664B = EPA-821-98-002

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Sample Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-2314-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-2314-1	MW-01	Water	05/14/20 10:18	05/14/20 17:30	
410-2314-2	MW-27D	Water	05/13/20 14:55	05/14/20 17:30	
410-2314-3	VSP-1D	Water	05/14/20 10:00	05/14/20 17:30	
410-2314-4	VSP-1S	Water	05/14/20 10:25	05/14/20 17:30	
410-2314-5	VSP-4	Water	05/14/20 09:10	05/14/20 17:30	
410-2314-6	T-1100	Water	05/14/20 09:35	05/14/20 17:30	
410-2314-7	VSP-100	Water	05/14/20 08:00	05/14/20 17:30	
410-2314-8	MW-100	Water	05/13/20 08:00	05/14/20 17:30	
410-2314-9	EB-051320	Water	05/13/20 16:45	05/14/20 17:30	



June 16, 2020

ENV Subcontracting
Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17601

Certificate of Analysis

Project Name: 2020-TOC IN WATER	Workorder: 3105359
Purchase Order:	Workorder ID: 31401545.01

Dear ENV Subcontracting:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, May 26, 2020.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Sarah S Leung (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

Ms. Sarah S Leung
Project Coordinator

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

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SAMPLE SUMMARY

Workorder: 3105359 31401545.01

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3105359001	MW-01 GW	Water	5/21/2020 13:00	5/26/2020 09:15	Collected by Client
3105359002	MW-01 FA	Water	5/21/2020 13:10	5/26/2020 09:15	Collected by Client
3105359003	MW-01 HA	Water	5/21/2020 13:20	5/26/2020 09:15	Collected by Client
3105359004	MW-27D GW	Water	5/21/2020 13:30	5/26/2020 09:15	Collected by Client
3105359005	MW-27D FA	Water	5/21/2020 13:40	5/26/2020 09:15	Collected by Client
3105359006	MW-27D HA	Water	5/21/2020 13:50	5/26/2020 09:15	Collected by Client
3105359007	VSP-1D GW	Water	5/21/2020 14:00	5/26/2020 09:15	Collected by Client
3105359008	VSP-1D FA	Water	5/21/2020 14:10	5/26/2020 09:15	Collected by Client
3105359009	VSP-1D HA	Water	5/21/2020 14:20	5/26/2020 09:15	Collected by Client
3105359010	VSP-4 GW	Water	5/21/2020 15:00	5/26/2020 09:15	Collected by Client
3105359011	VSP-4 FA	Water	5/21/2020 15:10	5/26/2020 09:15	Collected by Client
3105359012	VSP-4 HA	Water	5/21/2020 15:20	5/26/2020 09:15	Collected by Client
3105359013	VSP-1S GW	Water	5/21/2020 14:30	5/26/2020 09:15	Collected by Client
3105359014	VSP-1S FA	Water	5/21/2020 14:40	5/26/2020 09:15	Collected by Client
3105359015	VSP-1S HA	Water	5/21/2020 14:50	5/26/2020 09:15	Collected by Client
3105359016	T-1100 GW	Water	5/21/2020 15:30	5/26/2020 09:15	Collected by Client
3105359017	T-1100 FA	Water	5/21/2020 15:40	5/26/2020 09:15	Collected by Client
3105359018	T-1100 HA	Water	5/21/2020 15:50	5/26/2020 09:15	Collected by Client
3105359019	MW100 HA	Water	5/21/2020 16:50	5/26/2020 09:15	Collected by Client
3105359020	MW100 GW	Water	5/21/2020 16:30	5/26/2020 09:15	Collected by Client
3105359021	MW100 FA	Water	5/21/2020 16:40	5/26/2020 09:15	Collected by Client
3105359022	VSP-100 GW	Water	5/21/2020 16:10	5/26/2020 09:15	Collected by Client
3105359023	VSP-100 HA	Water	5/21/2020 16:20	5/26/2020 09:15	Collected by Client
3105359024	VSP-100 FA	Water	5/21/2020 16:10	5/26/2020 09:15	Collected by Client

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SAMPLE SUMMARY

Workorder: 3105359 31401545.01

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359001** Date Collected: 5/21/2020 13:00 Matrix: Water
 Sample ID: **MW-01 GW** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	0.91		mg/L	0.50	0.18	SM5310B-2011		6/10/20 23:10	PAG	A



Ms. Sarah S Leung
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359002** Date Collected: 5/21/2020 13:10 Matrix: Water
 Sample ID: **MW-01 FA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	1.7		mg/L	0.50	0.18	SM5310B-2011		6/10/20 23:10	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359003** Date Collected: 5/21/2020 13:20 Matrix: Water
 Sample ID: **MW-01 HA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	0.23J	J	mg/L	0.50	0.18	SM5310B-2011		6/10/20 23:10	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359004** Date Collected: 5/21/2020 13:30 Matrix: Water
 Sample ID: **MW-27D GW** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	0.83		mg/L	0.50	0.18	SM5310B-2011		6/11/20 04:09	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359005** Date Collected: 5/21/2020 13:40 Matrix: Water
 Sample ID: **MW-27D FA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	1.7		mg/L	0.50	0.18	SM5310B-2011		6/11/20 04:09	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359006** Date Collected: 5/21/2020 13:50 Matrix: Water
 Sample ID: **MW-27D HA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	0.79		mg/L	0.50	0.18	SM5310B-2011		6/11/20 04:09	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359007** Date Collected: 5/21/2020 14:00 Matrix: Water
 Sample ID: **VSP-1D GW** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	0.61		mg/L	0.50	0.18	SM5310B-2011		6/11/20 04:09	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359008** Date Collected: 5/21/2020 14:10 Matrix: Water
 Sample ID: **VSP-1D FA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	2.0		mg/L	0.50	0.18	SM5310B-2011		6/11/20 04:09	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359009** Date Collected: 5/21/2020 14:20 Matrix: Water
 Sample ID: **VSP-1D HA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	0.66		mg/L	0.50	0.18	SM5310B-2011		6/11/20 04:09	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359010** Date Collected: 5/21/2020 15:00 Matrix: Water
 Sample ID: **VSP-4 GW** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	6.6		mg/L	0.50	0.18	SM5310B-2011		6/11/20 04:09	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359011** Date Collected: 5/21/2020 15:10 Matrix: Water
 Sample ID: **VSP-4 FA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	0.88		mg/L	0.50	0.18	SM5310B-2011		6/11/20 04:09	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359012** Date Collected: 5/21/2020 15:20 Matrix: Water
 Sample ID: **VSP-4 HA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	8.7		mg/L	1.0	0.37	SM5310B-2011		6/15/20 21:16	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359013** Date Collected: 5/21/2020 14:30 Matrix: Water
 Sample ID: **VSP-1S GW** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	1.3		mg/L	0.50	0.18	SM5310B-2011		6/10/20 23:10	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359014** Date Collected: 5/21/2020 14:40 Matrix: Water
 Sample ID: **VSP-1S FA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	2.2		mg/L	0.50	0.18	SM5310B-2011		6/11/20 09:01	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359015** Date Collected: 5/21/2020 14:50 Matrix: Water
 Sample ID: **VSP-1S HA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	0.66		mg/L	0.50	0.18	SM5310B-2011		6/11/20 09:01	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359016** Date Collected: 5/21/2020 15:30 Matrix: Water
 Sample ID: **T-1100 GW** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	0.24J	J	mg/L	0.50	0.18	SM5310B-2011		6/11/20 09:01	PAG	A



Ms. Sarah S Leung
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359017** Date Collected: 5/21/2020 15:40 Matrix: Water
 Sample ID: **T-1100 FA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	1.6		mg/L	0.50	0.18	SM5310B-2011		6/11/20 09:01	PAG	A



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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
 State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359018** Date Collected: 5/21/2020 15:50 Matrix: Water
 Sample ID: **T-1100 HA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	0.33J	J	mg/L	0.50	0.18	SM5310B-2011		6/11/20 09:01	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359019** Date Collected: 5/21/2020 16:50 Matrix: Water
 Sample ID: **MW100 HA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	0.20J	J	mg/L	0.50	0.18	SM5310B-2011		6/11/20 09:01	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359020** Date Collected: 5/21/2020 16:30 Matrix: Water
 Sample ID: **MW100 GW** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	1.3		mg/L	0.50	0.18	SM5310B-2011		6/11/20 09:01	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359021** Date Collected: 5/21/2020 16:40 Matrix: Water
 Sample ID: **MW100 FA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	1.8		mg/L	0.50	0.18	SM5310B-2011		6/11/20 09:01	PAG	A



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ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359022** Date Collected: 5/21/2020 16:10 Matrix: Water
 Sample ID: **VSP-100 GW** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	0.50		mg/L	0.50	0.18	SM5310B-2011		6/11/20 09:01	PAG	A



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 State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359023** Date Collected: 5/21/2020 16:20 Matrix: Water
 Sample ID: **VSP-100 HA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	0.33J	J	mg/L	0.50	0.18	SM5310B-2011		6/11/20 13:28	PAG	A



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 State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3105359 31401545.01

Lab ID: **3105359024** Date Collected: 5/21/2020 16:10 Matrix: Water
 Sample ID: **VSP-100 FA** Date Received: 5/26/2020 09:15

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY										
Total Organic Carbon (TOC)	1.5		mg/L	0.50	0.18	SM5310B-2011		6/11/20 13:28	PAG	A



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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3105359 31401545.01

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3105359001	MW-01 GW	SM5310B-2011		
3105359002	MW-01 FA	SM5310B-2011		
3105359003	MW-01 HA	SM5310B-2011		
3105359004	MW-27D GW	SM5310B-2011		
3105359005	MW-27D FA	SM5310B-2011		
3105359006	MW-27D HA	SM5310B-2011		
3105359007	VSP-1D GW	SM5310B-2011		
3105359008	VSP-1D FA	SM5310B-2011		
3105359009	VSP-1D HA	SM5310B-2011		
3105359010	VSP-4 GW	SM5310B-2011		
3105359011	VSP-4 FA	SM5310B-2011		
3105359012	VSP-4 HA	SM5310B-2011		
3105359013	VSP-1S GW	SM5310B-2011		
3105359014	VSP-1S FA	SM5310B-2011		
3105359015	VSP-1S HA	SM5310B-2011		
3105359016	T-1100 GW	SM5310B-2011		
3105359017	T-1100 FA	SM5310B-2011		
3105359018	T-1100 HA	SM5310B-2011		
3105359019	MW100 HA	SM5310B-2011		
3105359020	MW100 GW	SM5310B-2011		
3105359021	MW100 FA	SM5310B-2011		
3105359022	VSP-100 GW	SM5310B-2011		
3105359023	VSP-100 HA	SM5310B-2011		
3105359024	VSP-100 FA	SM5310B-2011		

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F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /
SAMPLER. INSTRUCTIONS ON THE BACK.

Generated by ALS



COC #:
ALSI Quot: 3105359*

Client Name: Eurofins Lancaster Laboratories Environmental
 Address: 2425 New Holland Pike
 Lancaster, PA 17601
 Contact: Hannah Coltrane
 Phone#: 717-556-7383
 Project Name#: 31401545.01
 Bill To: Same
 TAT: Normal-Standard TAT is 10-12 business days.
 Rush-Subject to ALS approval and surcharges.
 Date Required: _____ Approved By: _____
 Email? -Y -N Email: Subcontracting@EurofinsUS.com
 Fax? -Y -N

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	Matrix	Enter Number of Containers Per Sample or Field Results Below.	Sample/COC Comments
NW-01 GW	5/21/20	13:00	A	IX	no pres
NW-01 FA	5/21/20	13:10	A	IX	
NW-01 HA	5/21/20	13:20	A	IX	
NW-27D GW	5/21/20	13:30	A	IX	
NW-27D FA	5/21/20	13:30	A	IX	
NW-27 D HA	5/21/20	13:50	A	IX	
VSP-1D GW	5/21/20	14:00	A	IX	no pres
VSP-1D FA	5/21/20	14:10	A	IX	
VSP-1D HA	5/21/20	14:20	A	IX	
				CD 5/21	

Container Type: 5 liter
 Container Size: 40
 Preservative: HCL
 Cooler Temp: Therm ID: 523
 No. of Coolers: Y N Initial
 Custody Seals Present? (if present) Seals Intact?
 Received on Ice?
 COC Labels Complete/Accurate?
 Cont. in Good Cont.?
 Correct Containers?
 Correct Sample Volumes?
 Correct Preservation?
 Headspace/Volatiles?

Courier/Tracking #: _____
 Sample/COC Comments: _____

ANALYSES/METHOD REQUESTED

Deliverables: Standard CLP-like USACE Excel
 Reportable to PADEP? Yes No
 PWSID #: _____
 State Samples Collected In: NY NJ PA NC MD WV

Project Comments: Please provide .xls and .pdf report formats. send reports to mbeck@wal.gov on 5/21/20
 Relinquished By / Company Name: Michael Cee Tech Systems
 Date / Time: 5/21/20 16:32
 Received By / Company Name: [Signature]
 Date / Time: 5/21/20 09:15
 Relinquished By / Company Name: [Signature]
 Date / Time: 5/21/20 09:15
 Relinquished By / Company Name: [Signature]
 Date / Time: 5/21/20 11:45

LOGGED BY (signature): _____
 REVIEWED BY (signature): _____

Matrix: G or C
 * G=Grab; C=Composite
 ** Matrix - Air=Air; DW=Drinking Water; GW=Groundwater; OL=Oil; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

Relinquished Handoff CUE 10-27-2020 10:49
 The Client / EUE 5/21/20 11:45
 5/21/20 12:50





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**CHAIN OF CUSTODY/
REQUEST FOR ANALYSIS**

Generated by ALS

**ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /
SAMPLER. INSTRUCTIONS ON THE BACK.**

COC #: 3105364
ALSI Quote #:

2 of 3

Client Name: Eurofins Lancaster Laboratories Environmental

Address: 2425 New Holland Pike
Lancaster, PA 17601

Contact: Hannah Cottman

Phone#: 717-556-7383

Project Name#: 31401545.01

Bill To: Same

TAT Normal-Standard TAT is 10-12 business days.
 Rush-Subject to ALS approval and surcharges.

Date Required: _____ Approved By: _____

Email? -Y E.L.F.E.Subcontracting@eurofinsus.com

Fax? -Y No.:

ANALYSES/METHOD REQUESTED

Low Level TOC

**Matrix

Enter Number of Containers Per Sample or Field Results Below.

Courier/Tracking #:

Sample/COC Comments

Sample Description/Location (As it will appear on the lab report)	Sample Date	Time	Received By / Company Name	Date	Time
VSP-4 GW	5/21/20	15:00	AS	5/21/20	15:00
VSP-4 FA	5/21/20	15:10	AS	5/21/20	15:10
VSP-4 HA	5/21/20	15:20	AS	5/21/20	15:20
VSP-15 GW	5/21/20	15:30	AS	5/21/20	15:30
VSP-15 FA	5/21/20	15:40	AS	5/21/20	15:40
VSP-15 HA	5/21/20	15:50	AS	5/21/20	15:50
T-1100 GW	5/21/20	15:30	AS	5/21/20	15:30
T-1100 FA	5/21/20	15:40	AS	5/21/20	15:40
T-1100 HA	5/21/20	15:50	AS	5/21/20	15:50

Project Comments: Please provide .xls and .pdf report formats. send results to enr@eurofinsus.com

LOGGED BY (signature): _____
REVIEWED BY (signature): _____

Relinquished By / Company Name: _____
Date: _____ Time: _____

Receipt Information (completed by Receiving Lab)

Cooler Temp: 0 Therm ID: 5215

No. of Coolers: _____ Y _____ N _____ Initial

Custody Seals Present? (if present) Seals Intact? _____ Y _____ N _____

Received on Ice? _____

COC Labels Complete/Accurate? _____

Cont. In Good Cont.? _____

Correct Containers? _____

Correct Sample Volumes? _____

Correct Preservation? _____

Headspace/Volatilities? _____

Courier/Tracking #: _____

Sample/COC Comments: no pres

no pres

no pres

Data Deliverables

Standard CLP-like USACE Excel

Special Processing: USACE Navy USACE

Reportable to PADEP? Yes No

Sample Disposal: Lab Special

State Samples Collected In: NY NJ PA NC MD WV

EDDS: Format Type: _____

PWSID #: _____

Relinquished Hand & Get 5-27-20 1459
5/27/2020 12:50
5/27/2020 12:50
5/27/2020 11:45



301 Fulling Mill Road
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 P: (717) 944-5541
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Condition of Sample Receipt Form

Client: Ewofing Work Order #: 3105359 Initials: S/27 Date: _____

- | | | | |
|--|------|-----|-----------|
| 1. Were airbills / tracking numbers present and recorded?..... | NONE | YES | NO |
| Tracking number: _____ | | | |
| 2. Are Custody Seals on shipping containers intact?..... | NONE | YES | NO |
| 3. Are Custody Seals on sample containers intact?..... | NONE | YES | NO |
| 4. Is there a COC (Chain-of-Custody) present?..... | YES | NO | NO |
| 5. Are the COC and bottle labels complete, legible and in agreement?..... | YES | NO | NO |
| 5a. Does the COC contain sample locations?..... | YES | NO | NO |
| 5b. Does the COC contain date and time of sample collection for all samples?..... | YES | NO | NO |
| 5c. Does the COC contain sample collectors name?..... | YES | NO | NO |
| 5d. Does the COC note the type(s) of preservation for all bottles?..... | YES | NO | NO |
| 5e. Does the COC note the number of bottles submitted for each sample?..... | YES | NO | NO |
| 5f. Does the COC note the type of sample, composite or grab?..... | YES | NO | NO |
| 5g. Does the COC note the matrix of the sample(s)?..... | YES | NO | NO |
| 6. Are all aqueous samples requiring preservation preserved correctly? ¹ | N/A | YES | NO |
| 7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?..... | YES | NO | NO |
| 8. Are all samples within holding times for the requested analyses?..... | YES | NO | NO |
| 9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)..... | YES | NO | NO |
| 10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?..... | N/A | YES | NO |
| 11. Were the samples received on ice?..... | YES | NO | NO |
| 12. Were sample temperatures measured at 0.0-6.0°C..... | YES | NO | NO |
| 13. Are the samples DW matrix ? IF YES, fill out Reportable Drinking Water questions below..... | YES | NO | NO |
| 13a. Are the samples required for SDWA compliance reporting?..... | N/A | YES | NO |
| 13b. Did the client provide a SDWA PWS ID#?..... | N/A | YES | NO |
| 13c. Are all aqueous unpreserved SDWA samples pH 5-9?..... | N/A | YES | NO |
| 13d. Did the client provide the SDWA sample location ID/Description?..... | N/A | YES | NO |
| 13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?..... | N/A | YES | NO |

Cooler #: _____

Temperature (°C): 6 _____

Thermometer ID: 523 _____

Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

(2) MW-100 HA 5/21/20 1650
 (2) MW 100 GW 5/21/20 1630 TOC's
 (2) MW 100 FA 5/21/20 1640

VSP-100 GW (5-21-20 10:10) VSP-100 HA (5-21-20 10:20) VSP-100 FA (5-21-20 10:10)

¹Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis

Rev 1/20/2020



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Condition of Sample Receipt Form

Client: Enviros Work Order #: 3105359 Initials: LD Date: 5/27/2020

- | | | | |
|--|-------------|------------|-----------|
| 1. Were airbills / tracking numbers present and recorded?..... | <u>NONE</u> | YES | NO |
| Tracking number: _____ | | | |
| 2. Are Custody Seals on shipping containers intact?..... | <u>NONE</u> | YES | NO |
| 3. Are Custody Seals on sample containers intact?..... | <u>NONE</u> | YES | NO |
| 4. Is there a COC (Chain-of-Custody) present?..... | | <u>YES</u> | NO |
| 5. Are the COC and bottle labels complete, legible and in agreement?..... | | YES | <u>NO</u> |
| 5a. Does the COC contain sample locations?..... | | <u>YES</u> | NO |
| 5b. Does the COC contain date and time of sample collection for all samples?..... | | <u>YES</u> | NO |
| 5c. Does the COC contain sample collector's name?..... | | YES | <u>NO</u> |
| 5d. Does the COC note the type(s) of preservation for all bottles?..... | | YES | <u>NO</u> |
| 5e. Does the COC note the number of bottles submitted for each sample?..... | | <u>YES</u> | NO |
| 5f. Does the COC note the type of sample, composite or grab?..... | | YES | <u>NO</u> |
| 5g. Does the COC note the matrix of the sample(s)?..... | | YES | <u>NO</u> |
| 6. Are all aqueous samples requiring preservation preserved correctly? ¹ | N/A | <u>YES</u> | NO |
| 7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?..... | | <u>YES</u> | NO |
| 8. Are all samples within holding times for the requested analyses?..... | | <u>YES</u> | NO |
| 9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)..... | | <u>YES</u> | NO |
| 10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?..... | <u>N/A</u> | YES | NO |
| 11. Were the samples received on ice?..... | | <u>YES</u> | NO |
| 12. Were sample temperatures measured at 0.0-6.0°C..... | | <u>YES</u> | NO |
| 13. Are the samples DW matrix? If YES, fill out Reportable Drinking Water questions below..... | | YES | <u>NO</u> |
| 13a. Are the samples required for SDWA compliance reporting?..... | <u>N/A</u> | YES | NO |
| 13b. Did the client provide a SDWA PWS ID#?..... | <u>N/A</u> | YES | NO |
| 13c. Are all aqueous unpreserved SDWA samples pH 5-9?..... | <u>N/A</u> | YES | NO |
| 13d. Did the client provide the SDWA sample location ID/Description?..... | <u>N/A</u> | YES | NO |
| 13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?..... | <u>N/A</u> | YES | NO |


Cooler #: _____
 Temperature (°C): 0
 Thermometer ID: 523
 Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

¹Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis

Rev 1/20/2020

CHAIN-OF-CUSTODY RECORD

WSP USA Office Address 13530 Dulles Technology Dr Ste. 300 Herndon, VA 20171				Requested Analyses & Preservatives								No. 010019		WSP	
Project Name Kop-flex		WSP USA Contact Name Eric Johnson		Number of Containers TOC Method 5310C EPH w/ silicagel cleanup 8015C EPH 8015C Hem 1664B HEM w/ silicagel treatment 1664B								Laboratory Name & Location Eurofins Lancaster			
Project Location Hanover, MD		WSP USA Contact E-mail Eric.Johnson@wsp.com										Laboratory Project Manager Andrea DeCola			
Project Number & Task 31401545.010/4		WSP USA Contact Phone 703 709 6500										Requested Turn-Around-Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input type="checkbox"/> ___ HR			
Sampler(s) Name(s) Molly Long Elliott Martynkiewicz		Sampler(s) Signature(s) <i>[Signatures]</i>										Sample Comments			
Sample Identification		Matrix	Collection Start Date Time		Collection Stop Date Time										
MW-01		AQ	5/14/2020 10 18		8		X	X	X	X	X	*			
MW-27D		AQ	5/13/2020 14 55		8		X	X	X	X	X				
VSP-1D		AQ	5/14/2020 10 00		8		X	X	X	X	X				
VSP-1S		AQ	5/14/2020 10 25		8		X	X	X	X	X				
VSP-4		AQ	5/14/2020 09 10		8		X	X	X	X	X				
T-1100		AQ	5/14/2020 09 35		8		X	X	X	X	X				
VSP-100		AQ	5/14/2020 08 00		8		X	X	X	X	X				
MW-100		AQ	5/13/2020 08 00		8		X	X	X	X	X				
EB-051320		AQ	5/13/2020 16 45		8		X	X	X	X	X				
* A VOA for TOC was broken we we filled up a glass amber jar half full with sample water. This jar is unpreserved. <i>[Signature]</i>															
 410-2314 Chain of Custody															
Relinquished By (Signature) <i>[Signature]</i>		Date 5/14/20	Time 1430	Received By (Signature) <i>[Signature]</i>		Date 5/14/20	Time 14:30	Shipment Method courier		Tracking Number(s)					
Relinquished By (Signature) <i>[Signature]</i>		Date 5/14/20	Time 1715	Received By (Signature) <i>[Signature]</i>		Date 5/14/20	Time 1730	Number of Packages		Custody Seal Number(s)					

*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)

Login Sample Receipt Checklist

Client: WSP USA Corp.

Job Number: 410-2314-1

Login Number: 2314

List Source: Eurofins Lancaster Laboratories Env

List Number: 1

Creator: Metzger, Katherine A

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	N/A	

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-9251-1
Client Project/Site: Former Kop-Flex Facility Site
Revision: 1

For:
WSP USA Corp.
Attn: Environmental Accounts Payable
13530 Dulles Technology Drive
Suite 300
Herndon, Virginia 20171

Attn: Eric Johnson



Authorized for release by:
9/7/2020 3:30:32 PM

Hannah Cottman, Operations Support Specialist
(717)556-7383
hannahcottman@eurofinsus.com

LINKS

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results through
TotalAccess

Have a Question?



Visit us at:
www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

* QC recoveries that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result.

* Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.

* Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink, appearing to read "Hannah L. Cottman". The signature is written in a cursive style with a horizontal line underneath it.

Hannah Cottman
Operations Support Specialist
9/7/2020 3:30:32 PM



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Definitions/Glossary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

Job ID: 410-9251-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative 410-9251-1

Comments

No additional comments.

Revision

The report being provided is a revision of the original report sent on 8/11/2020. The report (revision 1) is being revised due to: Client needs MDL reporting for DOC and TOC..

Receipt

The samples were received on 7/31/2020 11:27 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.0° C.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Detection Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

Client Sample ID: VSP-1S

Lab Sample ID: 410-9251-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	0.86	J	1.0	0.50 mg/L	1		5310C-2011	Total/NA
Dissolved Organic Carbon	1.3		1.0	0.50 mg/L	1		415.1	Dissolved

Client Sample ID: VSP-1D

Lab Sample ID: 410-9251-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Organic Carbon	0.92	J	1.0	0.50 mg/L	1		415.1	Dissolved

Client Sample ID: VSP-4

Lab Sample ID: 410-9251-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Organic Carbon	0.53	J	1.0	0.50 mg/L	1		415.1	Dissolved

Client Sample ID: VSP-1200

Lab Sample ID: 410-9251-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Organic Carbon	0.53	J	1.0	0.50 mg/L	1		415.1	Dissolved

Client Sample ID: VSP-100

Lab Sample ID: 410-9251-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Organic Carbon	0.51	J	1.0	0.50 mg/L	1		415.1	Dissolved

Client Sample ID: Condensate

Lab Sample ID: 410-9251-6

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	9.2		1.0	0.50 mg/L	1		5310C-2011	Total/NA
Dissolved Organic Carbon	9.0		1.0	0.50 mg/L	1		415.1	Dissolved

This Detection Summary does not include radiochemical test results.

Euofins Lancaster Laboratories Env, LLC

Client Sample Results

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

Client Sample ID: VSP-1S

Lab Sample ID: 410-9251-1

Date Collected: 07/30/20 10:15

Matrix: Water

Date Received: 07/31/20 11:27

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.86	J	1.0	0.50 mg/L			08/08/20 21:43	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.3		1.0	0.50 mg/L			08/07/20 21:56	1

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Client Sample Results

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

Client Sample ID: VSP-1D

Lab Sample ID: 410-9251-2

Date Collected: 07/30/20 10:20

Matrix: Water

Date Received: 07/31/20 11:27

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	<0.50		1.0	0.50 mg/L			08/08/20 22:29	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.92	J	1.0	0.50 mg/L			08/07/20 23:13	1

Client Sample Results

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

Client Sample ID: VSP-4

Lab Sample ID: 410-9251-3

Date Collected: 07/30/20 10:25

Matrix: Water

Date Received: 07/31/20 11:27

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	<0.50		1.0	0.50 mg/L			08/08/20 22:45	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.53	J	1.0	0.50 mg/L			08/07/20 23:28	1

Client Sample Results

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

Client Sample ID: VSP-1200

Lab Sample ID: 410-9251-4

Date Collected: 07/30/20 10:30

Matrix: Water

Date Received: 07/31/20 11:27

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	<0.50		1.0	0.50 mg/L			08/08/20 23:00	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.53	J	1.0	0.50 mg/L			08/07/20 23:44	1

Client Sample Results

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

Client Sample ID: VSP-100

Lab Sample ID: 410-9251-5

Date Collected: 07/30/20 10:35

Matrix: Water

Date Received: 07/31/20 11:27

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	<0.50		1.0	0.50 mg/L			08/08/20 23:15	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.51	J	1.0	0.50 mg/L			08/07/20 23:59	1

Client Sample Results

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

Client Sample ID: Condensate

Lab Sample ID: 410-9251-6

Date Collected: 07/30/20 10:40

Matrix: Water

Date Received: 07/31/20 11:27

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	9.2		1.0	0.50 mg/L			08/08/20 23:31	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	9.0		1.0	0.50 mg/L			08/08/20 00:15	1

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QC Sample Results

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

Method: 415.1 - DOC

Lab Sample ID: MB 410-31003/33
Matrix: Water
Analysis Batch: 31003

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	<0.50		1.0	0.50 mg/L			08/07/20 21:41	1

Lab Sample ID: LCS 410-31003/32
Matrix: Water
Analysis Batch: 31003

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	25.0	25.2		mg/L		101	86 - 114

Lab Sample ID: 410-9251-1 MS
Matrix: Water
Analysis Batch: 31003

Client Sample ID: VSP-1S
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	1.3		10.0	11.7		mg/L		103	86 - 114

Lab Sample ID: 410-9251-1 DU
Matrix: Water
Analysis Batch: 31003

Client Sample ID: VSP-1S
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Dissolved Organic Carbon	1.3			1.55	F5	mg/L		15	2

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-31768/37
Matrix: Water
Analysis Batch: 31768

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	<0.50		1.0	0.50 mg/L			08/08/20 21:28	1

Lab Sample ID: LCS 410-31768/36
Matrix: Water
Analysis Batch: 31768

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	25.0	26.0		mg/L		104	91 - 113

Lab Sample ID: 410-9251-1 MS
Matrix: Water
Analysis Batch: 31768

Client Sample ID: VSP-1S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	0.86	J	10.0	11.4		mg/L		105	91 - 113

QC Sample Results

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav (Continued)

Lab Sample ID: 410-9251-1 DU
Matrix: Water
Analysis Batch: 31768

Client Sample ID: VSP-1S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	0.86	J	0.836	J	mg/L		3	3

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QC Association Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

General Chemistry

Analysis Batch: 31003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-9251-1	VSP-1S	Dissolved	Water	415.1	
410-9251-2	VSP-1D	Dissolved	Water	415.1	
410-9251-3	VSP-4	Dissolved	Water	415.1	
410-9251-4	VSP-1200	Dissolved	Water	415.1	
410-9251-5	VSP-100	Dissolved	Water	415.1	
410-9251-6	Condensate	Dissolved	Water	415.1	
MB 410-31003/33	Method Blank	Dissolved	Water	415.1	
LCS 410-31003/32	Lab Control Sample	Dissolved	Water	415.1	
410-9251-1 MS	VSP-1S	Dissolved	Water	415.1	
410-9251-1 DU	VSP-1S	Dissolved	Water	415.1	

Analysis Batch: 31768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-9251-1	VSP-1S	Total/NA	Water	5310C-2011	
410-9251-2	VSP-1D	Total/NA	Water	5310C-2011	
410-9251-3	VSP-4	Total/NA	Water	5310C-2011	
410-9251-4	VSP-1200	Total/NA	Water	5310C-2011	
410-9251-5	VSP-100	Total/NA	Water	5310C-2011	
410-9251-6	Condensate	Total/NA	Water	5310C-2011	
MB 410-31768/37	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-31768/36	Lab Control Sample	Total/NA	Water	5310C-2011	
410-9251-1 MS	VSP-1S	Total/NA	Water	5310C-2011	
410-9251-1 DU	VSP-1S	Total/NA	Water	5310C-2011	

Lab Chronicle

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

Client Sample ID: VSP-1S

Lab Sample ID: 410-9251-1

Date Collected: 07/30/20 10:15

Matrix: Water

Date Received: 07/31/20 11:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	31003	08/07/20 21:56	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	31768	08/08/20 21:43	KGQ6	ELLE

Client Sample ID: VSP-1D

Lab Sample ID: 410-9251-2

Date Collected: 07/30/20 10:20

Matrix: Water

Date Received: 07/31/20 11:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	31003	08/07/20 23:13	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	31768	08/08/20 22:29	KGQ6	ELLE

Client Sample ID: VSP-4

Lab Sample ID: 410-9251-3

Date Collected: 07/30/20 10:25

Matrix: Water

Date Received: 07/31/20 11:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	31003	08/07/20 23:28	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	31768	08/08/20 22:45	KGQ6	ELLE

Client Sample ID: VSP-1200

Lab Sample ID: 410-9251-4

Date Collected: 07/30/20 10:30

Matrix: Water

Date Received: 07/31/20 11:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	31003	08/07/20 23:44	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	31768	08/08/20 23:00	KGQ6	ELLE

Client Sample ID: VSP-100

Lab Sample ID: 410-9251-5

Date Collected: 07/30/20 10:35

Matrix: Water

Date Received: 07/31/20 11:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	31003	08/07/20 23:59	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	31768	08/08/20 23:15	KGQ6	ELLE

Client Sample ID: Condensate

Lab Sample ID: 410-9251-6

Date Collected: 07/30/20 10:40

Matrix: Water

Date Received: 07/31/20 11:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	31003	08/08/20 00:15	KGQ6	ELLE
Total/NA	Analysis	5310C-2011		1	31768	08/08/20 23:31	KGQ6	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Eurofins Lancaster Laboratories Env, LLC

Accreditation/Certification Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	09-30-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
415.1		Water	Dissolved Organic Carbon
5310C-2011		Water	Total Organic Carbon



Method Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

Method	Method Description	Protocol	Laboratory
415.1	DOC	MCAWW	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Sample Summary

Client: WSP USA Corp.
Project/Site: Former Kop-Flex Facility Site

Job ID: 410-9251-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-9251-1	VSP-1S	Water	07/30/20 10:15	07/31/20 11:27	
410-9251-2	VSP-1D	Water	07/30/20 10:20	07/31/20 11:27	
410-9251-3	VSP-4	Water	07/30/20 10:25	07/31/20 11:27	
410-9251-4	VSP-1200	Water	07/30/20 10:30	07/31/20 11:27	
410-9251-5	VSP-100	Water	07/30/20 10:35	07/31/20 11:27	
410-9251-6	Condensate	Water	07/30/20 10:40	07/31/20 11:27	

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CHAIN-OF-CUSTODY RECORD

13530 Dulles Technology Dr #300 Herndon, VA					Requested Analyses & Preservatives										No. 004563 WSP PARSONS BRINCKERHOFF										
Project Name Kop-Flex			WSP Parsons Brinckerhoff Contact Name Eric Johnson		Number of Containers Total organic carbon (TOC) Hg PO4 Dissolved organic carbon (DOC) no preservative											Laboratory Name & Location Eurofins Lancaster Laboratories Environmental									
Project Location Hanover, MD			WSP Parsons Brinckerhoff Contact E-mail eric.johnson@wspgroup.com													Laboratory Project Manager									
Project Number & Task 31401545.010 / 04			WSP Parsons Brinckerhoff Contact Phone 703-709-4500													Requested Turn-Around-Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input type="checkbox"/> ___ HR									
Sampler(s) Name(s) Shannon Burke Lauren Johnson			Sampler(s) Signature(s) <i>Shannon Burke</i>													Sample Comments									
Sample Identification	Matrix	Collection Start*		Collection Stop*		Number of Containers	TOC	Hg	PO4	DOC	Requested Analyses & Preservatives										Sample Comments				
		Date	Time	Date	Time						1	2	3	4	5	6	7	8	9	10		11	12	13	14
VSP-15	GW	7/30/20	1015	---	---	4	X	X																	
VSP-1D	GW	7/30/20	1020	---	---	4	X	X																	
VSP-4	WW	7/30/20	1025	---	---	4	X	X																	
VSP-1200	WW	7/30/20	1030	---	---	4	X	X																	
VSP-100	WW	7/30/20	1035	---	---	4	X	X																	
Condensate	WW	7/30/20	1040	---	---	4	X	X																	
Relinquished By (Signature) <i>Shannon Burke</i>		Date	Time	Received By (Signature) <i>Chris Wells</i>		Date	Time	Shipment Method FedEx		Tracking Number(s) 8148 7295 2700															
Relinquished By (Signature)		Date	Time	Received By (Signature)		Date	Time	Number of Packages 1		Custody Seal Number(s)															

*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)

Login Sample Receipt Checklist

Client: WSP USA Corp.

Job Number: 410-9251-1

Login Number: 9251

List Source: Eurofins Lancaster Laboratories Env

List Number: 1

Creator: Rivera, Tatiana

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	N/A	

CHARACTERIZATION OF ORGANIC CONSTITUENT FOULANTS

3090

Generator acknowledges that no material change has occurred either in the characteristics or in the process generating the material. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number MDD043373935	2. Page 1 of 1	3. Emergency Response Phone (800) 483-3718	4. Manifest Tracking Number 014230846 FLE
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5. Generator's Name and Mailing Address Kop-Flex Inc 13530 Dulles Technology DR STE# 300 Herndon, VA 20171 Generator's Phone: (703) 709-6500 ATTN:Eric Johnson	Generator's Site Address (if different than mailing address) 7565 Harmans Road Hanover, MD 21076
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6. Transporter 1 Company Name Clean Harbors Environmental Services, Inc.	U.S. EPA ID Number MAD039322250
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7. Transporter 2 Company Name	U.S. EPA ID Number
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8. Designated Facility Name and Site Address Clean Harbors of Baltimore Inc 1910 Russell Street Baltimore, MD 21230 Facility's Phone: (410) 244-8200	U.S. EPA ID Number MDD980555189
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9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
		No.	Type					
X	1. UN1824, WASTE SODIUM HYDROXIDE SOLUTION, 8, PG II	1	JT	4946	G	D002		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information 1. UN1824 ERG 154

Contract retained by generator confers agency authority on initial transporter to add or substitute additional transporters on generator's behalf for purposes of transportation efficiency, convenience, or safety.

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name Elliott Martyniewicz on behalf of Emerson Inc	Signature 	Month Day Year 03 03 2006
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16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.	Port of entry/exit: Date leaving U.S.:
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17. Transporter Acknowledgment of Receipt of Materials		
Transporter 1 Printed/Typed Name CLYDE M. KNIGHT	Signature 	Month Day Year 3 3 20
Transporter 2 Printed/Typed Name	Signature	Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection

18b. Alternate Facility (or Generator)	Manifest Reference Number:	U.S. EPA ID Number
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18c. Signature of Alternate Facility (or Generator)	Month Day Year
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19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)			
1. H070 H077	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a		
Printed/Typed Name Tim McCarthy	Signature 	Month Day Year 03 03 2006

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. Designated Facility to EPA's e-MANIFEST SYSTEM
Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping. BT 2001086829-002 PPW



Land Disposal Restriction Notification Form

Printed Date : Mar 4, 2020

MANIFEST INFORMATION

Generator : Kop-Flex Inc
Address: 7565 Harmans Road
Hanover, MD 21076

Manifest Tracking Info.

014230846FLE

EPA ID #: M D D 0 4 3 3 7 3 9 3 5

Sales Order No: 2001086829-002

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category
1.	1	CH1991797B	NON-WASTEWATER	2 (This is subject to LDR.)

EPA Waste Code	EPA Waste SubCategory
D002	Corrosive Characteristic

Certification

Applies to Manifest Line Items

Pursuant to 40 CFR 268.7(a), I hereby notify that this shipment contains waste restricted under 40 CFR Part 268.

1.

Waste analysis data, where available, is attached.

Signature : 

Print Name Elliott Markynski

Title : Environmental Scientist

Date : 03/04/2020

Site Address : 7565 Harmans Road
Hanover, MD 21076

SC PPW 12/9/2008

WORK ORDER NO. **BT 2001086829-002**

DOCUMENT NO. **0327544**

STRAIGHT BILL OF LADING

TRANSPORTER 1 Clean Harbors Environmental Services, Inc. VEHICLE ID # 3090
 EPA ID # MAD030322250 TRANS. 1 PHONE (781) 792-5000
 TRANSPORTER 2 _____ VEHICLE ID # _____
 EPA ID # _____ TRANS. 2 PHONE _____

DESIGNATED FACILITY Clean Harbors of Baltimore Inc			SHIPPER Kop-Flex Inc ATTN:Eric Johnson		
FACILITY EPA ID # MDD980555189			SHIPPER EPA ID # MDD043373935		
ADDRESS 1910 Russell Street			ADDRESS 13530 Dulles Technology DR STE# 300		
CITY Baltimore		STATE MD	ZIP 21230	CITY Herndon	
				STATE VA	ZIP 20171
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
1	TT	X	A. NON D.O.T. REGULATED <i>UN1824, Waste Sediment/brine Solution, 8, PO-IF</i>	4946	G
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS A.CH1969276B			EMERGENCY PHONE #: (800) 483-3718 GENERATOR: Kop-Flex Inc		

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT <i>Shannon Burke on behalf of EMERSUB LLC</i>	SIGN <i>Shannon Burke</i>	DATE 3/3/20
TRANSPORTER 1	PRINT <i>CLYDE M. KNIGHT</i>	SIGN <i>[Signature]</i>	DATE 3/3/20
TRANSPORTER 2	PRINT	SIGN	DATE
RECEIVED BY	PRINT <i>Tim McCarthy</i>	SIGN <i>[Signature]</i>	DATE 3/3/20

Generator acknowledges that no material change has occurred either in the characteristics or in the process generating the material.

Site Address: 7565 Harman Road
Hanover, MD 21076

9C PPW 12/9/2008
WORK ORDER NO. BT 2001086829-002

DOCUMENT NO. 0327542 STRAIGHT BILL OF LADING

TRANSPORTER 1 Clean Harbors Environmental Services, Inc. VEHICLE ID # 40154
 EPA ID # MAD039322250 TRANS. 1 PHONE (781) 792-5000
 TRANSPORTER 2 _____ VEHICLE ID # _____
 EPA ID # _____ TRANS. 2 PHONE _____

DESIGNATED FACILITY Clean Harbors of Baltimore Inc			SHIPPER Kop-Flex Inc ATTN:Eric Johnson		
FACILITY EPA ID # MDD980555189			SHIPPER EPA ID # MDD043373935		
ADDRESS 1910 Russell Street			ADDRESS 13530 Dulles Technology DR STE# 300		
CITY Baltimore	STATE MD	ZIP 21230	CITY Herndon	STATE VA	ZIP 20171
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
001	TT		A. NON D.O.T. REGULATED	1240	G
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS ACH1969276B EMERGENCY PHONE #: (800) 483-3718 GENERATOR: Kop-Flex Inc					

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT Shannon Burke on behalf of Emersub 16, LLC	SIGN <i>Shannon Burke</i>	DATE 3-16-20
TRANSPORTER 1	PRINT Doug Price	SIGN <i>Doug Price</i>	DATE 3-16-20
TRANSPORTER 2	PRINT	SIGN	DATE
RECEIVED BY	PRINT Valene Saubka	SIGN <i>Valene Saubka</i>	DATE 3/16/20

Generator acknowledges that no material change has occurred either in the characteristics or in the process generating the material.

SECRET 97565 HANCOCK RD
HANCOCK, MD 21076

2001086529-002

WORK ORDER NO. _____

DOCUMENT NO. **0327604** STRAIGHT BILL OF LADING

TRANSPORTER 1 Clean-Waters Env Services Inc VEHICLE ID # 4004

EPA ID # ~~MD0039322250~~ MD0039322250 TRANS. 1 PHONE 781-792-5000

TRANSPORTER 2 _____ VEHICLE ID # _____

EPA ID # _____ TRANS. 2 PHONE _____

DESIGNATED FACILITY <u>Clean-Waters of Baltimore</u>			SHIPPER <u>AAA Eric Johnson</u>		
FACILITY EPA ID # <u>MD0950555189</u>			SHIPPER EPA ID # <u>KOP-FLEX</u>		
ADDRESS <u>1910 Russell St</u>			ADDRESS <u>13530 Technology Dr Ste H 300</u>		
CITY <u>Baltimore</u>	STATE <u>MD</u>	ZIP <u>21230</u>	CITY <u>Herndon</u>	STATE <u>VA</u>	ZIP <u>20171</u>
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
<u>001</u>	<u>T</u>		A. <u>non D.O.T. Regulated</u>	<u>2800</u>	<u>G</u>
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS <u>A-CR19692763</u> <u>Emergency # 800 453-3718</u> <u>Chatham, KOP-FLEX Inc</u>					

SHIPPER'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT <u>Shannon Burke on behalf of Emersub 16 LLC</u>	SIGN <u>Shannon Burke</u>	DATE <u>3-16-20</u>
TRANSPORTER 1	PRINT <u>Doug R. Lile</u>	SIGN <u>Doug R. Lile</u>	DATE <u>3-16-20</u>
TRANSPORTER 2	PRINT	SIGN	DATE
RECEIVED BY	PRINT <u>Valerie Saliba</u>	SIGN <u>Valerie Saliba</u>	DATE <u>3/16/20</u>

1

2001081929.002

WORK ORDER NO. _____

DOCUMENT NO. 0327605

STRAIGHT BILL OF LADING

TRANSPORTER 1 Clean Air Services Inc VEHICLE ID # 55292

EPA ID # MND 039322250 TRANS. 1 PHONE 7517925000

TRANSPORTER 2 _____ VEHICLE ID # _____

EPA ID # _____ TRANS. 2 PHONE _____

DESIGNATED FACILITY <u>Clean Air Services of Baltimore</u>			SHIPPER <u>KOP-FLEX Inc</u>		
FACILITY EPA ID # <u>MND 990555189</u>			SHIPPER EPA ID # <u>MND 043373935</u>		
ADDRESS <u>1910 Russell ST</u>			ADDRESS <u>13630 Dulles Technology Dr STE 300</u>		
CITY <u>Baltimore</u>		STATE <u>MD</u>	ZIP <u>21232</u>	CITY <u>Herndon</u>	
				STATE <u>VA</u>	ZIP <u>20171</u>
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
<u>001</u>	<u>TT</u>		<u>A. NON D.O.T. REGULATED</u>	<u>2000</u>	<u>L</u>
			<u>B.</u>		
			<u>C.</u>		
			<u>D.</u>		
			<u>E.</u>		
			<u>F.</u>		
			<u>G.</u>		
			<u>H.</u>		
SPECIAL HANDLING INSTRUCTIONS <u>A-CU 1969276 B</u>					
<u>Emergency 800 453-3715</u> <u>Attention: KOP-FLEX</u>					

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT <u>Shannon Burke on behalf of Emerstat LLC</u>	SIGN <u>Shannon Burke</u>	DATE <u>3-16-20</u>
TRANSPORTER 1	PRINT <u>David Dylunas</u>	SIGN <u>[Signature]</u>	DATE <u>3-16-20</u>
TRANSPORTER 2	PRINT _____	SIGN _____	DATE _____
RECEIVED BY	PRINT <u>Valene Saliba</u>	SIGN <u>Valene Saliba</u>	DATE <u>3/16/20</u>

APPENDIX

C METALS FOULANT EVALUATION



Project Name: Kop-Flex
PSS Project No.: 20121516

December 22, 2020

Eric Johnson
WSP USA - Herndon
13530 Dulles Technology Dr, Ste 300
Herndon, VA 20171



Reference: PSS Project No: **20121516**
Project Name: Kop-Flex
Project Location: Hanover, MD
Project ID.: 31401545.010/04

Dear Eric Johnson:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **20121516**.

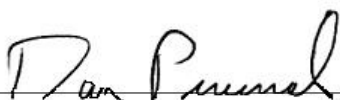
All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on January 19, 2021, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Kop-Flex

PSS Project No.: 20121516

Project ID: 31401545.010/04

The following samples were received under chain of custody by Phase Separation Science (PSS) on 12/15/2020 at 02:22 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
20121516-001	VSP-2	WASTE WATER	12/15/20 11:40
20121516-002	VSP-3	WASTE WATER	12/15/20 11:50
20121516-003	T-1200 Lead EF	WASTE WATER	12/15/20 11:55
20121516-004	Effluent VSP-4	WASTE WATER	12/15/20 11:30
20121516-005	TB-121520	WATER	12/15/20 14:22

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C** Results Pending Final Confirmation.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail** The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J** The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL** This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND** Not Detected at or above the reporting limit.
- RL** PSS Reporting Limit.
- U** Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of AnalysisProject Name: Kop-Flex
PSS Project No.: 20121516**Sample ID: VSP-2** **Date/Time Sampled: 12/15/2020 11:40** **PSS Sample ID: 20121516-001**
Matrix: WASTE WATER **Date/Time Received: 12/15/2020 14:22**

Dissolved Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	129	ug/L	100		1	12/17/20	12/17/20 16:18	1051
Copper	4.8	ug/L	1.0		1	12/17/20	12/17/20 16:18	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 16:18	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 16:18	1051
Nickel	14.5	ug/L	1.00		1	12/17/20	12/17/20 16:18	1051
Zinc	25.8	ug/L	20.0		1	12/17/20	12/17/20 16:18	1051

Total Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	135	ug/L	100		1	12/17/20	12/17/20 18:35	1051
Copper	5.5	ug/L	1.0		1	12/17/20	12/17/20 18:35	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 18:35	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 18:35	1051
Nickel	15.0	ug/L	1.00		1	12/17/20	12/17/20 18:35	1051
Zinc	40.1	ug/L	20.0		1	12/17/20	12/17/20 18:35	1051

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	7.8	mg/L	0.66		1	12/17/20	12/17/20 18:35	1051

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20121516

Sample ID: VSP-3 **Date/Time Sampled: 12/15/2020 11:50** **PSS Sample ID: 20121516-002**
Matrix: WASTE WATER **Date/Time Received: 12/15/2020 14:22**

Dissolved Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	120	ug/L	100		1	12/17/20	12/17/20 16:22	1051
Copper	4.8	ug/L	1.0		1	12/17/20	12/17/20 16:22	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 16:22	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 16:22	1051
Nickel	14.5	ug/L	1.00		1	12/17/20	12/17/20 16:22	1051
Zinc	26.2	ug/L	20.0		1	12/17/20	12/17/20 16:22	1051

Total Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	126	ug/L	100		1	12/17/20	12/17/20 18:49	1051
Copper	5.6	ug/L	1.0		1	12/17/20	12/17/20 18:49	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 18:49	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 18:49	1051
Nickel	14.8	ug/L	1.00		1	12/17/20	12/17/20 18:49	1051
Zinc	24.5	ug/L	20.0		1	12/17/20	12/17/20 18:49	1051

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	7.8	mg/L	0.66		1	12/17/20	12/17/20 18:49	1051

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20121516

Sample ID: T-1200 Lead EF **Date/Time Sampled: 12/15/2020 11:55** **PSS Sample ID: 20121516-003**
Matrix: WASTE WATER **Date/Time Received: 12/15/2020 14:22**

Dissolved Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	185	ug/L	100		1	12/17/20	12/17/20 16:26	1051
Copper	11.7	ug/L	1.00		1	12/17/20	12/17/20 16:26	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 16:26	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 16:26	1051
Nickel	14.8	ug/L	1.00		1	12/17/20	12/17/20 16:26	1051
Zinc	41.1	ug/L	20.0		1	12/17/20	12/17/20 16:26	1051

Total Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	182	ug/L	100		1	12/17/20	12/17/20 18:53	1051
Copper	16.4	ug/L	1.00		1	12/17/20	12/17/20 18:53	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 18:53	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 18:53	1051
Nickel	14.8	ug/L	1.00		1	12/17/20	12/17/20 18:53	1051
Zinc	59.5	ug/L	20.0		1	12/17/20	12/17/20 18:53	1051

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	7.7	mg/L	0.66		1	12/17/20	12/17/20 18:53	1051

Certificate of Analysis

Project Name: Kop-Flex
PSS Project No.: 20121516

Sample ID: Effluent VSP-4 **Date/Time Sampled: 12/15/2020 11:30** **PSS Sample ID: 20121516-004**
Matrix: WASTE WATER **Date/Time Received: 12/15/2020 14:22**

Dissolved Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	ND	ug/L	100		1	12/17/20	12/17/20 16:30	1051
Copper	2.2	ug/L	1.0		1	12/17/20	12/17/20 16:30	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 16:30	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 16:30	1051
Nickel	17.5	ug/L	1.00		1	12/17/20	12/17/20 16:30	1051
Zinc	25.1	ug/L	20.0		1	12/17/20	12/17/20 16:30	1051

Total Metals (6) Analytical Method: EPA 200.8 Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Aluminum	ND	ug/L	100		1	12/17/20	12/17/20 18:58	1051
Copper	3.7	ug/L	1.0		1	12/17/20	12/17/20 18:58	1051
Iron	ND	ug/L	100		1	12/17/20	12/17/20 18:58	1051
Lead	ND	ug/L	1.0		1	12/17/20	12/17/20 18:58	1051
Nickel	17.0	ug/L	1.00		1	12/17/20	12/17/20 18:58	1051
Zinc	26.3	ug/L	20.0		1	12/17/20	12/17/20 18:58	1051

Hardness, Total by Calculation Analytical Method: SM 2340B Preparation Method: 200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hardness (Ca & Mg)	8.0	mg/L	0.66		1	12/17/20	12/17/20 18:58	1051

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	2.2	ug/L	1.0		1	12/22/20	12/22/20 11:35	1011
<i>Surrogate(s)</i>	<i>Recovery</i>		<i>Limits</i>					
<i>Toluene-D8</i>	98 %		80-120		1	12/22/20	12/22/20 11:35	1011

Certificate of Analysis

Project Name: Kop-Flex
 PSS Project No.: 20121516

Sample ID: TB-121520 **Date/Time Sampled: 12/15/2020 14:22** **PSS Sample ID: 20121516-005**

Matrix: WATER **Date/Time Received: 12/15/2020 14:22**

1,4-Dioxane by GC/MS - SIM Analytical Method: SW-846 8260 B-Modified Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,4-Dioxane (P-Dioxane)	ND	ug/L	1.0		1	12/22/20	12/22/20 13:46	1011
Surrogate(s)	Recovery		Limits					
Toluene-D8	100	%	80-120		1	12/22/20	12/22/20 13:46	1011

Case Narrative

Project Name: Kop-Flex

PSS Project No.: 20121516

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

SW-846 8260 B-Modified: 1,4-Dioxane

Lab Chronology

Project Name: Kop-Flex
 PSS Project No.: 20121516

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	VSP-2	Initial	20121516-001	W	84260	180502	12/17/2020 10:49	12/17/2020 18:35
	VSP-3	Initial	20121516-002	W	84260	180502	12/17/2020 10:49	12/17/2020 18:49
	T-1200 Lead EF	Initial	20121516-003	W	84260	180502	12/17/2020 10:49	12/17/2020 18:53
	Effluent VSP-4	Initial	20121516-004	W	84260	180502	12/17/2020 10:49	12/17/2020 18:58
	84260-1-BKS	BKS	84260-1-BKS	W	84260	180502	12/17/2020 10:49	12/17/2020 18:30
	84260-1-BLK	BLK	84260-1-BLK	W	84260	180502	12/17/2020 10:49	12/17/2020 18:25
	VSP-2 S	MS	20121516-001 S	W	84260	180502	12/17/2020 10:49	12/17/2020 18:39
	VSP-2 SD	MSD	20121516-001 S	W	84260	180502	12/17/2020 10:49	12/17/2020 18:44
EPA 200.8	VSP-2	Initial	20121516-001	W	84264	180497	12/17/2020 12:37	12/17/2020 16:18
	VSP-3	Initial	20121516-002	W	84264	180497	12/17/2020 12:37	12/17/2020 16:22
	T-1200 Lead EF	Initial	20121516-003	W	84264	180497	12/17/2020 12:37	12/17/2020 16:26
	Effluent VSP-4	Initial	20121516-004	W	84264	180497	12/17/2020 12:37	12/17/2020 16:30
	84264-1-BKS	BKS	84264-1-BKS	W	84264	180497	12/17/2020 12:37	12/17/2020 16:01
	84264-1-BLK	BLK	84264-1-BLK	W	84264	180497	12/17/2020 12:37	12/17/2020 15:56
	Millville 001 S	MS	20121506-001 S	W	84264	180497	12/17/2020 12:37	12/17/2020 16:10
	Millville 001 SD	MSD	20121506-001 S	W	84264	180497	12/17/2020 12:37	12/17/2020 16:14
SM 2340B	VSP-2	Initial	20121516-001	W	84260	180503	12/18/2020 12:59	12/17/2020 18:35
	VSP-3	Initial	20121516-002	W	84260	180503	12/18/2020 12:59	12/17/2020 18:49
	T-1200 Lead EF	Initial	20121516-003	W	84260	180503	12/18/2020 12:59	12/17/2020 18:53
	Effluent VSP-4	Initial	20121516-004	W	84260	180503	12/18/2020 12:59	12/17/2020 18:58
SW-846 8260 B-Modified	Effluent VSP-4	Initial	20121516-004	W	84342	180587	12/22/2020 08:48	12/22/2020 11:35
	TB-121520	Initial	20121516-005	W	84342	180587	12/22/2020 08:48	12/22/2020 13:46
	84342-1-BKS	BKS	84342-1-BKS	W	84342	180587	12/22/2020 08:48	12/22/2020 09:43
	84342-1-BLK	BLK	84342-1-BLK	W	84342	180587	12/22/2020 08:48	12/22/2020 11:12
	84342-1-BSD	BSD	84342-1-BSD	W	84342	180587	12/22/2020 08:48	12/22/2020 10:05

Project Name Kop-Flex

PSS Project No.: 20121516

Analytical Method: EPA 200.8

Seq Number: 180502

Matrix: Water

Prep Method: E200.8_PREP

Date Prep: 12/17/20

MB Sample Id: 84260-1-BLK

LCS Sample Id: 84260-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Aluminum	<100	200	196.2	98	85-115	ug/L	
Copper	<1.000	40.00	39.45	99	85-115	ug/L	
Iron	<100	400	372.8	93	85-115	ug/L	
Lead	<1.000	40.00	39.24	98	85-115	ug/L	
Nickel	<1.000	40.00	37.32	93	85-115	ug/L	
Zinc	<20.00	200	191.3	96	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180497

Matrix: Water

Prep Method: E200.8_PREP

Date Prep: 12/17/20

MB Sample Id: 84264-1-BLK

LCS Sample Id: 84264-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Aluminum	<100	200	197.4	99	85-115	ug/L	
Copper	<1.000	40.00	37.84	95	85-115	ug/L	
Iron	<100	400	422.9	106	85-115	ug/L	
Lead	<1.000	40.00	38.04	95	85-115	ug/L	
Nickel	<1.000	40.00	37.07	93	85-115	ug/L	
Zinc	<20.00	200	192.4	96	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180502

Matrix: Waste Water

Prep Method: E200.8_PREP

Date Prep: 12/17/20

Parent Sample Id: 20121516-001

MS Sample Id: 20121516-001 S

MSD Sample Id: 20121516-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Aluminum	134.7	200	306.8	86	307.9	87	70-130	1	25	ug/L	
Copper	5.488	40.00	44.20	97	47.31	105	70-130	8	25	ug/L	
Iron	<100	400	411.6	103	420.2	105	70-130	2	25	ug/L	
Lead	<1.000	40.00	38.27	96	38.63	97	70-130	1	25	ug/L	
Nickel	15.02	40.00	52.21	93	55.63	102	70-130	9	25	ug/L	
Zinc	40.14	200	218.7	89	247	103	70-130	15	25	ug/L	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 180587

Matrix: Water

Prep Method: SW5030B

Date Prep: 12/22/20

MB Sample Id: 84342-1-BLK

LCS Sample Id: 84342-1-BKS

LCSD Sample Id: 84342-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
1,4-Dioxane (P-Dioxane)	<1.000	30.00	31.20	104	31.83	106	50-150	2	20	ug/L	
Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units			
Toluene-D8	99		103		102		80-120	%			

Project Name Kop-Flex
PSS Project No.: 20121516

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Project Name Kop-Flex
PSS Project No.: 20121516

Analytical Method: EPA 200.8

Seq Number: 180497 Matrix: Water
CCV Sample Id: CCV 3

Analyzed Date: 12/17/20 15:37

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	211.3	106	85-115	ug/L	
Copper	40.00	39.48	99	85-115	ug/L	
Iron	400	389	97	85-115	ug/L	
Lead	40.00	42.18	105	85-115	ug/L	
Nickel	40.00	38.40	96	85-115	ug/L	
Zinc	200	197.2	99	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180497 Matrix: Water
CCV Sample Id: CCV 4

Analyzed Date: 12/17/20 16:46

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	202.3	101	85-115	ug/L	
Copper	40.00	39.88	100	85-115	ug/L	
Iron	400	380.9	95	85-115	ug/L	
Lead	40.00	39.66	99	85-115	ug/L	
Nickel	40.00	38.36	96	85-115	ug/L	
Zinc	200	198.1	99	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180497 Matrix: Water
CCV Sample Id: CCV 6

Analyzed Date: 12/17/20 18:11

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	209.5	105	85-115	ug/L	
Copper	40.00	39.29	98	85-115	ug/L	
Iron	400	377.6	94	85-115	ug/L	
Lead	40.00	41.66	104	85-115	ug/L	
Nickel	40.00	38.10	95	85-115	ug/L	
Zinc	200	194.9	97	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180502 Matrix: Water
CCV Sample Id: CCV 6

Analyzed Date: 12/17/20 18:11

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	209.5	105	85-115	ug/L	
Copper	40.00	39.29	98	85-115	ug/L	
Iron	400	377.6	94	85-115	ug/L	
Lead	40.00	41.66	104	85-115	ug/L	
Nickel	40.00	38.10	95	85-115	ug/L	
Zinc	200	194.9	97	85-115	ug/L	

Project Name Kop-Flex
PSS Project No.: 20121516

Analytical Method: EPA 200.8

Seq Number: 180502 Matrix: Water
CCV Sample Id: CCV 8

Analyzed Date: 12/17/20 19:24

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	202.3	101	85-115	ug/L	
Copper	40.00	39.40	99	85-115	ug/L	
Iron	400	378.3	95	85-115	ug/L	
Lead	40.00	40.31	101	85-115	ug/L	
Nickel	40.00	38.13	95	85-115	ug/L	
Zinc	200	194.9	97	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180502 Matrix: Water
CCV Sample Id: CCV 9

Analyzed Date: 12/17/20 20:39

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Aluminum	200	201.7	101	85-115	ug/L	
Copper	40.00	38.98	97	85-115	ug/L	
Iron	400	378.5	95	85-115	ug/L	
Lead	40.00	39.26	98	85-115	ug/L	
Nickel	40.00	37.92	95	85-115	ug/L	
Zinc	200	193.2	97	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180497 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1

Analyzed Date: 12/17/20 11:50

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Aluminum	200	203.2	102	90-110	ug/L	
Copper	40.00	39.93	100	90-110	ug/L	
Iron	400	397	99	90-110	ug/L	
Lead	40.00	40.29	101	90-110	ug/L	
Nickel	40.00	38.99	97	90-110	ug/L	
Zinc	200	198.7	99	90-110	ug/L	

Analytical Method: EPA 200.8

Seq Number: 180502 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1

Analyzed Date: 12/17/20 11:50

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Aluminum	200	203.2	102	90-110	ug/L	
Copper	40.00	39.93	100	90-110	ug/L	
Iron	400	397	99	90-110	ug/L	
Lead	40.00	40.29	101	90-110	ug/L	
Nickel	40.00	38.99	97	90-110	ug/L	
Zinc	200	198.7	99	90-110	ug/L	

Project Name Kop-Flex
PSS Project No.: 20121516

Analytical Method: SW-846 8260 B-Modified

Seq Number: 175110 Matrix: Water
CCV Sample Id: CCV-01

Analyzed Date: 06/11/20 11:36

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	30.40	101	80-120	ug/L	
Surrogate		CCV Result		Limits	Units	Flag
Toluene-D8		99		80-120	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 180587 Matrix: Water
CCV Sample Id: CCV-01

Analyzed Date: 12/22/20 09:21

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	29.03	97	80-120	ug/L	
Surrogate		CCV Result		Limits	Units	Flag
Toluene-D8		104		80-120	%	

Analytical Method: SW-846 8260 B-Modified

Seq Number: 175110 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01

Analyzed Date: 06/11/20 11:14

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
1,4-Dioxane (P-Dioxane)	30.00	31.22	104	70-130	ug/L	
Surrogate		ICV Result		Limits	Units	Flag
Toluene-D8		99		80-120	%	

X = Recovery outside of QC Criteria

**PHASE
SEPARATION
SCIENCE**

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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PSS CLIENT: WSP USA		OFFICE LOCATION: Herndon, VA		PSS Work Order #: 20121516				PAGE 1 OF 1							
BILL TO (if different):		PHONE #: 703-709-6500		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soll SOL=Solid A=Air WI=Wipe											
CONTACT: Eric Johnson		EMAIL: eric.johnson@wsp.com		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes: 3 3 1						Preservative Codes			
PROJECT NAME: Kop-Flex		PROJECT #: 3140545.010/04				Analysis/Method Required ③ Total Metals + Hardness (200g) Dissolved Metals (200g) 14-dioxane (8260B 5.1M)						1 - HCL			
SITE LOCATION: Hanover, MD		P.O. #:										9 - TerraCore Kit			
SAMPLER(S): Shannon Burke		DW CERT #:										8 - Ascorbic Acid			
SAMPLER(S): Shannon Burke		DW CERT #:		7 - Sodium Thiosulfate		6 - ICE		5 - E624KIT		4 - NaOH					
SAMPLER(S): Shannon Burke		DW CERT #:		3 - HNO ₃		2 - H ₂ SO ₄		1 - HCL							
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes						Preservative Codes		
1	VSP-2	12/15/20	2:11:40	WW	2	G	X	X							Time 1140
2	VSP-3	12/15/20	2:11:50	WW	2	G	X	X							Time 1150
3	T-1200 Lead ER	12/15/20	2:11:55	WW	2	G	X	X							Time 1155
4	Effluent VSP-4	12/15/20	5:11:30	WW	5	G	X	X	X						Time 1130
5	TB-121520			W	2	-			X						
Relinquished By: (1) <i>Shannon Burke</i>		Date 12/15/20	Time 1422	Received By: <i>Ch Burke</i>	Requested TAT (One TAT per COC) <input checked="" type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input type="checkbox"/> Other				Ice Present: YES TB: 3.1°C						
Relinquished By: (2)		Date	Time	Received By:	STATE RESULTS REPORTED TO: <input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER				Custody Seal: Cooler-Intact						
Relinquished By: (3)		Date	Time	Received By:	COMPLIANCE? <input type="checkbox"/> DW <input type="checkbox"/> WW				# Coolers: YES Temp: 1.2-1.9°C						
Relinquished By: (4)		Date	Time	Received By:	EDD FORMAT TYPE				Shipping Carrier: Ch Burke						
					Special Instructions: Metals = Al, Cu, Fe, Pb, Ni, Zn Dissolved metals samples field filtered at time of collection.										

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure of PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Kop-Flex
PSS Project No.: 20121516

Client Name WSP USA - Herndon
Disposal Date 01/19/2021

Received By Thomas Wingate
Date Received 12/15/2020 02:22:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? Yes
Seal(s) Signed / Dated? Yes

Ice Present
Temp (deg C) 1.9
Temp Blank Present Yes

Documentation

COC agrees with sample labels? Yes
Chain of Custody Yes

Sampler Name Shannon Burke
MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
Intact? Yes
Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 5
Total No. of Containers Received 13

Preservation

Total Metals (pH<2) Yes
Dissolved Metals, filtered within 15 minutes of collection (pH<2) Yes
Orthophosphorus, filtered within 15 minutes of collection N/A
Cyanides (pH>12) N/A
Sulfide (pH>9) N/A
TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
TOX, TKN, NH3, Total Phos (pH<2) N/A
VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
Do VOA vials have zero headspace? Yes
624 VOC (Rcvd at least one unpreserved VOA vial) N/A
524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

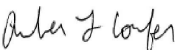
Samples Inspected/Checklist Completed By:



Thomas Wingate

Date: 12/15/2020

PM Review and Approval:



Amber Confer

Date: 12/15/2020

APPENDIX

D

PRE-TREATMENT TECHNOLOGY EVALUATION

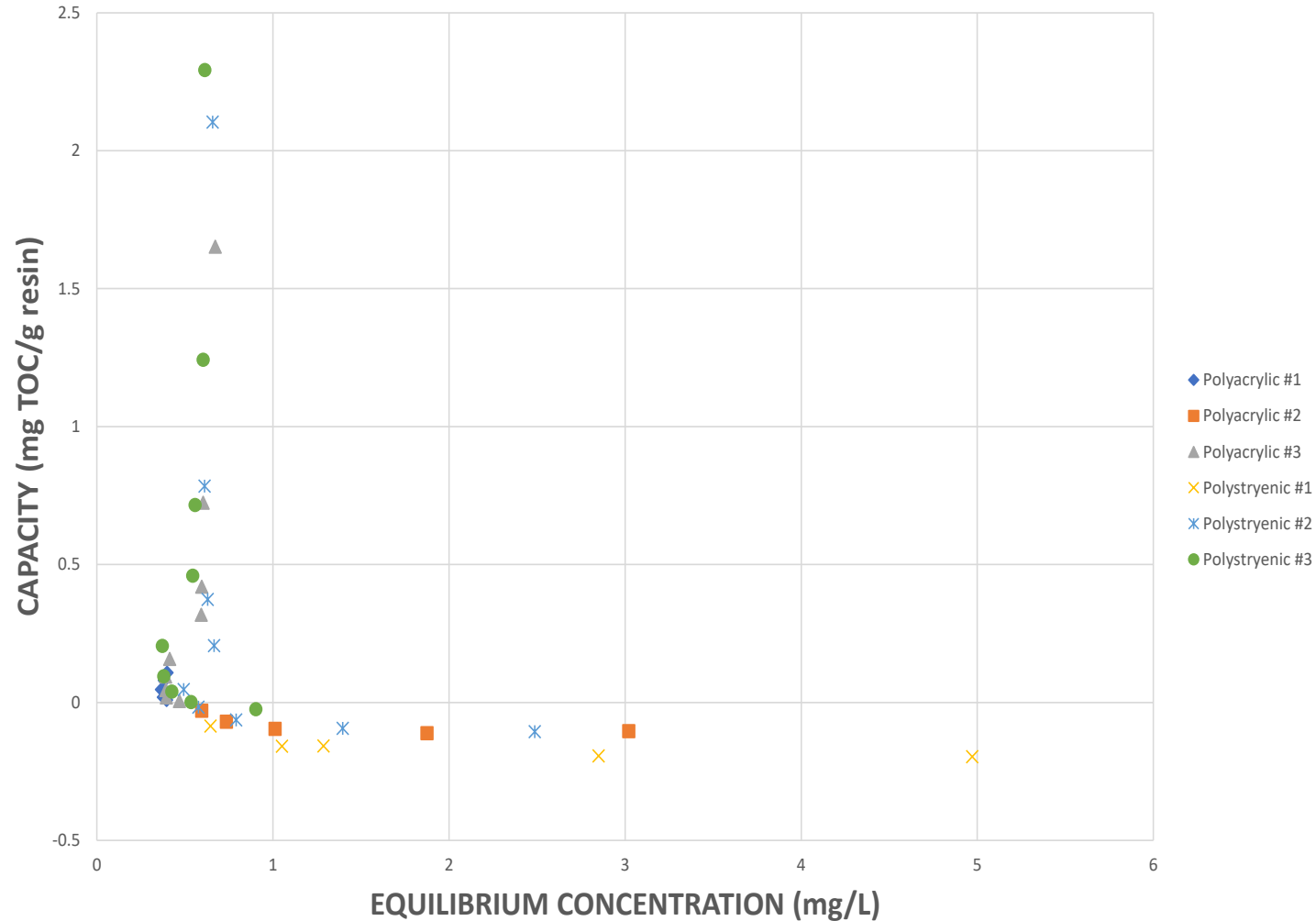
Isotherm Testing

- Multi point isotherm testing with (6) IX resins
 - (3) Polyacrylic
 - (3) Polystyrenic
- The nature of the TOC (NOM) and the relatively low concentration (< 1 ppm), made isotherm testing challenging.



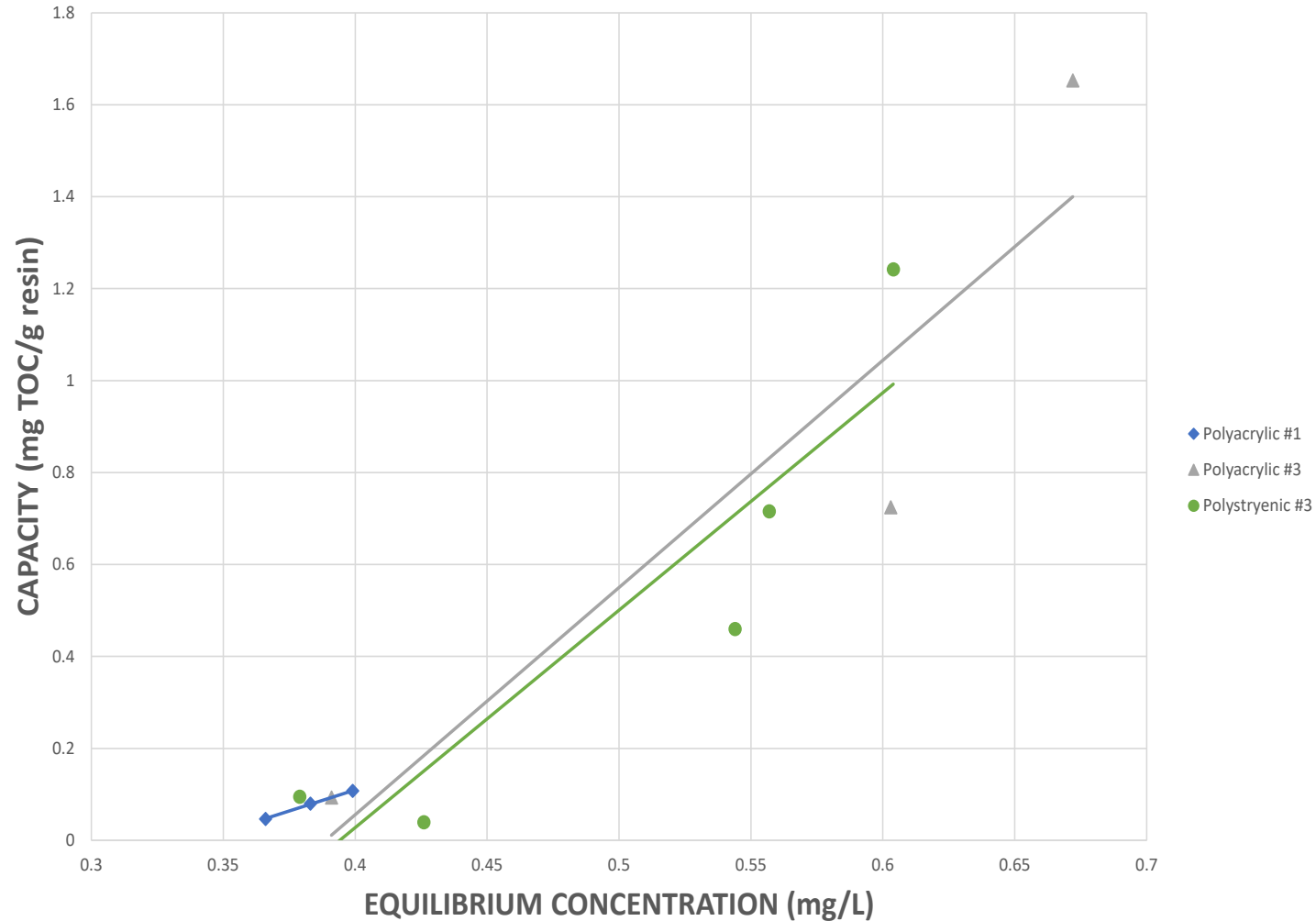


WSP HANOVER - 24 HR ISOTHERM (ALL DATA)



- Figure shows all TOC data
- Negative capacity (i.e., equilibrium concentration greater than untreated concentration) indicates for some resins are adding TOC.
- Removing outlier data points →

WSP HANOVER - 24 HR ISOTHERM
(OUTLIER DATA POINTS REMOVED)



- Figure shows all TOC data with “outlier” data points removed
- Three (3) candidate resins show promising TOC removal and (2) are recommended for column testing
 - Polyacrylic #1
 - Polystyrenic #3
- For the water tested, the estimated TOC removal capacity ranged from ~0.6 to ~1.6 mg/g



Column Testing

- Isotherm TOC capacity estimates ranged from 0.6 to 1.6 mg/g
- Dynamic capacity typically ranges from 30% (hydrophilic compounds) to 70% (hydrophobic compounds) of this isotherm capacity...dynamic capacity is estimated to be <50% of the isotherm capacity
- Recommended column size for bench testing is 1" SCH40 PVC x 36" bed height
- Test water volume is estimated at ~300 gal per-resin per week for a 1 month test (i.e., 4 x 330 gal IBC totes per resin)
- The current R&D lab location does not have the lay down area to accept 8 IBC totes
- ECT2 recommends on-site column testing.



APPENDIX

E LAB REPORTS FOR GROUNDWATER MONITORING

May 28, 2020

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

RE: Project: Kop-Flex onsite
Pace Project No.: 92478032

Dear Eric Johnson:

Enclosed are the analytical results for sample(s) received by the laboratory on May 18, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

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
Pam Robertson, WSP USA



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Pace Analytical Services Charlotte

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

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SAMPLE SUMMARY

Project: Kop-Flex onsite

Pace Project No.: 92478032

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92478032001	MW-03	Water	05/12/20 11:45	05/18/20 09:12
92478032002	MW-43	Water	05/12/20 12:05	05/18/20 09:12
92478032003	MW-39	Water	05/12/20 12:25	05/18/20 09:12
92478032004	MW-42	Water	05/12/20 12:35	05/18/20 09:12
92478032005	MW-18	Water	05/12/20 12:50	05/18/20 09:12
92478032006	MW-38R	Water	05/12/20 14:05	05/18/20 09:12
92478032007	MW-40D	Water	05/12/20 14:20	05/18/20 09:12
92478032008	MW-21D	Water	05/12/20 15:15	05/18/20 09:12
92478032009	MW-5R	Water	05/12/20 16:25	05/18/20 09:12
92478032010	MW-41D	Water	05/12/20 16:40	05/18/20 09:12
92478032011	MW-1D	Water	05/12/20 17:05	05/18/20 09:12
92478032012	MW-22D	Water	05/12/20 17:20	05/18/20 09:12
92478032013	MW-04	Water	05/13/20 10:10	05/18/20 09:12
92478032014	MW-20	Water	05/13/20 10:30	05/18/20 09:12
92478032015	MW-09	Water	05/13/20 10:45	05/18/20 09:12
92478032016	MW-23D	Water	05/13/20 11:00	05/18/20 09:12
92478032017	MW-27D	Water	05/13/20 13:10	05/18/20 09:12
92478032018	Trip Blank A	Water	05/13/20 00:00	05/18/20 09:12
92478032019	Trip Blank B	Water	05/13/20 00:00	05/18/20 09:12
92478032020	MW-44	Water	05/13/20 17:30	05/18/20 09:12
92478032021	MW-16D	Water	05/13/20 17:50	05/18/20 09:12
92478032022	Dup-051320	Water	05/13/20 09:00	05/18/20 09:12
92478032023	MW-16	Water	05/13/20 18:00	05/18/20 09:12
92478032024	MW-01	Water	05/14/20 10:18	05/18/20 09:12
92478032025	Trip Blank C	Water	05/14/20 00:00	05/18/20 09:12

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SAMPLE ANALYTE COUNT

Project: Kop-Flex onsite
Pace Project No.: 92478032

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92478032001	MW-03	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032002	MW-43	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032003	MW-39	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032004	MW-42	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032005	MW-18	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032006	MW-38R	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032007	MW-40D	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032008	MW-21D	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032009	MW-5R	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032010	MW-41D	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032011	MW-1D	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032012	MW-22D	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032013	MW-04	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032014	MW-20	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032015	MW-09	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032016	MW-23D	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032017	MW-27D	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032018	Trip Blank A	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478032019	Trip Blank B	EPA 8260D	CL	63	PASI-C

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SAMPLE ANALYTE COUNT

Project: Kop-Flex onsite
Pace Project No.: 92478032

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92478032020	MW-44	EPA 8260D Mod.	LMB	3	PASI-C
		EPA 8260D	CL	63	PASI-C
92478032021	MW-16D	EPA 8260D Mod.	LMB	3	PASI-C
		EPA 8260D	CL	63	PASI-C
92478032022	Dup-051320	EPA 8260D Mod.	LMB	3	PASI-C
		EPA 8260D	CL	63	PASI-C
92478032023	MW-16	EPA 8260D Mod.	LMB	3	PASI-C
		EPA 8260D	CL	63	PASI-C
92478032024	MW-01	EPA 8260D Mod.	LMB	3	PASI-C
		EPA 8260D	CL	63	PASI-C
92478032025	Trip Blank C	EPA 8260D Mod.	LMB	3	PASI-C
		EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C

PASI-C = Pace Analytical Services - Charlotte

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-03	Lab ID: 92478032001	Collected: 05/12/20 11:45	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D						
		Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/24/20 03:37	67-64-1	
Benzene	ND	ug/L	1.0	1		05/24/20 03:37	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/24/20 03:37	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/24/20 03:37	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/24/20 03:37	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/24/20 03:37	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/24/20 03:37	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		05/24/20 03:37	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/24/20 03:37	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/24/20 03:37	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/24/20 03:37	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/24/20 03:37	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/24/20 03:37	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 03:37	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 03:37	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/24/20 03:37	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/24/20 03:37	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/24/20 03:37	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/24/20 03:37	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:37	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:37	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:37	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/24/20 03:37	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/24/20 03:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/24/20 03:37	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/24/20 03:37	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 03:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 03:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 03:37	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/24/20 03:37	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 03:37	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/24/20 03:37	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 03:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 03:37	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/24/20 03:37	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/24/20 03:37	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/24/20 03:37	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/24/20 03:37	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/24/20 03:37	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/24/20 03:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/24/20 03:37	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/24/20 03:37	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/24/20 03:37	91-20-3	
Styrene	ND	ug/L	1.0	1		05/24/20 03:37	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 03:37	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 03:37	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-03	Lab ID: 92478032001	Collected: 05/12/20 11:45	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/24/20 03:37	127-18-4	
Toluene	ND	ug/L	1.0	1		05/24/20 03:37	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:37	87-61-6	IH
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:37	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/24/20 03:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/24/20 03:37	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/24/20 03:37	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/24/20 03:37	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/24/20 03:37	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/24/20 03:37	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/24/20 03:37	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/24/20 03:37	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/24/20 03:37	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/24/20 03:37	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/24/20 03:37	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	70-130	1		05/24/20 03:37	17060-07-0	
Toluene-d8 (S)	98	%	70-130	1		05/24/20 03:37	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/20/20 23:48	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	109	%	50-150	1		05/20/20 23:48	17060-07-0	
Toluene-d8 (S)	105	%	50-150	1		05/20/20 23:48	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-43	Lab ID: 92478032002	Collected: 05/12/20 12:05	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D						
		Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/24/20 03:19	67-64-1	
Benzene	ND	ug/L	1.0	1		05/24/20 03:19	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/24/20 03:19	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/24/20 03:19	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/24/20 03:19	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/24/20 03:19	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/24/20 03:19	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		05/24/20 03:19	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/24/20 03:19	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/24/20 03:19	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/24/20 03:19	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/24/20 03:19	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/24/20 03:19	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 03:19	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 03:19	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/24/20 03:19	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/24/20 03:19	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/24/20 03:19	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/24/20 03:19	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:19	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:19	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:19	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/24/20 03:19	75-71-8	
1,1-Dichloroethane	3.8	ug/L	1.0	1		05/24/20 03:19	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/24/20 03:19	107-06-2	
1,1-Dichloroethene	46.3	ug/L	1.0	1		05/24/20 03:19	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 03:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 03:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 03:19	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/24/20 03:19	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 03:19	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/24/20 03:19	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 03:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 03:19	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/24/20 03:19	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/24/20 03:19	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/24/20 03:19	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/24/20 03:19	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/24/20 03:19	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/24/20 03:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/24/20 03:19	108-10-1	
Methyl-tert-butyl ether	3.4	ug/L	1.0	1		05/24/20 03:19	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/24/20 03:19	91-20-3	
Styrene	ND	ug/L	1.0	1		05/24/20 03:19	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 03:19	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 03:19	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-43	Lab ID: 92478032002	Collected: 05/12/20 12:05	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/24/20 03:19	127-18-4	
Toluene	ND	ug/L	1.0	1		05/24/20 03:19	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:19	87-61-6	IH
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:19	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/24/20 03:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/24/20 03:19	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/24/20 03:19	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/24/20 03:19	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/24/20 03:19	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/24/20 03:19	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/24/20 03:19	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/24/20 03:19	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/24/20 03:19	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/24/20 03:19	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	1		05/24/20 03:19	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	70-130	1		05/24/20 03:19	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/24/20 03:19	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	49.0	ug/L	2.0	1		05/21/20 00:08	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%	50-150	1		05/21/20 00:08	17060-07-0	
Toluene-d8 (S)	103	%	50-150	1		05/21/20 00:08	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-39	Lab ID: 92478032003	Collected: 05/12/20 12:25	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/24/20 03:01	67-64-1	
Benzene	ND	ug/L	1.0	1		05/24/20 03:01	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/24/20 03:01	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/24/20 03:01	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/24/20 03:01	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/24/20 03:01	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/24/20 03:01	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		05/24/20 03:01	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/24/20 03:01	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/24/20 03:01	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/24/20 03:01	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/24/20 03:01	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/24/20 03:01	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 03:01	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 03:01	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/24/20 03:01	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/24/20 03:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/24/20 03:01	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/24/20 03:01	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:01	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:01	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:01	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/24/20 03:01	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/24/20 03:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/24/20 03:01	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/24/20 03:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 03:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 03:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 03:01	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/24/20 03:01	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 03:01	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/24/20 03:01	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 03:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 03:01	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/24/20 03:01	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/24/20 03:01	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/24/20 03:01	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/24/20 03:01	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/24/20 03:01	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/24/20 03:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/24/20 03:01	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/24/20 03:01	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/24/20 03:01	91-20-3	
Styrene	ND	ug/L	1.0	1		05/24/20 03:01	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 03:01	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 03:01	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-39	Lab ID: 92478032003	Collected: 05/12/20 12:25	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/24/20 03:01	127-18-4	
Toluene	ND	ug/L	1.0	1		05/24/20 03:01	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:01	87-61-6	IH
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:01	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/24/20 03:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/24/20 03:01	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/24/20 03:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/24/20 03:01	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/24/20 03:01	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/24/20 03:01	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/24/20 03:01	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/24/20 03:01	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/24/20 03:01	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/24/20 03:01	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	105	%	70-130	1		05/24/20 03:01	460-00-4	
1,2-Dichloroethane-d4 (S)	116	%	70-130	1		05/24/20 03:01	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		05/24/20 03:01	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/21/20 00:27	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	50-150	1		05/21/20 00:27	17060-07-0	
Toluene-d8 (S)	103	%	50-150	1		05/21/20 00:27	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-42	Lab ID: 92478032004	Collected: 05/12/20 12:35	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D						
		Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/24/20 02:42	67-64-1	
Benzene	ND	ug/L	1.0	1		05/24/20 02:42	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/24/20 02:42	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/24/20 02:42	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/24/20 02:42	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/24/20 02:42	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/24/20 02:42	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		05/24/20 02:42	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/24/20 02:42	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/24/20 02:42	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/24/20 02:42	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/24/20 02:42	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/24/20 02:42	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 02:42	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 02:42	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/24/20 02:42	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/24/20 02:42	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/24/20 02:42	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/24/20 02:42	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 02:42	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 02:42	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 02:42	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/24/20 02:42	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/24/20 02:42	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/24/20 02:42	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/24/20 02:42	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 02:42	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 02:42	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 02:42	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/24/20 02:42	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 02:42	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/24/20 02:42	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 02:42	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 02:42	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/24/20 02:42	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/24/20 02:42	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/24/20 02:42	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/24/20 02:42	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/24/20 02:42	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/24/20 02:42	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/24/20 02:42	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/24/20 02:42	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/24/20 02:42	91-20-3	
Styrene	ND	ug/L	1.0	1		05/24/20 02:42	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 02:42	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 02:42	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-42	Lab ID: 92478032004	Collected: 05/12/20 12:35	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/24/20 02:42	127-18-4	
Toluene	ND	ug/L	1.0	1		05/24/20 02:42	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 02:42	87-61-6	IH
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 02:42	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/24/20 02:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/24/20 02:42	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/24/20 02:42	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/24/20 02:42	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/24/20 02:42	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/24/20 02:42	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/24/20 02:42	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/24/20 02:42	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/24/20 02:42	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/24/20 02:42	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		05/24/20 02:42	460-00-4	
1,2-Dichloroethane-d4 (S)	113	%	70-130	1		05/24/20 02:42	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/24/20 02:42	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	11.2	ug/L	2.0	1		05/21/20 00:47	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%	50-150	1		05/21/20 00:47	17060-07-0	
Toluene-d8 (S)	97	%	50-150	1		05/21/20 00:47	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-18	Lab ID: 92478032005	Collected: 05/12/20 12:50	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D						
		Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/24/20 02:24	67-64-1	
Benzene	ND	ug/L	1.0	1		05/24/20 02:24	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/24/20 02:24	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/24/20 02:24	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/24/20 02:24	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/24/20 02:24	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/24/20 02:24	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		05/24/20 02:24	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/24/20 02:24	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/24/20 02:24	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/24/20 02:24	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/24/20 02:24	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/24/20 02:24	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 02:24	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 02:24	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/24/20 02:24	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/24/20 02:24	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/24/20 02:24	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/24/20 02:24	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 02:24	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 02:24	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 02:24	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/24/20 02:24	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/24/20 02:24	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/24/20 02:24	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/24/20 02:24	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 02:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 02:24	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 02:24	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/24/20 02:24	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 02:24	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/24/20 02:24	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 02:24	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 02:24	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/24/20 02:24	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/24/20 02:24	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/24/20 02:24	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/24/20 02:24	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/24/20 02:24	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/24/20 02:24	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/24/20 02:24	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/24/20 02:24	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/24/20 02:24	91-20-3	
Styrene	ND	ug/L	1.0	1		05/24/20 02:24	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 02:24	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 02:24	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-18	Lab ID: 92478032005	Collected: 05/12/20 12:50	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/24/20 02:24	127-18-4	
Toluene	ND	ug/L	1.0	1		05/24/20 02:24	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 02:24	87-61-6	IH
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 02:24	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/24/20 02:24	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/24/20 02:24	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/24/20 02:24	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/24/20 02:24	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/24/20 02:24	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/24/20 02:24	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/24/20 02:24	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/24/20 02:24	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/24/20 02:24	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/24/20 02:24	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		05/24/20 02:24	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130	1		05/24/20 02:24	17060-07-0	
Toluene-d8 (S)	98	%	70-130	1		05/24/20 02:24	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/21/20 01:08	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	96	%	50-150	1		05/21/20 01:08	17060-07-0	
Toluene-d8 (S)	103	%	50-150	1		05/21/20 01:08	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-38R	Lab ID: 92478032006	Collected: 05/12/20 14:05	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D						
		Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/24/20 02:06	67-64-1	
Benzene	ND	ug/L	1.0	1		05/24/20 02:06	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/24/20 02:06	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/24/20 02:06	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/24/20 02:06	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/24/20 02:06	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/24/20 02:06	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		05/24/20 02:06	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/24/20 02:06	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/24/20 02:06	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/24/20 02:06	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/24/20 02:06	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/24/20 02:06	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 02:06	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 02:06	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/24/20 02:06	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/24/20 02:06	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/24/20 02:06	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/24/20 02:06	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 02:06	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 02:06	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 02:06	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/24/20 02:06	75-71-8	
1,1-Dichloroethane	6.2	ug/L	1.0	1		05/24/20 02:06	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/24/20 02:06	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/24/20 02:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 02:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 02:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 02:06	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/24/20 02:06	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 02:06	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/24/20 02:06	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 02:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 02:06	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/24/20 02:06	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/24/20 02:06	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/24/20 02:06	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/24/20 02:06	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/24/20 02:06	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/24/20 02:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/24/20 02:06	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/24/20 02:06	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/24/20 02:06	91-20-3	
Styrene	ND	ug/L	1.0	1		05/24/20 02:06	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 02:06	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 02:06	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-38R	Lab ID: 92478032006	Collected: 05/12/20 14:05	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Tetrachloroethene	ND	ug/L	1.0	1		05/24/20 02:06	127-18-4	
Toluene	ND	ug/L	1.0	1		05/24/20 02:06	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 02:06	87-61-6	IH
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 02:06	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/24/20 02:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/24/20 02:06	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/24/20 02:06	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/24/20 02:06	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/24/20 02:06	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/24/20 02:06	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/24/20 02:06	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/24/20 02:06	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/24/20 02:06	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/24/20 02:06	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		05/24/20 02:06	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	70-130	1		05/24/20 02:06	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		05/24/20 02:06	2037-26-5	
8260D MSV SIM		Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte						
1,4-Dioxane (p-Dioxane)	40.8	ug/L	2.0	1		05/21/20 01:28	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%	50-150	1		05/21/20 01:28	17060-07-0	
Toluene-d8 (S)	104	%	50-150	1		05/21/20 01:28	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-40D	Lab ID: 92478032007	Collected: 05/12/20 14:20	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/24/20 01:48	67-64-1	
Benzene	ND	ug/L	1.0	1		05/24/20 01:48	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/24/20 01:48	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/24/20 01:48	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/24/20 01:48	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/24/20 01:48	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/24/20 01:48	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		05/24/20 01:48	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/24/20 01:48	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/24/20 01:48	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/24/20 01:48	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/24/20 01:48	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/24/20 01:48	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 01:48	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 01:48	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/24/20 01:48	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/24/20 01:48	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/24/20 01:48	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/24/20 01:48	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 01:48	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 01:48	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 01:48	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/24/20 01:48	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/24/20 01:48	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/24/20 01:48	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/24/20 01:48	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 01:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 01:48	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 01:48	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/24/20 01:48	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 01:48	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/24/20 01:48	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 01:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 01:48	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/24/20 01:48	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/24/20 01:48	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/24/20 01:48	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/24/20 01:48	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/24/20 01:48	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/24/20 01:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/24/20 01:48	108-10-1	
Methyl-tert-butyl ether	3.1	ug/L	1.0	1		05/24/20 01:48	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/24/20 01:48	91-20-3	
Styrene	ND	ug/L	1.0	1		05/24/20 01:48	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 01:48	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 01:48	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-40D	Lab ID: 92478032007	Collected: 05/12/20 14:20	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/24/20 01:48	127-18-4	
Toluene	ND	ug/L	1.0	1		05/24/20 01:48	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 01:48	87-61-6	IH
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 01:48	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/24/20 01:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/24/20 01:48	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/24/20 01:48	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/24/20 01:48	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/24/20 01:48	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/24/20 01:48	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/24/20 01:48	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/24/20 01:48	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/24/20 01:48	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/24/20 01:48	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		05/24/20 01:48	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	70-130	1		05/24/20 01:48	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		05/24/20 01:48	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/21/20 01:47	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%	50-150	1		05/21/20 01:47	17060-07-0	
Toluene-d8 (S)	105	%	50-150	1		05/21/20 01:47	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-21D	Lab ID: 92478032008	Collected: 05/12/20 15:15	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D						
		Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/24/20 01:30	67-64-1	
Benzene	ND	ug/L	1.0	1		05/24/20 01:30	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/24/20 01:30	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/24/20 01:30	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/24/20 01:30	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/24/20 01:30	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/24/20 01:30	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		05/24/20 01:30	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/24/20 01:30	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/24/20 01:30	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/24/20 01:30	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/24/20 01:30	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/24/20 01:30	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 01:30	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 01:30	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/24/20 01:30	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/24/20 01:30	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/24/20 01:30	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/24/20 01:30	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 01:30	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 01:30	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 01:30	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/24/20 01:30	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/24/20 01:30	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/24/20 01:30	107-06-2	
1,1-Dichloroethene	13.6	ug/L	1.0	1		05/24/20 01:30	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 01:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 01:30	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 01:30	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/24/20 01:30	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 01:30	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/24/20 01:30	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 01:30	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 01:30	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/24/20 01:30	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/24/20 01:30	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/24/20 01:30	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/24/20 01:30	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/24/20 01:30	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/24/20 01:30	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/24/20 01:30	108-10-1	
Methyl-tert-butyl ether	2.9	ug/L	1.0	1		05/24/20 01:30	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/24/20 01:30	91-20-3	
Styrene	ND	ug/L	1.0	1		05/24/20 01:30	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 01:30	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 01:30	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-21D	Lab ID: 92478032008	Collected: 05/12/20 15:15	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/24/20 01:30	127-18-4	
Toluene	ND	ug/L	1.0	1		05/24/20 01:30	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 01:30	87-61-6	IH
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 01:30	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/24/20 01:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/24/20 01:30	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/24/20 01:30	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/24/20 01:30	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/24/20 01:30	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/24/20 01:30	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/24/20 01:30	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/24/20 01:30	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/24/20 01:30	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/24/20 01:30	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	1		05/24/20 01:30	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130	1		05/24/20 01:30	17060-07-0	
Toluene-d8 (S)	106	%	70-130	1		05/24/20 01:30	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	7.6	ug/L	2.0	1		05/21/20 02:07	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	96	%	50-150	1		05/21/20 02:07	17060-07-0	
Toluene-d8 (S)	101	%	50-150	1		05/21/20 02:07	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-5R	Lab ID: 92478032009	Collected: 05/12/20 16:25	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/24/20 01:12	67-64-1	
Benzene	ND	ug/L	1.0	1		05/24/20 01:12	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/24/20 01:12	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/24/20 01:12	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/24/20 01:12	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/24/20 01:12	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/24/20 01:12	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		05/24/20 01:12	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/24/20 01:12	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/24/20 01:12	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/24/20 01:12	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/24/20 01:12	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/24/20 01:12	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 01:12	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 01:12	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/24/20 01:12	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/24/20 01:12	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/24/20 01:12	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/24/20 01:12	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 01:12	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 01:12	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 01:12	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/24/20 01:12	75-71-8	
1,1-Dichloroethane	1.8	ug/L	1.0	1		05/24/20 01:12	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/24/20 01:12	107-06-2	
1,1-Dichloroethene	1.7	ug/L	1.0	1		05/24/20 01:12	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 01:12	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 01:12	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 01:12	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/24/20 01:12	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 01:12	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/24/20 01:12	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 01:12	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 01:12	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/24/20 01:12	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/24/20 01:12	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/24/20 01:12	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/24/20 01:12	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/24/20 01:12	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/24/20 01:12	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/24/20 01:12	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/24/20 01:12	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/24/20 01:12	91-20-3	
Styrene	ND	ug/L	1.0	1		05/24/20 01:12	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 01:12	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 01:12	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-5R	Lab ID: 92478032009	Collected: 05/12/20 16:25	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/24/20 01:12	127-18-4	
Toluene	ND	ug/L	1.0	1		05/24/20 01:12	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 01:12	87-61-6	IH
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 01:12	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/24/20 01:12	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/24/20 01:12	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/24/20 01:12	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/24/20 01:12	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/24/20 01:12	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/24/20 01:12	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/24/20 01:12	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/24/20 01:12	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/24/20 01:12	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/24/20 01:12	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	1		05/24/20 01:12	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	70-130	1		05/24/20 01:12	17060-07-0	
Toluene-d8 (S)	100	%	70-130	1		05/24/20 01:12	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	13.4	ug/L	2.0	1		05/21/20 02:28	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	50-150	1		05/21/20 02:28	17060-07-0	
Toluene-d8 (S)	107	%	50-150	1		05/21/20 02:28	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-41D	Lab ID: 92478032010	Collected: 05/12/20 16:40	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/24/20 06:01	67-64-1	
Benzene	ND	ug/L	1.0	1		05/24/20 06:01	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/24/20 06:01	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/24/20 06:01	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/24/20 06:01	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/24/20 06:01	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/24/20 06:01	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		05/24/20 06:01	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/24/20 06:01	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/24/20 06:01	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/24/20 06:01	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/24/20 06:01	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/24/20 06:01	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 06:01	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 06:01	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/24/20 06:01	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/24/20 06:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/24/20 06:01	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/24/20 06:01	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 06:01	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 06:01	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 06:01	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/24/20 06:01	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/24/20 06:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/24/20 06:01	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/24/20 06:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 06:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 06:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 06:01	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/24/20 06:01	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 06:01	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/24/20 06:01	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 06:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 06:01	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/24/20 06:01	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/24/20 06:01	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/24/20 06:01	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/24/20 06:01	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/24/20 06:01	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/24/20 06:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/24/20 06:01	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/24/20 06:01	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/24/20 06:01	91-20-3	
Styrene	ND	ug/L	1.0	1		05/24/20 06:01	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 06:01	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 06:01	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-41D	Lab ID: 92478032010	Collected: 05/12/20 16:40	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/24/20 06:01	127-18-4	
Toluene	ND	ug/L	1.0	1		05/24/20 06:01	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 06:01	87-61-6	IH
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 06:01	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/24/20 06:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/24/20 06:01	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/24/20 06:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/24/20 06:01	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/24/20 06:01	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/24/20 06:01	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/24/20 06:01	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/24/20 06:01	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/24/20 06:01	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/24/20 06:01	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		05/24/20 06:01	460-00-4	
1,2-Dichloroethane-d4 (S)	118	%	70-130	1		05/24/20 06:01	17060-07-0	
Toluene-d8 (S)	100	%	70-130	1		05/24/20 06:01	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/21/20 02:47	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	50-150	1		05/21/20 02:47	17060-07-0	
Toluene-d8 (S)	105	%	50-150	1		05/21/20 02:47	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-1D	Lab ID: 92478032011	Collected: 05/12/20 17:05	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D						
		Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/24/20 05:43	67-64-1	
Benzene	ND	ug/L	1.0	1		05/24/20 05:43	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/24/20 05:43	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/24/20 05:43	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/24/20 05:43	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/24/20 05:43	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/24/20 05:43	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		05/24/20 05:43	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/24/20 05:43	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/24/20 05:43	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/24/20 05:43	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/24/20 05:43	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/24/20 05:43	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 05:43	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 05:43	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/24/20 05:43	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/24/20 05:43	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/24/20 05:43	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/24/20 05:43	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 05:43	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 05:43	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 05:43	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/24/20 05:43	75-71-8	
1,1-Dichloroethane	2.6	ug/L	1.0	1		05/24/20 05:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/24/20 05:43	107-06-2	
1,1-Dichloroethene	16.5	ug/L	1.0	1		05/24/20 05:43	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 05:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 05:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 05:43	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/24/20 05:43	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 05:43	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/24/20 05:43	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 05:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 05:43	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/24/20 05:43	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/24/20 05:43	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/24/20 05:43	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/24/20 05:43	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/24/20 05:43	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/24/20 05:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/24/20 05:43	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/24/20 05:43	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/24/20 05:43	91-20-3	
Styrene	ND	ug/L	1.0	1		05/24/20 05:43	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 05:43	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 05:43	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-1D	Lab ID: 92478032011	Collected: 05/12/20 17:05	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/24/20 05:43	127-18-4	
Toluene	ND	ug/L	1.0	1		05/24/20 05:43	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 05:43	87-61-6	IH
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 05:43	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/24/20 05:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/24/20 05:43	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/24/20 05:43	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/24/20 05:43	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/24/20 05:43	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/24/20 05:43	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/24/20 05:43	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/24/20 05:43	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/24/20 05:43	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/24/20 05:43	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	1		05/24/20 05:43	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130	1		05/24/20 05:43	17060-07-0	
Toluene-d8 (S)	106	%	70-130	1		05/24/20 05:43	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	12.8	ug/L	2.0	1		05/21/20 03:07	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	50-150	1		05/21/20 03:07	17060-07-0	
Toluene-d8 (S)	100	%	50-150	1		05/21/20 03:07	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-22D	Lab ID: 92478032012	Collected: 05/12/20 17:20	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/24/20 03:55	67-64-1	
Benzene	ND	ug/L	1.0	1		05/24/20 03:55	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/24/20 03:55	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/24/20 03:55	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/24/20 03:55	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/24/20 03:55	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/24/20 03:55	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		05/24/20 03:55	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/24/20 03:55	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/24/20 03:55	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/24/20 03:55	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/24/20 03:55	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/24/20 03:55	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 03:55	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 03:55	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/24/20 03:55	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/24/20 03:55	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/24/20 03:55	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/24/20 03:55	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:55	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:55	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:55	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/24/20 03:55	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/24/20 03:55	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/24/20 03:55	107-06-2	
1,1-Dichloroethene	6.2	ug/L	1.0	1		05/24/20 03:55	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 03:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 03:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 03:55	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/24/20 03:55	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 03:55	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/24/20 03:55	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 03:55	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 03:55	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/24/20 03:55	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/24/20 03:55	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/24/20 03:55	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/24/20 03:55	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/24/20 03:55	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/24/20 03:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/24/20 03:55	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/24/20 03:55	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/24/20 03:55	91-20-3	
Styrene	ND	ug/L	1.0	1		05/24/20 03:55	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 03:55	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 03:55	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-22D	Lab ID: 92478032012	Collected: 05/12/20 17:20	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/24/20 03:55	127-18-4	
Toluene	ND	ug/L	1.0	1		05/24/20 03:55	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:55	87-61-6	IH
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 03:55	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/24/20 03:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/24/20 03:55	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/24/20 03:55	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/24/20 03:55	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/24/20 03:55	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/24/20 03:55	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/24/20 03:55	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/24/20 03:55	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/24/20 03:55	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/24/20 03:55	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	105	%	70-130	1		05/24/20 03:55	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	70-130	1		05/24/20 03:55	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		05/24/20 03:55	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	4.6	ug/L	2.0	1		05/21/20 03:27	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	94	%	50-150	1		05/21/20 03:27	17060-07-0	
Toluene-d8 (S)	106	%	50-150	1		05/21/20 03:27	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-04	Lab ID: 92478032013	Collected: 05/13/20 10:10	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/26/20 17:13	67-64-1	
Benzene	ND	ug/L	1.0	1		05/26/20 17:13	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/26/20 17:13	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/26/20 17:13	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/26/20 17:13	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/26/20 17:13	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/26/20 17:13	74-83-9	IH
2-Butanone (MEK)	ND	ug/L	5.0	1		05/26/20 17:13	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/26/20 17:13	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/26/20 17:13	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/26/20 17:13	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/26/20 17:13	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/26/20 17:13	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 17:13	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 17:13	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/26/20 17:13	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/26/20 17:13	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/26/20 17:13	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/26/20 17:13	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 17:13	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 17:13	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 17:13	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/26/20 17:13	75-71-8	
1,1-Dichloroethane	58.6	ug/L	1.0	1		05/26/20 17:13	75-34-3	
1,2-Dichloroethane	1.3	ug/L	1.0	1		05/26/20 17:13	107-06-2	
1,1-Dichloroethene	149	ug/L	1.0	1		05/26/20 17:13	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 17:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 17:13	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 17:13	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/26/20 17:13	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 17:13	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/26/20 17:13	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 17:13	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 17:13	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/26/20 17:13	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/26/20 17:13	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/26/20 17:13	87-68-3	IH
2-Hexanone	ND	ug/L	5.0	1		05/26/20 17:13	591-78-6	v1
p-Isopropyltoluene	ND	ug/L	1.0	1		05/26/20 17:13	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/26/20 17:13	75-09-2	v1
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/26/20 17:13	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/26/20 17:13	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/26/20 17:13	91-20-3	
Styrene	ND	ug/L	1.0	1		05/26/20 17:13	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 17:13	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 17:13	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-04	Lab ID: 92478032013	Collected: 05/13/20 10:10	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/26/20 17:13	127-18-4	
Toluene	ND	ug/L	1.0	1		05/26/20 17:13	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 17:13	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 17:13	120-82-1	
1,1,1-Trichloroethane	1.4	ug/L	1.0	1		05/26/20 17:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/26/20 17:13	79-00-5	
Trichloroethene	1.2	ug/L	1.0	1		05/26/20 17:13	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/26/20 17:13	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/26/20 17:13	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/26/20 17:13	108-05-4	v1
Vinyl chloride	ND	ug/L	1.0	1		05/26/20 17:13	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/26/20 17:13	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/26/20 17:13	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/26/20 17:13	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	104	%	70-130	1		05/26/20 17:13	460-00-4	
1,2-Dichloroethane-d4 (S)	118	%	70-130	1		05/26/20 17:13	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		05/26/20 17:13	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	84.6	ug/L	2.0	1		05/21/20 14:52	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	50-150	1		05/21/20 14:52	17060-07-0	
Toluene-d8 (S)	113	%	50-150	1		05/21/20 14:52	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-20	Lab ID: 92478032014	Collected: 05/13/20 10:30	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	50.0	2		05/26/20 21:30	67-64-1	
Benzene	ND	ug/L	2.0	2		05/26/20 21:30	71-43-2	
Bromobenzene	ND	ug/L	2.0	2		05/26/20 21:30	108-86-1	
Bromochloromethane	ND	ug/L	2.0	2		05/26/20 21:30	74-97-5	
Bromodichloromethane	ND	ug/L	2.0	2		05/26/20 21:30	75-27-4	
Bromoform	ND	ug/L	2.0	2		05/26/20 21:30	75-25-2	
Bromomethane	ND	ug/L	4.0	2		05/26/20 21:30	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	10.0	2		05/26/20 21:30	78-93-3	
Carbon tetrachloride	ND	ug/L	2.0	2		05/26/20 21:30	56-23-5	
Chlorobenzene	ND	ug/L	2.0	2		05/26/20 21:30	108-90-7	
Chloroethane	ND	ug/L	2.0	2		05/26/20 21:30	75-00-3	
Chloroform	ND	ug/L	10.0	2		05/26/20 21:30	67-66-3	
Chloromethane	ND	ug/L	2.0	2		05/26/20 21:30	74-87-3	
2-Chlorotoluene	ND	ug/L	2.0	2		05/26/20 21:30	95-49-8	
4-Chlorotoluene	ND	ug/L	2.0	2		05/26/20 21:30	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	10.0	2		05/26/20 21:30	96-12-8	
Dibromochloromethane	ND	ug/L	2.0	2		05/26/20 21:30	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	2		05/26/20 21:30	106-93-4	
Dibromomethane	ND	ug/L	2.0	2		05/26/20 21:30	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.0	2		05/26/20 21:30	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	2		05/26/20 21:30	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	2		05/26/20 21:30	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.0	2		05/26/20 21:30	75-71-8	
1,1-Dichloroethane	188	ug/L	2.0	2		05/26/20 21:30	75-34-3	
1,2-Dichloroethane	7.7	ug/L	2.0	2		05/26/20 21:30	107-06-2	
1,1-Dichloroethene	232	ug/L	2.0	2		05/26/20 21:30	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2.0	2		05/26/20 21:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.0	2		05/26/20 21:30	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	2		05/26/20 21:30	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.0	2		05/26/20 21:30	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.0	2		05/26/20 21:30	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.0	2		05/26/20 21:30	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.0	2		05/26/20 21:30	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	2		05/26/20 21:30	10061-02-6	
Diisopropyl ether	ND	ug/L	2.0	2		05/26/20 21:30	108-20-3	
Ethylbenzene	ND	ug/L	2.0	2		05/26/20 21:30	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	2		05/26/20 21:30	87-68-3	
2-Hexanone	ND	ug/L	10.0	2		05/26/20 21:30	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.0	2		05/26/20 21:30	99-87-6	
Methylene Chloride	ND	ug/L	10.0	2		05/26/20 21:30	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	2		05/26/20 21:30	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.0	2		05/26/20 21:30	1634-04-4	
Naphthalene	ND	ug/L	2.0	2		05/26/20 21:30	91-20-3	
Styrene	ND	ug/L	2.0	2		05/26/20 21:30	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.0	2		05/26/20 21:30	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	2		05/26/20 21:30	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-20	Lab ID: 92478032014	Collected: 05/13/20 10:30	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	2.0	2		05/26/20 21:30	127-18-4	
Toluene	ND	ug/L	2.0	2		05/26/20 21:30	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	2		05/26/20 21:30	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	2		05/26/20 21:30	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	2.0	2		05/26/20 21:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	2		05/26/20 21:30	79-00-5	
Trichloroethene	ND	ug/L	2.0	2		05/26/20 21:30	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	2		05/26/20 21:30	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.0	2		05/26/20 21:30	96-18-4	
Vinyl acetate	ND	ug/L	4.0	2		05/26/20 21:30	108-05-4	
Vinyl chloride	ND	ug/L	2.0	2		05/26/20 21:30	75-01-4	
Xylene (Total)	ND	ug/L	2.0	2		05/26/20 21:30	1330-20-7	
m&p-Xylene	ND	ug/L	4.0	2		05/26/20 21:30	179601-23-1	
o-Xylene	ND	ug/L	2.0	2		05/26/20 21:30	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	2		05/26/20 21:30	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130	2		05/26/20 21:30	17060-07-0	
Toluene-d8 (S)	101	%	70-130	2		05/26/20 21:30	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	1000	ug/L	40.0	20		05/21/20 16:10	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	50-150	20		05/21/20 16:10	17060-07-0	
Toluene-d8 (S)	110	%	50-150	20		05/21/20 16:10	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-09	Lab ID: 92478032015	Collected: 05/13/20 10:45	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/26/20 20:35	67-64-1	
Benzene	ND	ug/L	1.0	1		05/26/20 20:35	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/26/20 20:35	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/26/20 20:35	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/26/20 20:35	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/26/20 20:35	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/26/20 20:35	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		05/26/20 20:35	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/26/20 20:35	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/26/20 20:35	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/26/20 20:35	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/26/20 20:35	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/26/20 20:35	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 20:35	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 20:35	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/26/20 20:35	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/26/20 20:35	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/26/20 20:35	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/26/20 20:35	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 20:35	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 20:35	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 20:35	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/26/20 20:35	75-71-8	
1,1-Dichloroethane	2.6	ug/L	1.0	1		05/26/20 20:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/26/20 20:35	107-06-2	
1,1-Dichloroethene	50.5	ug/L	1.0	1		05/26/20 20:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 20:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 20:35	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 20:35	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/26/20 20:35	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 20:35	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/26/20 20:35	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 20:35	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 20:35	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/26/20 20:35	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/26/20 20:35	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/26/20 20:35	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/26/20 20:35	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/26/20 20:35	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/26/20 20:35	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/26/20 20:35	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/26/20 20:35	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/26/20 20:35	91-20-3	
Styrene	ND	ug/L	1.0	1		05/26/20 20:35	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 20:35	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 20:35	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-09	Lab ID: 92478032015	Collected: 05/13/20 10:45	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/26/20 20:35	127-18-4	
Toluene	ND	ug/L	1.0	1		05/26/20 20:35	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 20:35	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 20:35	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/26/20 20:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/26/20 20:35	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/26/20 20:35	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/26/20 20:35	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/26/20 20:35	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/26/20 20:35	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/26/20 20:35	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/26/20 20:35	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/26/20 20:35	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/26/20 20:35	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		05/26/20 20:35	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130	1		05/26/20 20:35	17060-07-0	
Toluene-d8 (S)	98	%	70-130	1		05/26/20 20:35	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	18.7	ug/L	2.0	1		05/21/20 15:12	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	50-150	1		05/21/20 15:12	17060-07-0	
Toluene-d8 (S)	120	%	50-150	1		05/21/20 15:12	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-23D	Lab ID: 92478032016	Collected: 05/13/20 11:00	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/26/20 20:53	67-64-1	
Benzene	ND	ug/L	1.0	1		05/26/20 20:53	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/26/20 20:53	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/26/20 20:53	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/26/20 20:53	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/26/20 20:53	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/26/20 20:53	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		05/26/20 20:53	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/26/20 20:53	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/26/20 20:53	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/26/20 20:53	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/26/20 20:53	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/26/20 20:53	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 20:53	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 20:53	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/26/20 20:53	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/26/20 20:53	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/26/20 20:53	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/26/20 20:53	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 20:53	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 20:53	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 20:53	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/26/20 20:53	75-71-8	
1,1-Dichloroethane	35.2	ug/L	1.0	1		05/26/20 20:53	75-34-3	
1,2-Dichloroethane	1.8	ug/L	1.0	1		05/26/20 20:53	107-06-2	
1,1-Dichloroethene	142	ug/L	1.0	1		05/26/20 20:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 20:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 20:53	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 20:53	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/26/20 20:53	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 20:53	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/26/20 20:53	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 20:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 20:53	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/26/20 20:53	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/26/20 20:53	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/26/20 20:53	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/26/20 20:53	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/26/20 20:53	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/26/20 20:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/26/20 20:53	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/26/20 20:53	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/26/20 20:53	91-20-3	
Styrene	ND	ug/L	1.0	1		05/26/20 20:53	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 20:53	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 20:53	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-23D	Lab ID: 92478032016	Collected: 05/13/20 11:00	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/26/20 20:53	127-18-4	
Toluene	ND	ug/L	1.0	1		05/26/20 20:53	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 20:53	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 20:53	120-82-1	
1,1,1-Trichloroethane	13.6	ug/L	1.0	1		05/26/20 20:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/26/20 20:53	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/26/20 20:53	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/26/20 20:53	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/26/20 20:53	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/26/20 20:53	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/26/20 20:53	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/26/20 20:53	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/26/20 20:53	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/26/20 20:53	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	95	%	70-130	1		05/26/20 20:53	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130	1		05/26/20 20:53	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		05/26/20 20:53	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	112	ug/L	4.0	2		05/21/20 16:30	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%	50-150	2		05/21/20 16:30	17060-07-0	
Toluene-d8 (S)	110	%	50-150	2		05/21/20 16:30	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-27D	Lab ID: 92478032017	Collected: 05/13/20 13:10	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/26/20 20:16	67-64-1	
Benzene	ND	ug/L	1.0	1		05/26/20 20:16	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/26/20 20:16	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/26/20 20:16	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/26/20 20:16	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/26/20 20:16	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/26/20 20:16	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		05/26/20 20:16	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/26/20 20:16	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/26/20 20:16	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/26/20 20:16	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/26/20 20:16	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/26/20 20:16	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 20:16	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 20:16	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/26/20 20:16	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/26/20 20:16	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/26/20 20:16	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/26/20 20:16	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 20:16	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 20:16	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 20:16	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/26/20 20:16	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/26/20 20:16	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/26/20 20:16	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/26/20 20:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 20:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 20:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 20:16	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/26/20 20:16	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 20:16	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/26/20 20:16	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 20:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 20:16	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/26/20 20:16	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/26/20 20:16	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/26/20 20:16	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/26/20 20:16	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/26/20 20:16	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/26/20 20:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/26/20 20:16	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/26/20 20:16	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/26/20 20:16	91-20-3	
Styrene	ND	ug/L	1.0	1		05/26/20 20:16	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 20:16	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 20:16	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-27D	Lab ID: 92478032017	Collected: 05/13/20 13:10	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/26/20 20:16	127-18-4	
Toluene	ND	ug/L	1.0	1		05/26/20 20:16	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 20:16	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 20:16	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/26/20 20:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/26/20 20:16	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/26/20 20:16	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/26/20 20:16	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/26/20 20:16	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/26/20 20:16	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/26/20 20:16	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/26/20 20:16	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/26/20 20:16	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/26/20 20:16	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		05/26/20 20:16	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130	1		05/26/20 20:16	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		05/26/20 20:16	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/21/20 13:53	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	50-150	1		05/21/20 13:53	17060-07-0	
Toluene-d8 (S)	106	%	50-150	1		05/21/20 13:53	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: Trip Blank A	Lab ID: 92478032018	Collected: 05/13/20 00:00	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/26/20 18:08	67-64-1	
Benzene	ND	ug/L	1.0	1		05/26/20 18:08	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/26/20 18:08	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/26/20 18:08	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/26/20 18:08	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/26/20 18:08	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/26/20 18:08	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		05/26/20 18:08	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/26/20 18:08	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/26/20 18:08	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/26/20 18:08	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/26/20 18:08	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/26/20 18:08	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 18:08	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 18:08	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/26/20 18:08	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/26/20 18:08	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/26/20 18:08	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/26/20 18:08	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 18:08	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 18:08	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 18:08	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/26/20 18:08	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/26/20 18:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/26/20 18:08	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/26/20 18:08	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 18:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 18:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 18:08	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/26/20 18:08	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 18:08	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/26/20 18:08	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 18:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 18:08	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/26/20 18:08	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/26/20 18:08	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/26/20 18:08	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/26/20 18:08	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/26/20 18:08	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/26/20 18:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/26/20 18:08	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/26/20 18:08	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/26/20 18:08	91-20-3	
Styrene	ND	ug/L	1.0	1		05/26/20 18:08	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 18:08	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 18:08	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: Trip Blank A	Lab ID: 92478032018	Collected: 05/13/20 00:00	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/26/20 18:08	127-18-4	
Toluene	ND	ug/L	1.0	1		05/26/20 18:08	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 18:08	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 18:08	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/26/20 18:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/26/20 18:08	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/26/20 18:08	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/26/20 18:08	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/26/20 18:08	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/26/20 18:08	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/26/20 18:08	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/26/20 18:08	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/26/20 18:08	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/26/20 18:08	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	97	%	70-130	1		05/26/20 18:08	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130	1		05/26/20 18:08	17060-07-0	
Toluene-d8 (S)	98	%	70-130	1		05/26/20 18:08	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/21/20 12:52	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	96	%	50-150	1		05/21/20 12:52	17060-07-0	
Toluene-d8 (S)	105	%	50-150	1		05/21/20 12:52	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: Trip Blank B	Lab ID: 92478032019	Collected: 05/13/20 00:00	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/26/20 18:26	67-64-1	
Benzene	ND	ug/L	1.0	1		05/26/20 18:26	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/26/20 18:26	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/26/20 18:26	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/26/20 18:26	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/26/20 18:26	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/26/20 18:26	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		05/26/20 18:26	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/26/20 18:26	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/26/20 18:26	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/26/20 18:26	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/26/20 18:26	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/26/20 18:26	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 18:26	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 18:26	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/26/20 18:26	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/26/20 18:26	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/26/20 18:26	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/26/20 18:26	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 18:26	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 18:26	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 18:26	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/26/20 18:26	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/26/20 18:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/26/20 18:26	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/26/20 18:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 18:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 18:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 18:26	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/26/20 18:26	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 18:26	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/26/20 18:26	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 18:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 18:26	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/26/20 18:26	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/26/20 18:26	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/26/20 18:26	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/26/20 18:26	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/26/20 18:26	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/26/20 18:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/26/20 18:26	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/26/20 18:26	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/26/20 18:26	91-20-3	
Styrene	ND	ug/L	1.0	1		05/26/20 18:26	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 18:26	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 18:26	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: Trip Blank B	Lab ID: 92478032019	Collected: 05/13/20 00:00	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/26/20 18:26	127-18-4	
Toluene	ND	ug/L	1.0	1		05/26/20 18:26	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 18:26	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 18:26	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/26/20 18:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/26/20 18:26	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/26/20 18:26	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/26/20 18:26	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/26/20 18:26	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/26/20 18:26	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/26/20 18:26	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/26/20 18:26	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/26/20 18:26	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/26/20 18:26	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		05/26/20 18:26	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130	1		05/26/20 18:26	17060-07-0	
Toluene-d8 (S)	98	%	70-130	1		05/26/20 18:26	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/21/20 13:13	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	92	%	50-150	1		05/21/20 13:13	17060-07-0	
Toluene-d8 (S)	105	%	50-150	1		05/21/20 13:13	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-44	Lab ID: 92478032020	Collected: 05/13/20 17:30	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/26/20 19:03	67-64-1	
Benzene	ND	ug/L	1.0	1		05/26/20 19:03	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/26/20 19:03	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/26/20 19:03	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/26/20 19:03	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/26/20 19:03	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/26/20 19:03	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		05/26/20 19:03	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/26/20 19:03	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/26/20 19:03	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/26/20 19:03	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/26/20 19:03	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/26/20 19:03	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 19:03	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 19:03	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/26/20 19:03	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/26/20 19:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/26/20 19:03	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/26/20 19:03	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 19:03	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 19:03	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 19:03	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/26/20 19:03	75-71-8	
1,1-Dichloroethane	3.0	ug/L	1.0	1		05/26/20 19:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/26/20 19:03	107-06-2	
1,1-Dichloroethene	4.1	ug/L	1.0	1		05/26/20 19:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 19:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 19:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 19:03	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/26/20 19:03	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 19:03	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/26/20 19:03	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 19:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 19:03	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/26/20 19:03	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/26/20 19:03	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/26/20 19:03	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/26/20 19:03	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/26/20 19:03	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/26/20 19:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/26/20 19:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/26/20 19:03	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/26/20 19:03	91-20-3	
Styrene	ND	ug/L	1.0	1		05/26/20 19:03	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 19:03	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 19:03	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-44	Lab ID: 92478032020	Collected: 05/13/20 17:30	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/26/20 19:03	127-18-4	
Toluene	ND	ug/L	1.0	1		05/26/20 19:03	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 19:03	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 19:03	120-82-1	
1,1,1-Trichloroethane	11.9	ug/L	1.0	1		05/26/20 19:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/26/20 19:03	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/26/20 19:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/26/20 19:03	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/26/20 19:03	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/26/20 19:03	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/26/20 19:03	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/26/20 19:03	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/26/20 19:03	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/26/20 19:03	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	1		05/26/20 19:03	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130	1		05/26/20 19:03	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		05/26/20 19:03	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	17.7	ug/L	2.0	1		05/21/20 15:31	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	50-150	1		05/21/20 15:31	17060-07-0	
Toluene-d8 (S)	112	%	50-150	1		05/21/20 15:31	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-16D	Lab ID: 92478032021	Collected: 05/13/20 17:50	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D						
		Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/26/20 19:21	67-64-1	
Benzene	ND	ug/L	1.0	1		05/26/20 19:21	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/26/20 19:21	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/26/20 19:21	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/26/20 19:21	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/26/20 19:21	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/26/20 19:21	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		05/26/20 19:21	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/26/20 19:21	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/26/20 19:21	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/26/20 19:21	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/26/20 19:21	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/26/20 19:21	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 19:21	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 19:21	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/26/20 19:21	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/26/20 19:21	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/26/20 19:21	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/26/20 19:21	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 19:21	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 19:21	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 19:21	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/26/20 19:21	75-71-8	
1,1-Dichloroethane	29.1	ug/L	1.0	1		05/26/20 19:21	75-34-3	
1,2-Dichloroethane	1.9	ug/L	1.0	1		05/26/20 19:21	107-06-2	
1,1-Dichloroethene	145	ug/L	1.0	1		05/26/20 19:21	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 19:21	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 19:21	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 19:21	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/26/20 19:21	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 19:21	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/26/20 19:21	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 19:21	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 19:21	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/26/20 19:21	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/26/20 19:21	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/26/20 19:21	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/26/20 19:21	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/26/20 19:21	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/26/20 19:21	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/26/20 19:21	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/26/20 19:21	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/26/20 19:21	91-20-3	
Styrene	ND	ug/L	1.0	1		05/26/20 19:21	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 19:21	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 19:21	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-16D	Lab ID: 92478032021	Collected: 05/13/20 17:50	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/26/20 19:21	127-18-4	
Toluene	ND	ug/L	1.0	1		05/26/20 19:21	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 19:21	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 19:21	120-82-1	
1,1,1-Trichloroethane	11.7	ug/L	1.0	1		05/26/20 19:21	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/26/20 19:21	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/26/20 19:21	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/26/20 19:21	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/26/20 19:21	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/26/20 19:21	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/26/20 19:21	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/26/20 19:21	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/26/20 19:21	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/26/20 19:21	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	1		05/26/20 19:21	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130	1		05/26/20 19:21	17060-07-0	
Toluene-d8 (S)	98	%	70-130	1		05/26/20 19:21	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	130	ug/L	5.0	2.5		05/21/20 16:49	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%	50-150	2.5		05/21/20 16:49	17060-07-0	
Toluene-d8 (S)	112	%	50-150	2.5		05/21/20 16:49	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: Dup-051320	Lab ID: 92478032022	Collected: 05/13/20 09:00	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	125	5		05/27/20 14:37	67-64-1	
Benzene	ND	ug/L	5.0	5		05/27/20 14:37	71-43-2	
Bromobenzene	ND	ug/L	5.0	5		05/27/20 14:37	108-86-1	
Bromochloromethane	ND	ug/L	5.0	5		05/27/20 14:37	74-97-5	
Bromodichloromethane	ND	ug/L	5.0	5		05/27/20 14:37	75-27-4	
Bromoform	ND	ug/L	5.0	5		05/27/20 14:37	75-25-2	
Bromomethane	ND	ug/L	10.0	5		05/27/20 14:37	74-83-9	IK,v2,v3
2-Butanone (MEK)	ND	ug/L	25.0	5		05/27/20 14:37	78-93-3	
Carbon tetrachloride	ND	ug/L	5.0	5		05/27/20 14:37	56-23-5	
Chlorobenzene	ND	ug/L	5.0	5		05/27/20 14:37	108-90-7	
Chloroethane	10.1	ug/L	5.0	5		05/27/20 14:37	75-00-3	
Chloroform	ND	ug/L	25.0	5		05/27/20 14:37	67-66-3	
Chloromethane	ND	ug/L	5.0	5		05/27/20 14:37	74-87-3	
2-Chlorotoluene	ND	ug/L	5.0	5		05/27/20 14:37	95-49-8	
4-Chlorotoluene	ND	ug/L	5.0	5		05/27/20 14:37	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	25.0	5		05/27/20 14:37	96-12-8	
Dibromochloromethane	ND	ug/L	5.0	5		05/27/20 14:37	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	5.0	5		05/27/20 14:37	106-93-4	
Dibromomethane	ND	ug/L	5.0	5		05/27/20 14:37	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	5		05/27/20 14:37	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	5		05/27/20 14:37	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5.0	5		05/27/20 14:37	106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.0	5		05/27/20 14:37	75-71-8	
1,1-Dichloroethane	425	ug/L	5.0	5		05/27/20 14:37	75-34-3	M1
1,2-Dichloroethane	ND	ug/L	5.0	5		05/27/20 14:37	107-06-2	
1,1-Dichloroethene	594	ug/L	5.0	5		05/27/20 14:37	75-35-4	M1
cis-1,2-Dichloroethene	ND	ug/L	5.0	5		05/27/20 14:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	5		05/27/20 14:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	5.0	5		05/27/20 14:37	78-87-5	
1,3-Dichloropropane	ND	ug/L	5.0	5		05/27/20 14:37	142-28-9	
2,2-Dichloropropane	ND	ug/L	5.0	5		05/27/20 14:37	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	5		05/27/20 14:37	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	5.0	5		05/27/20 14:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	5.0	5		05/27/20 14:37	10061-02-6	
Diisopropyl ether	ND	ug/L	5.0	5		05/27/20 14:37	108-20-3	
Ethylbenzene	ND	ug/L	5.0	5		05/27/20 14:37	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	5		05/27/20 14:37	87-68-3	
2-Hexanone	ND	ug/L	25.0	5		05/27/20 14:37	591-78-6	
p-Isopropyltoluene	ND	ug/L	5.0	5		05/27/20 14:37	99-87-6	
Methylene Chloride	ND	ug/L	25.0	5		05/27/20 14:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	25.0	5		05/27/20 14:37	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	5.0	5		05/27/20 14:37	1634-04-4	
Naphthalene	ND	ug/L	5.0	5		05/27/20 14:37	91-20-3	
Styrene	ND	ug/L	5.0	5		05/27/20 14:37	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	5		05/27/20 14:37	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	5		05/27/20 14:37	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: Dup-051320	Lab ID: 92478032022	Collected: 05/13/20 09:00	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Tetrachloroethene	ND	ug/L	5.0	5		05/27/20 14:37	127-18-4	
Toluene	ND	ug/L	5.0	5		05/27/20 14:37	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	5.0	5		05/27/20 14:37	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	5		05/27/20 14:37	120-82-1	
1,1,1-Trichloroethane	518	ug/L	5.0	5		05/27/20 14:37	71-55-6	M1
1,1,2-Trichloroethane	ND	ug/L	5.0	5		05/27/20 14:37	79-00-5	
Trichloroethene	12.0	ug/L	5.0	5		05/27/20 14:37	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.0	5		05/27/20 14:37	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	5.0	5		05/27/20 14:37	96-18-4	M1
Vinyl acetate	ND	ug/L	10.0	5		05/27/20 14:37	108-05-4	
Vinyl chloride	ND	ug/L	5.0	5		05/27/20 14:37	75-01-4	
Xylene (Total)	ND	ug/L	5.0	5		05/27/20 14:37	1330-20-7	
m&p-Xylene	ND	ug/L	10.0	5		05/27/20 14:37	179601-23-1	
o-Xylene	ND	ug/L	5.0	5		05/27/20 14:37	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	5		05/27/20 14:37	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130	5		05/27/20 14:37	17060-07-0	
Toluene-d8 (S)	99	%	70-130	5		05/27/20 14:37	2037-26-5	
8260D MSV SIM		Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte						
1,4-Dioxane (p-Dioxane)	35.0	ug/L	2.0	1		05/22/20 01:22	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	50-150	1		05/22/20 01:22	17060-07-0	
Toluene-d8 (S)	106	%	50-150	1		05/22/20 01:22	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-16	Lab ID: 92478032023	Collected: 05/13/20 18:00	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	125	5		05/27/20 20:44	67-64-1	
Benzene	ND	ug/L	5.0	5		05/27/20 20:44	71-43-2	
Bromobenzene	ND	ug/L	5.0	5		05/27/20 20:44	108-86-1	
Bromochloromethane	ND	ug/L	5.0	5		05/27/20 20:44	74-97-5	
Bromodichloromethane	ND	ug/L	5.0	5		05/27/20 20:44	75-27-4	
Bromoform	ND	ug/L	5.0	5		05/27/20 20:44	75-25-2	
Bromomethane	ND	ug/L	10.0	5		05/27/20 20:44	74-83-9	IK,v2
2-Butanone (MEK)	ND	ug/L	25.0	5		05/27/20 20:44	78-93-3	
Carbon tetrachloride	ND	ug/L	5.0	5		05/27/20 20:44	56-23-5	
Chlorobenzene	ND	ug/L	5.0	5		05/27/20 20:44	108-90-7	
Chloroethane	10.9	ug/L	5.0	5		05/27/20 20:44	75-00-3	
Chloroform	ND	ug/L	25.0	5		05/27/20 20:44	67-66-3	
Chloromethane	ND	ug/L	5.0	5		05/27/20 20:44	74-87-3	
2-Chlorotoluene	ND	ug/L	5.0	5		05/27/20 20:44	95-49-8	
4-Chlorotoluene	ND	ug/L	5.0	5		05/27/20 20:44	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	25.0	5		05/27/20 20:44	96-12-8	
Dibromochloromethane	ND	ug/L	5.0	5		05/27/20 20:44	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	5.0	5		05/27/20 20:44	106-93-4	
Dibromomethane	ND	ug/L	5.0	5		05/27/20 20:44	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	5		05/27/20 20:44	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	5		05/27/20 20:44	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5.0	5		05/27/20 20:44	106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.0	5		05/27/20 20:44	75-71-8	
1,1-Dichloroethane	394	ug/L	5.0	5		05/27/20 20:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	5.0	5		05/27/20 20:44	107-06-2	
1,1-Dichloroethene	571	ug/L	5.0	5		05/27/20 20:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	5		05/27/20 20:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	5		05/27/20 20:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	5.0	5		05/27/20 20:44	78-87-5	
1,3-Dichloropropane	ND	ug/L	5.0	5		05/27/20 20:44	142-28-9	
2,2-Dichloropropane	ND	ug/L	5.0	5		05/27/20 20:44	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	5		05/27/20 20:44	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	5.0	5		05/27/20 20:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	5.0	5		05/27/20 20:44	10061-02-6	
Diisopropyl ether	ND	ug/L	5.0	5		05/27/20 20:44	108-20-3	
Ethylbenzene	ND	ug/L	5.0	5		05/27/20 20:44	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	5		05/27/20 20:44	87-68-3	
2-Hexanone	ND	ug/L	25.0	5		05/27/20 20:44	591-78-6	
p-Isopropyltoluene	ND	ug/L	5.0	5		05/27/20 20:44	99-87-6	
Methylene Chloride	ND	ug/L	25.0	5		05/27/20 20:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	25.0	5		05/27/20 20:44	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	5.0	5		05/27/20 20:44	1634-04-4	
Naphthalene	ND	ug/L	5.0	5		05/27/20 20:44	91-20-3	
Styrene	ND	ug/L	5.0	5		05/27/20 20:44	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	5		05/27/20 20:44	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	5		05/27/20 20:44	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: MW-16								
Lab ID: 92478032023								
Collected: 05/13/20 18:00								
Received: 05/18/20 09:12								
Matrix: Water								
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	5.0	5		05/27/20 20:44	127-18-4	
Toluene	ND	ug/L	5.0	5		05/27/20 20:44	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	5.0	5		05/27/20 20:44	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	5		05/27/20 20:44	120-82-1	
1,1,1-Trichloroethane	487	ug/L	5.0	5		05/27/20 20:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	5.0	5		05/27/20 20:44	79-00-5	
Trichloroethene	10.7	ug/L	5.0	5		05/27/20 20:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.0	5		05/27/20 20:44	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	5.0	5		05/27/20 20:44	96-18-4	
Vinyl acetate	ND	ug/L	10.0	5		05/27/20 20:44	108-05-4	
Vinyl chloride	ND	ug/L	5.0	5		05/27/20 20:44	75-01-4	
Xylene (Total)	ND	ug/L	5.0	5		05/27/20 20:44	1330-20-7	
m&p-Xylene	ND	ug/L	10.0	5		05/27/20 20:44	179601-23-1	
o-Xylene	ND	ug/L	5.0	5		05/27/20 20:44	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	5		05/27/20 20:44	460-00-4	
1,2-Dichloroethane-d4 (S)	90	%	70-130	5		05/27/20 20:44	17060-07-0	
Toluene-d8 (S)	98	%	70-130	5		05/27/20 20:44	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	39.2	ug/L	2.0	1		05/21/20 15:51	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%	50-150	1		05/21/20 15:51	17060-07-0	
Toluene-d8 (S)	106	%	50-150	1		05/21/20 15:51	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: MW-01	Lab ID: 92478032024	Collected: 05/14/20 10:18	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D						
		Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/26/20 19:58	67-64-1	
Benzene	ND	ug/L	1.0	1		05/26/20 19:58	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/26/20 19:58	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/26/20 19:58	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/26/20 19:58	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/26/20 19:58	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/26/20 19:58	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		05/26/20 19:58	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/26/20 19:58	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/26/20 19:58	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/26/20 19:58	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/26/20 19:58	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/26/20 19:58	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 19:58	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 19:58	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/26/20 19:58	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/26/20 19:58	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/26/20 19:58	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/26/20 19:58	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 19:58	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 19:58	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 19:58	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/26/20 19:58	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/26/20 19:58	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/26/20 19:58	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/26/20 19:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 19:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 19:58	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 19:58	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/26/20 19:58	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 19:58	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/26/20 19:58	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 19:58	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 19:58	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/26/20 19:58	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/26/20 19:58	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/26/20 19:58	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/26/20 19:58	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/26/20 19:58	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/26/20 19:58	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/26/20 19:58	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/26/20 19:58	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/26/20 19:58	91-20-3	
Styrene	ND	ug/L	1.0	1		05/26/20 19:58	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 19:58	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 19:58	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: MW-01	Lab ID: 92478032024	Collected: 05/14/20 10:18	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/26/20 19:58	127-18-4	
Toluene	ND	ug/L	1.0	1		05/26/20 19:58	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 19:58	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 19:58	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/26/20 19:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/26/20 19:58	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/26/20 19:58	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/26/20 19:58	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/26/20 19:58	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/26/20 19:58	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/26/20 19:58	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/26/20 19:58	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/26/20 19:58	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/26/20 19:58	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		05/26/20 19:58	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130	1		05/26/20 19:58	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		05/26/20 19:58	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/21/20 14:12	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	91	%	50-150	1		05/21/20 14:12	17060-07-0	
Toluene-d8 (S)	92	%	50-150	1		05/21/20 14:12	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop-Flex onsite

Pace Project No.: 92478032

Sample: Trip Blank C	Lab ID: 92478032025	Collected: 05/14/20 00:00	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/26/20 17:31	67-64-1	
Benzene	ND	ug/L	1.0	1		05/26/20 17:31	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/26/20 17:31	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/26/20 17:31	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/26/20 17:31	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/26/20 17:31	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/26/20 17:31	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		05/26/20 17:31	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/26/20 17:31	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/26/20 17:31	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/26/20 17:31	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/26/20 17:31	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/26/20 17:31	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 17:31	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 17:31	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/26/20 17:31	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/26/20 17:31	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/26/20 17:31	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/26/20 17:31	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 17:31	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 17:31	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 17:31	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/26/20 17:31	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		05/26/20 17:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/26/20 17:31	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		05/26/20 17:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 17:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 17:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 17:31	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/26/20 17:31	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 17:31	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/26/20 17:31	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 17:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 17:31	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/26/20 17:31	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/26/20 17:31	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/26/20 17:31	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/26/20 17:31	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/26/20 17:31	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/26/20 17:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/26/20 17:31	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/26/20 17:31	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/26/20 17:31	91-20-3	
Styrene	ND	ug/L	1.0	1		05/26/20 17:31	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 17:31	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 17:31	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop-Flex onsite
Pace Project No.: 92478032

Sample: Trip Blank C	Lab ID: 92478032025	Collected: 05/14/20 00:00	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		05/26/20 17:31	127-18-4	
Toluene	ND	ug/L	1.0	1		05/26/20 17:31	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 17:31	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 17:31	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/26/20 17:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/26/20 17:31	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/26/20 17:31	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/26/20 17:31	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/26/20 17:31	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/26/20 17:31	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/26/20 17:31	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/26/20 17:31	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/26/20 17:31	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/26/20 17:31	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	97	%	70-130	1		05/26/20 17:31	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	70-130	1		05/26/20 17:31	17060-07-0	
Toluene-d8 (S)	98	%	70-130	1		05/26/20 17:31	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		05/21/20 13:33	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	94	%	50-150	1		05/21/20 13:33	17060-07-0	
Toluene-d8 (S)	110	%	50-150	1		05/21/20 13:33	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop-Flex onsite

Pace Project No.: 92478032

QC Batch: 542927

Analysis Method: EPA 8260D

QC Batch Method: EPA 8260D

Analysis Description: 8260D MSV Low Level

Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92478032001, 92478032002, 92478032003, 92478032004, 92478032005, 92478032006, 92478032007, 92478032008, 92478032009, 92478032010, 92478032011, 92478032012

METHOD BLANK: 2892230

Matrix: Water

Associated Lab Samples: 92478032001, 92478032002, 92478032003, 92478032004, 92478032005, 92478032006, 92478032007, 92478032008, 92478032009, 92478032010, 92478032011, 92478032012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/24/20 00:00	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/24/20 00:00	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/24/20 00:00	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/24/20 00:00	
1,1-Dichloroethane	ug/L	ND	1.0	05/24/20 00:00	
1,1-Dichloroethene	ug/L	ND	1.0	05/24/20 00:00	
1,1-Dichloropropene	ug/L	ND	1.0	05/24/20 00:00	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/24/20 00:00	IH
1,2,3-Trichloropropane	ug/L	ND	1.0	05/24/20 00:00	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/24/20 00:00	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	05/24/20 00:00	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/24/20 00:00	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/24/20 00:00	
1,2-Dichloroethane	ug/L	ND	1.0	05/24/20 00:00	
1,2-Dichloropropane	ug/L	ND	1.0	05/24/20 00:00	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/24/20 00:00	
1,3-Dichloropropane	ug/L	ND	1.0	05/24/20 00:00	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/24/20 00:00	
2,2-Dichloropropane	ug/L	ND	1.0	05/24/20 00:00	
2-Butanone (MEK)	ug/L	ND	5.0	05/24/20 00:00	
2-Chlorotoluene	ug/L	ND	1.0	05/24/20 00:00	
2-Hexanone	ug/L	ND	5.0	05/24/20 00:00	
4-Chlorotoluene	ug/L	ND	1.0	05/24/20 00:00	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/24/20 00:00	
Acetone	ug/L	ND	25.0	05/24/20 00:00	
Benzene	ug/L	ND	1.0	05/24/20 00:00	
Bromobenzene	ug/L	ND	1.0	05/24/20 00:00	
Bromochloromethane	ug/L	ND	1.0	05/24/20 00:00	
Bromodichloromethane	ug/L	ND	1.0	05/24/20 00:00	
Bromoform	ug/L	ND	1.0	05/24/20 00:00	
Bromomethane	ug/L	ND	2.0	05/24/20 00:00	v2
Carbon tetrachloride	ug/L	ND	1.0	05/24/20 00:00	
Chlorobenzene	ug/L	ND	1.0	05/24/20 00:00	
Chloroethane	ug/L	ND	1.0	05/24/20 00:00	
Chloroform	ug/L	ND	5.0	05/24/20 00:00	
Chloromethane	ug/L	ND	1.0	05/24/20 00:00	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/24/20 00:00	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/24/20 00:00	
Dibromochloromethane	ug/L	ND	1.0	05/24/20 00:00	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop-Flex onsite
Pace Project No.: 92478032

METHOD BLANK: 2892230

Matrix: Water

Associated Lab Samples: 92478032001, 92478032002, 92478032003, 92478032004, 92478032005, 92478032006, 92478032007, 92478032008, 92478032009, 92478032010, 92478032011, 92478032012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	05/24/20 00:00	
Dichlorodifluoromethane	ug/L	ND	1.0	05/24/20 00:00	
Diisopropyl ether	ug/L	ND	1.0	05/24/20 00:00	
Ethylbenzene	ug/L	ND	1.0	05/24/20 00:00	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	05/24/20 00:00	
m&p-Xylene	ug/L	ND	2.0	05/24/20 00:00	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/24/20 00:00	
Methylene Chloride	ug/L	ND	5.0	05/24/20 00:00	
Naphthalene	ug/L	ND	1.0	05/24/20 00:00	
o-Xylene	ug/L	ND	1.0	05/24/20 00:00	
p-Isopropyltoluene	ug/L	ND	1.0	05/24/20 00:00	
Styrene	ug/L	ND	1.0	05/24/20 00:00	
Tetrachloroethene	ug/L	ND	1.0	05/24/20 00:00	
Toluene	ug/L	ND	1.0	05/24/20 00:00	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/24/20 00:00	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/24/20 00:00	
Trichloroethene	ug/L	ND	1.0	05/24/20 00:00	
Trichlorofluoromethane	ug/L	ND	1.0	05/24/20 00:00	
Vinyl acetate	ug/L	ND	2.0	05/24/20 00:00	
Vinyl chloride	ug/L	ND	1.0	05/24/20 00:00	
Xylene (Total)	ug/L	ND	1.0	05/24/20 00:00	
1,2-Dichloroethane-d4 (S)	%	108	70-130	05/24/20 00:00	
4-Bromofluorobenzene (S)	%	99	70-130	05/24/20 00:00	
Toluene-d8 (S)	%	102	70-130	05/24/20 00:00	

LABORATORY CONTROL SAMPLE: 2892231

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	50.5	101	70-130	
1,1,1-Trichloroethane	ug/L	50	54.7	109	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	51.4	103	70-130	
1,1,2-Trichloroethane	ug/L	50	50.9	102	70-130	
1,1-Dichloroethane	ug/L	50	50.3	101	70-130	
1,1-Dichloroethene	ug/L	50	55.0	110	70-130	
1,1-Dichloropropene	ug/L	50	52.5	105	70-130	
1,2,3-Trichlorobenzene	ug/L	50	60.5	121	70-130	IH
1,2,3-Trichloropropane	ug/L	50	47.6	95	70-130	
1,2,4-Trichlorobenzene	ug/L	50	50.4	101	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	52.0	104	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	52.6	105	70-130	
1,2-Dichlorobenzene	ug/L	50	51.0	102	70-130	
1,2-Dichloroethane	ug/L	50	52.4	105	70-130	
1,2-Dichloropropane	ug/L	50	50.5	101	70-130	

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QUALITY CONTROL DATA

Project: Kop-Flex onsite

Pace Project No.: 92478032

LABORATORY CONTROL SAMPLE: 2892231

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3-Dichlorobenzene	ug/L	50	50.2	100	70-130	
1,3-Dichloropropane	ug/L	50	50.7	101	70-131	
1,4-Dichlorobenzene	ug/L	50	49.3	99	70-130	
2,2-Dichloropropane	ug/L	50	44.2	88	69-130	
2-Butanone (MEK)	ug/L	100	106	106	64-135	
2-Chlorotoluene	ug/L	50	46.8	94	70-130	
2-Hexanone	ug/L	100	109	109	66-135	
4-Chlorotoluene	ug/L	50	48.7	97	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	109	109	70-130	
Acetone	ug/L	100	106	106	61-157	
Benzene	ug/L	50	51.4	103	70-130	
Bromobenzene	ug/L	50	46.8	94	70-130	
Bromochloromethane	ug/L	50	50.4	101	70-130	
Bromodichloromethane	ug/L	50	53.9	108	70-130	
Bromoform	ug/L	50	43.8	88	70-130	
Bromomethane	ug/L	50	33.3	67	38-130 v3	
Carbon tetrachloride	ug/L	50	58.2	116	70-130	
Chlorobenzene	ug/L	50	50.6	101	70-130	
Chloroethane	ug/L	50	43.6	87	37-142	
Chloroform	ug/L	50	52.8	106	70-130	
Chloromethane	ug/L	50	34.8	70	48-130	
cis-1,2-Dichloroethene	ug/L	50	49.8	100	70-130	
cis-1,3-Dichloropropene	ug/L	50	49.6	99	70-130	
Dibromochloromethane	ug/L	50	48.7	97	70-130	
Dibromomethane	ug/L	50	52.3	105	70-130	
Dichlorodifluoromethane	ug/L	50	46.5	93	53-134	
Diisopropyl ether	ug/L	50	53.9	108	70-135	
Ethylbenzene	ug/L	50	48.1	96	70-130	
Hexachloro-1,3-butadiene	ug/L	50	50.8	102	68-132	
m&p-Xylene	ug/L	100	95.3	95	70-130	
Methyl-tert-butyl ether	ug/L	50	52.7	105	70-130	
Methylene Chloride	ug/L	50	52.9	106	67-132	
Naphthalene	ug/L	50	59.5	119	70-130	
o-Xylene	ug/L	50	49.0	98	70-131	
p-Isopropyltoluene	ug/L	50	48.1	96	70-130	
Styrene	ug/L	50	52.3	105	70-130	
Tetrachloroethene	ug/L	50	52.0	104	69-130	
Toluene	ug/L	50	48.4	97	70-130	
trans-1,2-Dichloroethene	ug/L	50	54.4	109	70-130	
trans-1,3-Dichloropropene	ug/L	50	51.1	102	70-130	
Trichloroethene	ug/L	50	50.5	101	70-130	
Trichlorofluoromethane	ug/L	50	45.7	91	63-130	
Vinyl acetate	ug/L	100	96.7	97	55-143	
Vinyl chloride	ug/L	50	52.3	105	70-131	
Xylene (Total)	ug/L	150	144	96	70-130	
1,2-Dichloroethane-d4 (S)	%			96	70-130	
4-Bromofluorobenzene (S)	%			103	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop-Flex onsite
Pace Project No.: 92478032

LABORATORY CONTROL SAMPLE: 2892231

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE SAMPLE: 2892233

Parameter	Units	92478024015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	21.5	107	73-134	
1,1,1-Trichloroethane	ug/L	ND	20	34.9	175	82-143	M1
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20.3	102	70-136	
1,1,2-Trichloroethane	ug/L	ND	20	21.9	109	70-135	
1,1-Dichloroethane	ug/L	12.8	20	36.2	117	70-139	
1,1-Dichloroethene	ug/L	58.0	20	87.1	146	70-154	
1,1-Dichloropropene	ug/L	ND	20	24.0	120	70-149	
1,2,3-Trichlorobenzene	ug/L	ND	20	22.7	113	70-135	IH
1,2,3-Trichloropropane	ug/L	ND	20	18.5	93	71-137	
1,2,4-Trichlorobenzene	ug/L	ND	20	22.2	111	73-140	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	21.0	105	65-134	
1,2-Dibromoethane (EDB)	ug/L	ND	20	21.8	109	70-137	
1,2-Dichlorobenzene	ug/L	ND	20	20.7	104	70-133	
1,2-Dichloroethane	ug/L	ND	20	22.4	108	70-137	
1,2-Dichloropropane	ug/L	ND	20	21.6	108	70-140	
1,3-Dichlorobenzene	ug/L	ND	20	21.0	105	70-135	
1,3-Dichloropropane	ug/L	ND	20	21.3	107	70-143	
1,4-Dichlorobenzene	ug/L	ND	20	20.1	100	70-133	
2,2-Dichloropropane	ug/L	ND	20	24.6	123	61-148	
2-Butanone (MEK)	ug/L	ND	40	48.6	121	60-139	
2-Chlorotoluene	ug/L	ND	20	19.4	97	70-144	
2-Hexanone	ug/L	ND	40	44.2	111	65-138	
4-Chlorotoluene	ug/L	ND	20	21.1	105	70-137	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	44.7	112	65-135	
Acetone	ug/L	ND	40	45.4	114	60-148	
Benzene	ug/L	ND	20	21.7	109	70-151	
Bromobenzene	ug/L	ND	20	20.1	100	70-136	
Bromochloromethane	ug/L	ND	20	22.7	113	70-141	
Bromodichloromethane	ug/L	ND	20	23.6	118	70-138	
Bromoform	ug/L	ND	20	19.4	97	63-130	
Bromomethane	ug/L	ND	20	19.4	97	15-152	
Carbon tetrachloride	ug/L	ND	20	25.4	127	70-143	
Chlorobenzene	ug/L	ND	20	20.4	102	70-138	
Chloroethane	ug/L	ND	20	22.3	111	52-163	
Chloroform	ug/L	ND	20	24.2	121	70-139	
Chloromethane	ug/L	ND	20	19.8	99	41-139	
cis-1,2-Dichloroethene	ug/L	ND	20	22.1	111	70-141	
cis-1,3-Dichloropropene	ug/L	ND	20	22.3	112	70-137	
Dibromochloromethane	ug/L	ND	20	19.8	99	70-134	
Dibromomethane	ug/L	ND	20	21.9	109	70-138	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop-Flex onsite

Pace Project No.: 92478032

MATRIX SPIKE SAMPLE: 2892233		92478024015	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Dichlorodifluoromethane	ug/L	ND	20	24.7	124	47-155	
Diisopropyl ether	ug/L	ND	20	24.8	124	63-144	
Ethylbenzene	ug/L	ND	20	20.1	101	66-153	
Hexachloro-1,3-butadiene	ug/L	ND	20	20.6	103	65-149	
m&p-Xylene	ug/L	ND	40	40.0	100	69-152	
Methyl-tert-butyl ether	ug/L	1.1	20	24.5	117	54-156	
Methylene Chloride	ug/L	ND	20	23.9	120	42-159	
Naphthalene	ug/L	ND	20	22.2	111	61-148	
o-Xylene	ug/L	ND	20	19.8	99	70-148	
p-Isopropyltoluene	ug/L	ND	20	20.9	104	70-146	
Styrene	ug/L	ND	20	20.8	104	70-135	
Tetrachloroethene	ug/L	ND	20	22.2	111	59-143	
Toluene	ug/L	ND	20	21.0	105	59-148	
trans-1,2-Dichloroethene	ug/L	ND	20	23.2	116	70-146	
trans-1,3-Dichloropropene	ug/L	ND	20	22.3	112	70-135	
Trichloroethene	ug/L	ND	20	22.5	113	70-147	
Trichlorofluoromethane	ug/L	ND	20	25.0	125	70-148	
Vinyl acetate	ug/L	ND	40	44.8	112	49-151	
Vinyl chloride	ug/L	ND	20	25.2	126	70-156	
Xylene (Total)	ug/L	ND	60	59.8	100	63-158	
1,2-Dichloroethane-d4 (S)	%				111	70-130	
4-Bromofluorobenzene (S)	%				105	70-130	
Toluene-d8 (S)	%				100	70-130	

SAMPLE DUPLICATE: 2892232

Parameter	Units	92478032010	Dup	RPD	Max	Qualifiers
		Result	Result		RPD	
1,1,1,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,1-Trichloroethane	ug/L	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,2-Trichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethene	ug/L	ND	ND		30	
1,1-Dichloropropene	ug/L	ND	ND		30	
1,2,3-Trichlorobenzene	ug/L	ND	ND		30 IH	
1,2,3-Trichloropropane	ug/L	ND	ND		30	
1,2,4-Trichlorobenzene	ug/L	ND	ND		30	
1,2-Dibromo-3-chloropropane	ug/L	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/L	ND	ND		30	
1,2-Dichlorobenzene	ug/L	ND	ND		30	
1,2-Dichloroethane	ug/L	ND	ND		30	
1,2-Dichloropropane	ug/L	ND	ND		30	
1,3-Dichlorobenzene	ug/L	ND	ND		30	
1,3-Dichloropropane	ug/L	ND	ND		30	
1,4-Dichlorobenzene	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: Kop-Flex onsite

Pace Project No.: 92478032

SAMPLE DUPLICATE: 2892232

Parameter	Units	92478032010 Result	Dup Result	RPD	Max RPD	Qualifiers
2,2-Dichloropropane	ug/L	ND	ND		30	
2-Butanone (MEK)	ug/L	ND	ND		30	
2-Chlorotoluene	ug/L	ND	ND		30	
2-Hexanone	ug/L	ND	ND		30	
4-Chlorotoluene	ug/L	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	ND		30	
Acetone	ug/L	ND	ND		30	
Benzene	ug/L	ND	ND		30	
Bromobenzene	ug/L	ND	ND		30	
Bromochloromethane	ug/L	ND	ND		30	
Bromodichloromethane	ug/L	ND	ND		30	
Bromoform	ug/L	ND	ND		30	
Bromomethane	ug/L	ND	ND		30 v2	
Carbon tetrachloride	ug/L	ND	ND		30	
Chlorobenzene	ug/L	ND	ND		30	
Chloroethane	ug/L	ND	ND		30	
Chloroform	ug/L	ND	ND		30	
Chloromethane	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	ND	ND		30	
cis-1,3-Dichloropropene	ug/L	ND	ND		30	
Dibromochloromethane	ug/L	ND	ND		30	
Dibromomethane	ug/L	ND	ND		30	
Dichlorodifluoromethane	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Hexachloro-1,3-butadiene	ug/L	ND	ND		30	
m&p-Xylene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Methylene Chloride	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
o-Xylene	ug/L	ND	ND		30	
p-Isopropyltoluene	ug/L	ND	ND		30	
Styrene	ug/L	ND	ND		30	
Tetrachloroethene	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
trans-1,2-Dichloroethene	ug/L	ND	ND		30	
trans-1,3-Dichloropropene	ug/L	ND	ND		30	
Trichloroethene	ug/L	ND	ND		30	
Trichlorofluoromethane	ug/L	ND	ND		30	
Vinyl acetate	ug/L	ND	ND		30	
Vinyl chloride	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	118	115			
4-Bromofluorobenzene (S)	%	99	95			
Toluene-d8 (S)	%	100	101			

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QUALITY CONTROL DATA

Project: Kop-Flex onsite
Pace Project No.: 92478032

QC Batch: 543215 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92478032014, 92478032015, 92478032016, 92478032017, 92478032018, 92478032019, 92478032020, 92478032021, 92478032024, 92478032025

METHOD BLANK: 2893742 Matrix: Water
Associated Lab Samples: 92478032014, 92478032015, 92478032016, 92478032017, 92478032018, 92478032019, 92478032020, 92478032021, 92478032024, 92478032025

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/26/20 16:36	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/26/20 16:36	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/26/20 16:36	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/26/20 16:36	
1,1-Dichloroethane	ug/L	ND	1.0	05/26/20 16:36	
1,1-Dichloroethene	ug/L	ND	1.0	05/26/20 16:36	
1,1-Dichloropropene	ug/L	ND	1.0	05/26/20 16:36	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/26/20 16:36	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/26/20 16:36	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/26/20 16:36	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	05/26/20 16:36	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/26/20 16:36	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/26/20 16:36	
1,2-Dichloroethane	ug/L	ND	1.0	05/26/20 16:36	
1,2-Dichloropropane	ug/L	ND	1.0	05/26/20 16:36	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/26/20 16:36	
1,3-Dichloropropane	ug/L	ND	1.0	05/26/20 16:36	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/26/20 16:36	
2,2-Dichloropropane	ug/L	ND	1.0	05/26/20 16:36	
2-Butanone (MEK)	ug/L	ND	5.0	05/26/20 16:36	
2-Chlorotoluene	ug/L	ND	1.0	05/26/20 16:36	
2-Hexanone	ug/L	ND	5.0	05/26/20 16:36	
4-Chlorotoluene	ug/L	ND	1.0	05/26/20 16:36	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/26/20 16:36	
Acetone	ug/L	ND	25.0	05/26/20 16:36	
Benzene	ug/L	ND	1.0	05/26/20 16:36	
Bromobenzene	ug/L	ND	1.0	05/26/20 16:36	
Bromochloromethane	ug/L	ND	1.0	05/26/20 16:36	
Bromodichloromethane	ug/L	ND	1.0	05/26/20 16:36	
Bromoform	ug/L	ND	1.0	05/26/20 16:36	
Bromomethane	ug/L	ND	2.0	05/26/20 16:36	IK
Carbon tetrachloride	ug/L	ND	1.0	05/26/20 16:36	
Chlorobenzene	ug/L	ND	1.0	05/26/20 16:36	
Chloroethane	ug/L	ND	1.0	05/26/20 16:36	
Chloroform	ug/L	ND	5.0	05/26/20 16:36	
Chloromethane	ug/L	ND	1.0	05/26/20 16:36	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/26/20 16:36	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/26/20 16:36	
Dibromochloromethane	ug/L	ND	1.0	05/26/20 16:36	

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QUALITY CONTROL DATA

Project: Kop-Flex onsite

Pace Project No.: 92478032

METHOD BLANK: 2893742

Matrix: Water

Associated Lab Samples: 92478032014, 92478032015, 92478032016, 92478032017, 92478032018, 92478032019, 92478032020, 92478032021, 92478032024, 92478032025

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	05/26/20 16:36	
Dichlorodifluoromethane	ug/L	ND	1.0	05/26/20 16:36	
Diisopropyl ether	ug/L	ND	1.0	05/26/20 16:36	
Ethylbenzene	ug/L	ND	1.0	05/26/20 16:36	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	05/26/20 16:36	
m&p-Xylene	ug/L	ND	2.0	05/26/20 16:36	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/26/20 16:36	
Methylene Chloride	ug/L	ND	5.0	05/26/20 16:36	
Naphthalene	ug/L	ND	1.0	05/26/20 16:36	
o-Xylene	ug/L	ND	1.0	05/26/20 16:36	
p-Isopropyltoluene	ug/L	ND	1.0	05/26/20 16:36	
Styrene	ug/L	ND	1.0	05/26/20 16:36	
Tetrachloroethene	ug/L	ND	1.0	05/26/20 16:36	
Toluene	ug/L	ND	1.0	05/26/20 16:36	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/26/20 16:36	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/26/20 16:36	
Trichloroethene	ug/L	ND	1.0	05/26/20 16:36	
Trichlorofluoromethane	ug/L	ND	1.0	05/26/20 16:36	
Vinyl acetate	ug/L	ND	2.0	05/26/20 16:36	
Vinyl chloride	ug/L	ND	1.0	05/26/20 16:36	
Xylene (Total)	ug/L	ND	1.0	05/26/20 16:36	
1,2-Dichloroethane-d4 (S)	%	91	70-130	05/26/20 16:36	
4-Bromofluorobenzene (S)	%	99	70-130	05/26/20 16:36	
Toluene-d8 (S)	%	98	70-130	05/26/20 16:36	

LABORATORY CONTROL SAMPLE: 2893743

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	50.9	102	70-130	
1,1,1-Trichloroethane	ug/L	50	50.3	101	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	47.2	94	70-130	
1,1,2-Trichloroethane	ug/L	50	49.4	99	70-130	
1,1-Dichloroethane	ug/L	50	50.9	102	70-130	
1,1-Dichloroethene	ug/L	50	53.7	107	70-130	
1,1-Dichloropropene	ug/L	50	50.0	100	70-130	
1,2,3-Trichlorobenzene	ug/L	50	53.4	107	70-130	
1,2,3-Trichloropropane	ug/L	50	48.0	96	70-130	
1,2,4-Trichlorobenzene	ug/L	50	55.0	110	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	55.0	110	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	48.7	97	70-130	
1,2-Dichlorobenzene	ug/L	50	52.3	105	70-130	
1,2-Dichloroethane	ug/L	50	46.4	93	70-130	
1,2-Dichloropropane	ug/L	50	48.9	98	70-130	

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QUALITY CONTROL DATA

Project: Kop-Flex onsite
Pace Project No.: 92478032

LABORATORY CONTROL SAMPLE: 2893743

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3-Dichlorobenzene	ug/L	50	52.0	104	70-130	
1,3-Dichloropropane	ug/L	50	48.0	96	70-131	
1,4-Dichlorobenzene	ug/L	50	48.1	96	70-130	
2,2-Dichloropropane	ug/L	50	56.4	113	69-130	
2-Butanone (MEK)	ug/L	100	94.8	95	64-135	
2-Chlorotoluene	ug/L	50	50.9	102	70-130	
2-Hexanone	ug/L	100	97.9	98	66-135	
4-Chlorotoluene	ug/L	50	50.4	101	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	98.3	98	70-130	
Acetone	ug/L	100	100	100	61-157	
Benzene	ug/L	50	49.3	99	70-130	
Bromobenzene	ug/L	50	50.9	102	70-130	
Bromochloromethane	ug/L	50	52.0	104	70-130	
Bromodichloromethane	ug/L	50	47.6	95	70-130	
Bromoform	ug/L	50	51.4	103	70-130	
Bromomethane	ug/L	50	50.7	101	38-130	IK
Carbon tetrachloride	ug/L	50	52.5	105	70-130	
Chlorobenzene	ug/L	50	48.8	98	70-130	
Chloroethane	ug/L	50	44.7	89	37-142	
Chloroform	ug/L	50	49.0	98	70-130	
Chloromethane	ug/L	50	40.4	81	48-130	
cis-1,2-Dichloroethene	ug/L	50	49.4	99	70-130	
cis-1,3-Dichloropropene	ug/L	50	50.8	102	70-130	
Dibromochloromethane	ug/L	50	51.5	103	70-130	
Dibromomethane	ug/L	50	49.3	99	70-130	
Dichlorodifluoromethane	ug/L	50	47.2	94	53-134	
Diisopropyl ether	ug/L	50	50.1	100	70-135	
Ethylbenzene	ug/L	50	48.3	97	70-130	
Hexachloro-1,3-butadiene	ug/L	50	55.5	111	68-132	
m&p-Xylene	ug/L	100	97.9	98	70-130	
Methyl-tert-butyl ether	ug/L	50	52.3	105	70-130	
Methylene Chloride	ug/L	50	47.5	95	67-132	
Naphthalene	ug/L	50	51.4	103	70-130	
o-Xylene	ug/L	50	49.3	99	70-131	
p-Isopropyltoluene	ug/L	50	50.1	100	70-130	
Styrene	ug/L	50	50.8	102	70-130	
Tetrachloroethene	ug/L	50	52.7	105	69-130	
Toluene	ug/L	50	48.0	96	70-130	
trans-1,2-Dichloroethene	ug/L	50	53.2	106	70-130	
trans-1,3-Dichloropropene	ug/L	50	47.6	95	70-130	
Trichloroethene	ug/L	50	50.9	102	70-130	
Trichlorofluoromethane	ug/L	50	49.3	99	63-130	
Vinyl acetate	ug/L	100	98.0	98	55-143	
Vinyl chloride	ug/L	50	52.8	106	70-131	
Xylene (Total)	ug/L	150	147	98	70-130	
1,2-Dichloroethane-d4 (S)	%			99	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop-Flex onsite

Pace Project No.: 92478032

LABORATORY CONTROL SAMPLE: 2893743

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2893744 2893745

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		92478032020 Result	Spike Conc.	Spike Conc.	Result							Result
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	20.4	20.3	102	101	73-134	1	30	
1,1,1-Trichloroethane	ug/L	11.9	20	20	33.3	32.6	107	104	82-143	2	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	19.7	20.0	99	100	70-136	1	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	20.0	19.8	100	99	70-135	1	30	
1,1-Dichloroethane	ug/L	3.0	20	20	23.0	23.0	100	100	70-139	0	30	
1,1-Dichloroethene	ug/L	4.1	20	20	25.3	25.5	106	107	70-154	1	30	
1,1-Dichloropropene	ug/L	ND	20	20	20.6	21.0	103	105	70-149	2	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	19.5	19.9	97	99	70-135	2	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	20.1	19.8	101	99	71-137	2	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	19.7	19.7	98	99	73-140	0	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	20.5	20.4	102	102	65-134	0	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	20.9	20.7	105	104	70-137	1	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	19.4	19.4	97	97	70-133	0	30	
1,2-Dichloroethane	ug/L	ND	20	20	19.4	19.6	97	98	70-137	1	30	
1,2-Dichloropropane	ug/L	ND	20	20	19.7	20.2	98	101	70-140	3	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	19.3	19.4	97	97	70-135	0	30	
1,3-Dichloropropane	ug/L	ND	20	20	20.4	20.5	102	103	70-143	0	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	19.6	19.4	98	97	70-133	1	30	
2,2-Dichloropropane	ug/L	ND	20	20	22.2	22.3	111	111	61-148	0	30	
2-Butanone (MEK)	ug/L	ND	40	40	42.9	42.9	107	107	60-139	0	30	
2-Chlorotoluene	ug/L	ND	20	20	19.4	18.8	97	94	70-144	3	30	
2-Hexanone	ug/L	ND	40	40	43.5	42.7	109	107	65-138	2	30	
4-Chlorotoluene	ug/L	ND	20	20	19.2	18.7	96	94	70-137	3	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	42.9	42.4	107	106	65-135	1	30	
Acetone	ug/L	ND	40	40	45.3	43.5	113	109	60-148	4	30	
Benzene	ug/L	ND	20	20	19.7	20.2	98	101	70-151	3	30	
Bromobenzene	ug/L	ND	20	20	19.3	19.6	96	98	70-136	2	30	
Bromochloromethane	ug/L	ND	20	20	20.8	20.1	104	100	70-141	4	30	
Bromodichloromethane	ug/L	ND	20	20	20.0	20.2	100	101	70-138	1	30	
Bromoform	ug/L	ND	20	20	19.6	19.5	98	97	63-130	0	30	
Bromomethane	ug/L	ND	20	20	21.8	24.7	109	123	15-152	12	30	
Carbon tetrachloride	ug/L	ND	20	20	21.2	20.8	106	104	70-143	2	30	
Chlorobenzene	ug/L	ND	20	20	20.2	20.1	101	100	70-138	0	30	
Chloroethane	ug/L	ND	20	20	19.0	19.0	95	95	52-163	0	30	
Chloroform	ug/L	ND	20	20	19.8	19.1	99	95	70-139	4	30	
Chloromethane	ug/L	ND	20	20	17.4	17.8	87	89	41-139	2	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	19.7	20.1	99	100	70-141	2	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	20.3	20.0	101	100	70-137	1	30	

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QUALITY CONTROL DATA

Project: Kop-Flex onsite
Pace Project No.: 92478032

Parameter	Units	2893744		2893745		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Dibromochloromethane	ug/L	ND	20	20	20.2	20.5	101	102	70-134	1	30	
Dibromomethane	ug/L	ND	20	20	20.2	20.1	101	101	70-138	0	30	
Dichlorodifluoromethane	ug/L	ND	20	20	18.5	18.6	92	93	47-155	1	30	
Diisopropyl ether	ug/L	ND	20	20	20.3	20.6	102	103	63-144	1	30	
Ethylbenzene	ug/L	ND	20	20	18.9	18.9	94	94	66-153	0	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	21.5	21.4	108	107	65-149	1	30	
m&p-Xylene	ug/L	ND	40	40	38.0	37.8	95	94	69-152	1	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	20.8	21.0	104	105	54-156	1	30	
Methylene Chloride	ug/L	ND	20	20	20.8	21.1	104	105	42-159	1	30	
Naphthalene	ug/L	ND	20	20	18.1	18.6	90	93	61-148	3	30	
o-Xylene	ug/L	ND	20	20	19.3	19.1	97	96	70-148	1	30	
p-Isopropyltoluene	ug/L	ND	20	20	21.0	20.7	105	103	70-146	1	30	
Styrene	ug/L	ND	20	20	19.6	19.9	98	99	70-135	1	30	
Tetrachloroethene	ug/L	ND	20	20	20.0	19.9	100	100	59-143	0	30	
Toluene	ug/L	ND	20	20	19.0	19.1	95	96	59-148	1	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	20.0	20.2	100	101	70-146	1	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	20.0	19.9	100	100	70-135	0	30	
Trichloroethene	ug/L	ND	20	20	21.2	21.1	106	105	70-147	1	30	
Trichlorofluoromethane	ug/L	ND	20	20	19.8	19.7	99	99	70-148	1	30	
Vinyl acetate	ug/L	ND	40	40	44.7	44.8	112	112	49-151	0	30	
Vinyl chloride	ug/L	ND	20	20	22.2	22.2	111	111	70-156	0	30	
Xylene (Total)	ug/L	ND	60	60	57.4	56.9	96	95	63-158	1	30	
1,2-Dichloroethane-d4 (S)	%						105	103	70-130			
4-Bromofluorobenzene (S)	%						100	100	70-130			
Toluene-d8 (S)	%						98	99	70-130			

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QUALITY CONTROL DATA

Project: Kop-Flex onsite
Pace Project No.: 92478032

QC Batch: 543382 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92478032013

METHOD BLANK: 2894165 Matrix: Water
Associated Lab Samples: 92478032013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/26/20 12:50	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/26/20 12:50	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/26/20 12:50	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/26/20 12:50	
1,1-Dichloroethane	ug/L	ND	1.0	05/26/20 12:50	
1,1-Dichloroethene	ug/L	ND	1.0	05/26/20 12:50	
1,1-Dichloropropene	ug/L	ND	1.0	05/26/20 12:50	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/26/20 12:50	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/26/20 12:50	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/26/20 12:50	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	05/26/20 12:50	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/26/20 12:50	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/26/20 12:50	
1,2-Dichloroethane	ug/L	ND	1.0	05/26/20 12:50	
1,2-Dichloropropane	ug/L	ND	1.0	05/26/20 12:50	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/26/20 12:50	
1,3-Dichloropropane	ug/L	ND	1.0	05/26/20 12:50	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/26/20 12:50	
2,2-Dichloropropane	ug/L	ND	1.0	05/26/20 12:50	
2-Butanone (MEK)	ug/L	ND	5.0	05/26/20 12:50	
2-Chlorotoluene	ug/L	ND	1.0	05/26/20 12:50	
2-Hexanone	ug/L	ND	5.0	05/26/20 12:50	v1
4-Chlorotoluene	ug/L	ND	1.0	05/26/20 12:50	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/26/20 12:50	
Acetone	ug/L	ND	25.0	05/26/20 12:50	
Benzene	ug/L	ND	1.0	05/26/20 12:50	
Bromobenzene	ug/L	ND	1.0	05/26/20 12:50	
Bromochloromethane	ug/L	ND	1.0	05/26/20 12:50	
Bromodichloromethane	ug/L	ND	1.0	05/26/20 12:50	
Bromoform	ug/L	ND	1.0	05/26/20 12:50	
Bromomethane	ug/L	ND	2.0	05/26/20 12:50	IH
Carbon tetrachloride	ug/L	ND	1.0	05/26/20 12:50	
Chlorobenzene	ug/L	ND	1.0	05/26/20 12:50	
Chloroethane	ug/L	ND	1.0	05/26/20 12:50	
Chloroform	ug/L	ND	5.0	05/26/20 12:50	
Chloromethane	ug/L	ND	1.0	05/26/20 12:50	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/26/20 12:50	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/26/20 12:50	
Dibromochloromethane	ug/L	ND	1.0	05/26/20 12:50	
Dibromomethane	ug/L	ND	1.0	05/26/20 12:50	

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QUALITY CONTROL DATA

Project: Kop-Flex onsite
Pace Project No.: 92478032

METHOD BLANK: 2894165 Matrix: Water
Associated Lab Samples: 92478032013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	05/26/20 12:50	
Diisopropyl ether	ug/L	ND	1.0	05/26/20 12:50	
Ethylbenzene	ug/L	ND	1.0	05/26/20 12:50	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	05/26/20 12:50	IH
m&p-Xylene	ug/L	ND	2.0	05/26/20 12:50	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/26/20 12:50	
Methylene Chloride	ug/L	ND	5.0	05/26/20 12:50	v1
Naphthalene	ug/L	ND	1.0	05/26/20 12:50	
o-Xylene	ug/L	ND	1.0	05/26/20 12:50	
p-Isopropyltoluene	ug/L	ND	1.0	05/26/20 12:50	
Styrene	ug/L	ND	1.0	05/26/20 12:50	
Tetrachloroethene	ug/L	ND	1.0	05/26/20 12:50	
Toluene	ug/L	ND	1.0	05/26/20 12:50	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/26/20 12:50	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/26/20 12:50	
Trichloroethene	ug/L	ND	1.0	05/26/20 12:50	
Trichlorofluoromethane	ug/L	ND	1.0	05/26/20 12:50	
Vinyl acetate	ug/L	ND	2.0	05/26/20 12:50	v1
Vinyl chloride	ug/L	ND	1.0	05/26/20 12:50	
Xylene (Total)	ug/L	ND	1.0	05/26/20 12:50	
1,2-Dichloroethane-d4 (S)	%	115	70-130	05/26/20 12:50	
4-Bromofluorobenzene (S)	%	100	70-130	05/26/20 12:50	
Toluene-d8 (S)	%	98	70-130	05/26/20 12:50	

LABORATORY CONTROL SAMPLE: 2894166

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	54.2	108	70-130	
1,1,1-Trichloroethane	ug/L	50	49.3	99	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	53.0	106	70-130	
1,1,2-Trichloroethane	ug/L	50	47.6	95	70-130	
1,1-Dichloroethane	ug/L	50	51.9	104	70-130	
1,1-Dichloroethene	ug/L	50	56.0	112	70-130	
1,1-Dichloropropene	ug/L	50	50.5	101	70-130	
1,2,3-Trichlorobenzene	ug/L	50	50.1	100	70-130	
1,2,3-Trichloropropane	ug/L	50	51.5	103	70-130	
1,2,4-Trichlorobenzene	ug/L	50	52.4	105	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	44.4	89	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	54.1	108	70-130	
1,2-Dichlorobenzene	ug/L	50	55.5	111	70-130	
1,2-Dichloroethane	ug/L	50	52.3	105	70-130	
1,2-Dichloropropane	ug/L	50	53.1	106	70-130	
1,3-Dichlorobenzene	ug/L	50	55.7	111	70-130	
1,3-Dichloropropane	ug/L	50	56.2	112	70-131	

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QUALITY CONTROL DATA

Project: Kop-Flex onsite

Pace Project No.: 92478032

LABORATORY CONTROL SAMPLE: 2894166

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	53.8	108	70-130	
2,2-Dichloropropane	ug/L	50	48.4	97	69-130	
2-Butanone (MEK)	ug/L	100	112	112	64-135	
2-Chlorotoluene	ug/L	50	54.3	109	70-130	
2-Hexanone	ug/L	100	123	123	66-135	v1
4-Chlorotoluene	ug/L	50	54.8	110	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	113	113	70-130	
Acetone	ug/L	100	115	115	61-157	
Benzene	ug/L	50	52.4	105	70-130	
Bromobenzene	ug/L	50	54.5	109	70-130	
Bromochloromethane	ug/L	50	45.8	92	70-130	
Bromodichloromethane	ug/L	50	49.0	98	70-130	
Bromoform	ug/L	50	50.8	102	70-130	
Bromomethane	ug/L	50	41.8	84	38-130	IH
Carbon tetrachloride	ug/L	50	52.6	105	70-130	
Chlorobenzene	ug/L	50	53.6	107	70-130	
Chloroethane	ug/L	50	42.2	84	37-142	
Chloroform	ug/L	50	49.5	99	70-130	
Chloromethane	ug/L	50	49.8	100	48-130	
cis-1,2-Dichloroethene	ug/L	50	51.2	102	70-130	
cis-1,3-Dichloropropene	ug/L	50	49.5	99	70-130	
Dibromochloromethane	ug/L	50	55.7	111	70-130	
Dibromomethane	ug/L	50	50.5	101	70-130	
Dichlorodifluoromethane	ug/L	50	44.2	88	53-134	
Diisopropyl ether	ug/L	50	58.7	117	70-135	
Ethylbenzene	ug/L	50	54.9	110	70-130	
Hexachloro-1,3-butadiene	ug/L	50	49.7	99	68-132	IH
m&p-Xylene	ug/L	100	109	109	70-130	
Methyl-tert-butyl ether	ug/L	50	52.4	105	70-130	
Methylene Chloride	ug/L	50	60.8	122	67-132	v1
Naphthalene	ug/L	50	49.2	98	70-130	
o-Xylene	ug/L	50	54.1	108	70-131	
p-Isopropyltoluene	ug/L	50	56.8	114	70-130	
Styrene	ug/L	50	56.9	114	70-130	
Tetrachloroethene	ug/L	50	53.7	107	69-130	
Toluene	ug/L	50	46.8	94	70-130	
trans-1,2-Dichloroethene	ug/L	50	54.4	109	70-130	
trans-1,3-Dichloropropene	ug/L	50	49.1	98	70-130	
Trichloroethene	ug/L	50	50.5	101	70-130	
Trichlorofluoromethane	ug/L	50	43.4	87	63-130	
Vinyl acetate	ug/L	100	132	132	55-143	v1
Vinyl chloride	ug/L	50	50.9	102	70-131	
Xylene (Total)	ug/L	150	163	109	70-130	
1,2-Dichloroethane-d4 (S)	%			107	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			98	70-130	

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QUALITY CONTROL DATA

Project: Kop-Flex onsite
Pace Project No.: 92478032

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2894167		2894168									
Parameter	Units	92478005001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	RPD	RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits				
1,1,1,2-Tetrachloroethane	ug/L	ND	100	100	120	139	120	139	73-134	15	30	H1,M1	
1,1,1-Trichloroethane	ug/L	ND	100	100	122	140	122	140	82-143	14	30	H1	
1,1,2,2-Tetrachloroethane	ug/L	ND	100	100	121	140	121	140	70-136	15	30	H1,M1	
1,1,2-Trichloroethane	ug/L	ND	100	100	119	133	119	133	70-135	11	30	H1	
1,1-Dichloroethane	ug/L	ND	100	100	139	149	139	149	70-139	6	30	H1,M1	
1,1-Dichloroethene	ug/L	ND	100	100	147	164	147	164	70-154	11	30	H1,M1	
1,1-Dichloropropene	ug/L	ND	100	100	131	147	131	147	70-149	11	30	H1	
1,2,3-Trichlorobenzene	ug/L	ND	100	100	116	130	116	130	70-135	11	30	H1	
1,2,3-Trichloropropane	ug/L	ND	100	100	123	144	123	144	71-137	16	30	H1,M1	
1,2,4-Trichlorobenzene	ug/L	ND	100	100	123	123	123	123	73-140	0	30	H1	
1,2-Dibromo-3-chloropropane	ug/L	ND	100	100	109	113	109	113	65-134	3	30	H1	
1,2-Dibromoethane (EDB)	ug/L	ND	100	100	125	146	125	146	70-137	15	30	H1,M1	
1,2-Dichlorobenzene	ug/L	ND	100	100	139	140	139	140	70-133	1	30	H1,M1	
1,2-Dichloroethane	ug/L	ND	100	100	137	148	137	148	70-137	8	30	H1,M1	
1,2-Dichloropropane	ug/L	ND	100	100	131	152	131	152	70-140	15	30	H1,M1	
1,3-Dichlorobenzene	ug/L	ND	100	100	133	134	133	134	70-135	1	30	H1	
1,3-Dichloropropane	ug/L	ND	100	100	134	156	134	156	70-143	15	30	H1,M1	
1,4-Dichlorobenzene	ug/L	ND	100	100	130	134	130	134	70-133	3	30	H1,M1	
2,2-Dichloropropane	ug/L	ND	100	100	128	138	128	138	61-148	7	30	H1	
2-Butanone (MEK)	ug/L	ND	200	200	274	298	137	149	60-139	8	30	H1,M1	
2-Chlorotoluene	ug/L	ND	100	100	145	143	145	143	70-144	1	30	H1,M1	
2-Hexanone	ug/L	ND	200	200	279	324	139	162	65-138	15	30	H1,M1, v1	
4-Chlorotoluene	ug/L	ND	100	100	134	136	134	136	70-137	1	30	H1	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	200	200	285	322	139	157	65-135	12	30	H1,M1	
Acetone	ug/L	ND	200	200	276	304	138	152	60-148	10	30	H1,M1	
Benzene	ug/L	346	100	100	471	502	126	157	70-151	6	30	H1,M1	
Bromobenzene	ug/L	ND	100	100	138	138	138	138	70-136	0	30	H1,M1	
Bromochloromethane	ug/L	ND	100	100	122	135	122	135	70-141	10	30	H1	
Bromodichloromethane	ug/L	ND	100	100	118	133	118	133	70-138	12	30	H1	
Bromoform	ug/L	ND	100	100	106	117	106	117	63-130	9	30	H1	
Bromomethane	ug/L	ND	100	100	136	163	136	163	15-152	18	30	H1,IH, M1	
Carbon tetrachloride	ug/L	ND	100	100	127	142	127	142	70-143	12	30	H1	
Chlorobenzene	ug/L	ND	100	100	134	148	134	148	70-138	10	30	H1,M1	
Chloroethane	ug/L	ND	100	100	129	136	129	136	52-163	5	30	H1	
Chloroform	ug/L	ND	100	100	127	140	127	140	70-139	10	30	H1,M1	
Chloromethane	ug/L	ND	100	100	132	144	130	143	41-139	9	30	H1,M1	
cis-1,2-Dichloroethene	ug/L	ND	100	100	134	149	134	149	70-141	10	30	H1,M1	
cis-1,3-Dichloropropene	ug/L	ND	100	100	126	135	126	135	70-137	7	30	H1	
Dibromochloromethane	ug/L	ND	100	100	122	131	122	131	70-134	7	30	H1	
Dibromomethane	ug/L	ND	100	100	126	141	126	141	70-138	12	30	H1,M1	
Dichlorodifluoromethane	ug/L	ND	100	100	121	131	121	131	47-155	7	30	H1	
Diisopropyl ether	ug/L	8.9	100	100	158	174	149	165	63-144	10	30	H1,M1	
Ethylbenzene	ug/L	205	100	100	327	347	122	141	66-153	6	30	H1	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop-Flex onsite

Pace Project No.: 92478032

Parameter	Units	2894167		2894168		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92478005001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Hexachloro-1,3-butadiene	ug/L	ND	100	100	132	135	132	135	65-149	2	30	H1,IH	
m&p-Xylene	ug/L	719	200	200	969	998	125	140	69-152	3	30	H1	
Methyl-tert-butyl ether	ug/L	27.4	100	100	157	168	129	141	54-156	7	30	H1	
Methylene Chloride	ug/L	ND	100	100	155	170	155	170	42-159	9	30	H1,M1, v1	
Naphthalene	ug/L	110	100	100	230	229	120	120	61-148	0	30	H1	
o-Xylene	ug/L	378	100	100	512	521	135	143	70-148	2	30	H1	
p-Isopropyltoluene	ug/L	ND	100	100	155	158	155	158	70-146	1	30	H1,M1	
Styrene	ug/L	ND	100	100	135	144	132	141	70-135	7	30	H1,M1	
Tetrachloroethene	ug/L	ND	100	100	128	147	128	147	59-143	14	30	H1,M1	
Toluene	ug/L	644	100	100	747	776	103	133	59-148	4	30	H1	
trans-1,2-Dichloroethene	ug/L	ND	100	100	141	154	141	154	70-146	9	30	H1,M1	
trans-1,3-Dichloropropene	ug/L	ND	100	100	121	133	121	133	70-135	9	30	H1	
Trichloroethene	ug/L	ND	100	100	131	139	131	139	70-147	6	30	H1	
Trichlorofluoromethane	ug/L	ND	100	100	114	129	114	129	70-148	13	30	H1	
Vinyl acetate	ug/L	ND	200	200	322	367	161	184	49-151	13	30	H1,M1, v1	
Vinyl chloride	ug/L	ND	100	100	136	147	136	147	70-156	8	30	H1	
Xylene (Total)	ug/L	1100	300	300	1480	1520	128	141	63-158	3	30		
1,2-Dichloroethane-d4 (S)	%						111	113	70-130				
4-Bromofluorobenzene (S)	%						100	102	70-130				
Toluene-d8 (S)	%						100	103	70-130				

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QUALITY CONTROL DATA

Project: Kop-Flex onsite
Pace Project No.: 92478032

QC Batch: 543671 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92478032022, 92478032023

METHOD BLANK: 2895491 Matrix: Water

Associated Lab Samples: 92478032022, 92478032023

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/27/20 13:06	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/27/20 13:06	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/27/20 13:06	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/27/20 13:06	
1,1-Dichloroethane	ug/L	ND	1.0	05/27/20 13:06	
1,1-Dichloroethene	ug/L	ND	1.0	05/27/20 13:06	
1,1-Dichloropropene	ug/L	ND	1.0	05/27/20 13:06	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/27/20 13:06	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/27/20 13:06	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/27/20 13:06	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	05/27/20 13:06	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/27/20 13:06	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/27/20 13:06	
1,2-Dichloroethane	ug/L	ND	1.0	05/27/20 13:06	
1,2-Dichloropropane	ug/L	ND	1.0	05/27/20 13:06	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/27/20 13:06	
1,3-Dichloropropane	ug/L	ND	1.0	05/27/20 13:06	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/27/20 13:06	
2,2-Dichloropropane	ug/L	ND	1.0	05/27/20 13:06	
2-Butanone (MEK)	ug/L	ND	5.0	05/27/20 13:06	
2-Chlorotoluene	ug/L	ND	1.0	05/27/20 13:06	
2-Hexanone	ug/L	ND	5.0	05/27/20 13:06	
4-Chlorotoluene	ug/L	ND	1.0	05/27/20 13:06	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/27/20 13:06	
Acetone	ug/L	ND	25.0	05/27/20 13:06	
Benzene	ug/L	ND	1.0	05/27/20 13:06	
Bromobenzene	ug/L	ND	1.0	05/27/20 13:06	
Bromochloromethane	ug/L	ND	1.0	05/27/20 13:06	
Bromodichloromethane	ug/L	ND	1.0	05/27/20 13:06	
Bromoform	ug/L	ND	1.0	05/27/20 13:06	
Bromomethane	ug/L	ND	2.0	05/27/20 13:06	IK,v2
Carbon tetrachloride	ug/L	ND	1.0	05/27/20 13:06	
Chlorobenzene	ug/L	ND	1.0	05/27/20 13:06	
Chloroethane	ug/L	ND	1.0	05/27/20 13:06	
Chloroform	ug/L	ND	5.0	05/27/20 13:06	
Chloromethane	ug/L	ND	1.0	05/27/20 13:06	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/27/20 13:06	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/27/20 13:06	
Dibromochloromethane	ug/L	ND	1.0	05/27/20 13:06	
Dibromomethane	ug/L	ND	1.0	05/27/20 13:06	

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QUALITY CONTROL DATA

Project: Kop-Flex onsite
Pace Project No.: 92478032

METHOD BLANK: 2895491 Matrix: Water
Associated Lab Samples: 92478032022, 92478032023

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	05/27/20 13:06	
Diisopropyl ether	ug/L	ND	1.0	05/27/20 13:06	
Ethylbenzene	ug/L	ND	1.0	05/27/20 13:06	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	05/27/20 13:06	
m&p-Xylene	ug/L	ND	2.0	05/27/20 13:06	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/27/20 13:06	
Methylene Chloride	ug/L	ND	5.0	05/27/20 13:06	
Naphthalene	ug/L	ND	1.0	05/27/20 13:06	
o-Xylene	ug/L	ND	1.0	05/27/20 13:06	
p-Isopropyltoluene	ug/L	ND	1.0	05/27/20 13:06	
Styrene	ug/L	ND	1.0	05/27/20 13:06	
Tetrachloroethene	ug/L	ND	1.0	05/27/20 13:06	
Toluene	ug/L	ND	1.0	05/27/20 13:06	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/27/20 13:06	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/27/20 13:06	
Trichloroethene	ug/L	ND	1.0	05/27/20 13:06	
Trichlorofluoromethane	ug/L	ND	1.0	05/27/20 13:06	
Vinyl acetate	ug/L	ND	2.0	05/27/20 13:06	
Vinyl chloride	ug/L	ND	1.0	05/27/20 13:06	
Xylene (Total)	ug/L	ND	1.0	05/27/20 13:06	
1,2-Dichloroethane-d4 (S)	%	92	70-130	05/27/20 13:06	
4-Bromofluorobenzene (S)	%	98	70-130	05/27/20 13:06	
Toluene-d8 (S)	%	99	70-130	05/27/20 13:06	

LABORATORY CONTROL SAMPLE: 2895492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	47.9	96	70-130	
1,1,1-Trichloroethane	ug/L	50	46.6	93	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	46.2	92	70-130	
1,1,2-Trichloroethane	ug/L	50	47.5	95	70-130	
1,1-Dichloroethane	ug/L	50	47.9	96	70-130	
1,1-Dichloroethene	ug/L	50	48.9	98	70-130	
1,1-Dichloropropene	ug/L	50	47.6	95	70-130	
1,2,3-Trichlorobenzene	ug/L	50	48.7	97	70-130	
1,2,3-Trichloropropane	ug/L	50	47.4	95	70-130	
1,2,4-Trichlorobenzene	ug/L	50	50.6	101	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	52.1	104	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	48.1	96	70-130	
1,2-Dichlorobenzene	ug/L	50	47.7	95	70-130	
1,2-Dichloroethane	ug/L	50	43.3	87	70-130	
1,2-Dichloropropane	ug/L	50	47.0	94	70-130	
1,3-Dichlorobenzene	ug/L	50	46.9	94	70-130	
1,3-Dichloropropane	ug/L	50	46.6	93	70-131	

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QUALITY CONTROL DATA

Project: Kop-Flex onsite

Pace Project No.: 92478032

LABORATORY CONTROL SAMPLE: 2895492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	47.1	94	70-130	
2,2-Dichloropropane	ug/L	50	56.5	113	69-130	
2-Butanone (MEK)	ug/L	100	90.1	90	64-135	
2-Chlorotoluene	ug/L	50	47.5	95	70-130	
2-Hexanone	ug/L	100	94.5	94	66-135	
4-Chlorotoluene	ug/L	50	47.2	94	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	92.5	93	70-130	
Acetone	ug/L	100	96.6	97	61-157	
Benzene	ug/L	50	47.7	95	70-130	
Bromobenzene	ug/L	50	46.8	94	70-130	
Bromochloromethane	ug/L	50	51.8	104	70-130	
Bromodichloromethane	ug/L	50	45.6	91	70-130	
Bromoform	ug/L	50	47.1	94	70-130	
Bromomethane	ug/L	50	42.5	85	38-130	IK,v3
Carbon tetrachloride	ug/L	50	49.9	100	70-130	
Chlorobenzene	ug/L	50	46.4	93	70-130	
Chloroethane	ug/L	50	48.5	97	37-142	
Chloroform	ug/L	50	45.8	92	70-130	
Chloromethane	ug/L	50	36.8	74	48-130	
cis-1,2-Dichloroethene	ug/L	50	46.7	93	70-130	
cis-1,3-Dichloropropene	ug/L	50	50.5	101	70-130	
Dibromochloromethane	ug/L	50	48.5	97	70-130	
Dibromomethane	ug/L	50	46.8	94	70-130	
Dichlorodifluoromethane	ug/L	50	41.3	83	53-134	
Diisopropyl ether	ug/L	50	46.4	93	70-135	
Ethylbenzene	ug/L	50	46.7	93	70-130	
Hexachloro-1,3-butadiene	ug/L	50	52.3	105	68-132	
m&p-Xylene	ug/L	100	95.1	95	70-130	
Methyl-tert-butyl ether	ug/L	50	49.7	99	70-130	
Methylene Chloride	ug/L	50	45.3	91	67-132	
Naphthalene	ug/L	50	49.5	99	70-130	
o-Xylene	ug/L	50	47.0	94	70-131	
p-Isopropyltoluene	ug/L	50	48.1	96	70-130	
Styrene	ug/L	50	48.5	97	70-130	
Tetrachloroethene	ug/L	50	50.9	102	69-130	
Toluene	ug/L	50	46.1	92	70-130	
trans-1,2-Dichloroethene	ug/L	50	49.0	98	70-130	
trans-1,3-Dichloropropene	ug/L	50	46.5	93	70-130	
Trichloroethene	ug/L	50	48.5	97	70-130	
Trichlorofluoromethane	ug/L	50	48.1	96	63-130	
Vinyl acetate	ug/L	100	91.7	92	55-143	
Vinyl chloride	ug/L	50	47.1	94	70-131	
Xylene (Total)	ug/L	150	142	95	70-130	
1,2-Dichloroethane-d4 (S)	%			87	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			99	70-130	

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QUALITY CONTROL DATA

Project: Kop-Flex onsite

Pace Project No.: 92478032

Parameter	Units	2895493		2895494		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92478032022 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
1,1,1,2-Tetrachloroethane	ug/L	ND	100	100	103	103	103	103	73-134	0	30		
1,1,1-Trichloroethane	ug/L	518	100	100	573	584	55	67	82-143	2	30	M1	
1,1,2,2-Tetrachloroethane	ug/L	ND	100	100	92.4	95.6	92	96	70-136	3	30		
1,1,2-Trichloroethane	ug/L	ND	100	100	97.2	97.4	97	97	70-135	0	30		
1,1-Dichloroethane	ug/L	425	100	100	477	482	52	57	70-139	1	30	M1	
1,1-Dichloroethene	ug/L	594	100	100	643	659	50	66	70-154	2	30	M1	
1,1-Dichloropropene	ug/L	ND	100	100	95.3	96.1	95	96	70-149	1	30		
1,2,3-Trichlorobenzene	ug/L	ND	100	100	104	104	104	104	70-135	0	30		
1,2,3-Trichloropropane	ug/L	ND	100	100	68.1	69.9	68	70	71-137	3	30	M1	
1,2,4-Trichlorobenzene	ug/L	ND	100	100	104	107	104	107	73-140	3	30		
1,2-Dibromo-3-chloropropane	ug/L	ND	100	100	103	108	103	108	65-134	5	30		
1,2-Dibromoethane (EDB)	ug/L	ND	100	100	98.0	102	98	102	70-137	4	30		
1,2-Dichlorobenzene	ug/L	ND	100	100	102	103	102	103	70-133	1	30		
1,2-Dichloroethane	ug/L	ND	100	100	87.9	90.0	88	90	70-137	2	30		
1,2-Dichloropropane	ug/L	ND	100	100	96.2	96.0	96	96	70-140	0	30		
1,3-Dichlorobenzene	ug/L	ND	100	100	99.9	98.9	100	99	70-135	1	30		
1,3-Dichloropropane	ug/L	ND	100	100	97.7	101	98	101	70-143	3	30		
1,4-Dichlorobenzene	ug/L	ND	100	100	98.0	99.6	98	100	70-133	2	30		
2,2-Dichloropropane	ug/L	ND	100	100	98.3	101	98	101	61-148	3	30		
2-Butanone (MEK)	ug/L	ND	200	200	161	162	80	81	60-139	1	30		
2-Chlorotoluene	ug/L	ND	100	100	101	104	101	104	70-144	2	30		
2-Hexanone	ug/L	ND	200	200	181	184	91	92	65-138	2	30		
4-Chlorotoluene	ug/L	ND	100	100	101	102	101	102	70-137	0	30		
4-Methyl-2-pentanone (MIBK)	ug/L	ND	200	200	179	177	90	89	65-135	1	30		
Acetone	ug/L	ND	200	200	188	190	94	95	60-148	1	30		
Benzene	ug/L	ND	100	100	100	99.3	100	99	70-151	1	30		
Bromobenzene	ug/L	ND	100	100	102	107	102	107	70-136	5	30		
Bromochloromethane	ug/L	ND	100	100	105	106	105	106	70-141	1	30		
Bromodichloromethane	ug/L	ND	100	100	93.0	92.8	93	93	70-138	0	30		
Bromoform	ug/L	ND	100	100	95.6	100	96	100	63-130	5	30		
Bromomethane	ug/L	ND	100	100	92.5	94.7	92	95	15-152	2	30	IK,v3	
Carbon tetrachloride	ug/L	ND	100	100	107	107	107	107	70-143	0	30		
Chlorobenzene	ug/L	ND	100	100	98.7	101	99	101	70-138	2	30		
Chloroethane	ug/L	10.1	100	100	102	106	91	96	52-163	4	30		
Chloroform	ug/L	ND	100	100	88.3	89.2	88	89	70-139	1	30		
Chloromethane	ug/L	ND	100	100	61.5	64.9	61	65	41-139	5	30		
cis-1,2-Dichloroethene	ug/L	ND	100	100	95.8	95.9	92	92	70-141	0	30		
cis-1,3-Dichloropropene	ug/L	ND	100	100	98.5	100	98	100	70-137	2	30		
Dibromochloromethane	ug/L	ND	100	100	97.3	99.9	97	100	70-134	3	30		
Dibromomethane	ug/L	ND	100	100	103	103	103	103	70-138	0	30		
Dichlorodifluoromethane	ug/L	ND	100	100	81.2	83.4	81	83	47-155	3	30		
Diisopropyl ether	ug/L	ND	100	100	87.8	88.7	88	89	63-144	1	30		
Ethylbenzene	ug/L	ND	100	100	100	100	100	100	66-153	0	30		
Hexachloro-1,3-butadiene	ug/L	ND	100	100	106	114	106	114	65-149	7	30		

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QUALITY CONTROL DATA

Project: Kop-Flex onsite

Pace Project No.: 92478032

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2895493			2895494							
Parameter	Units	92478032022	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual	
		Result	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD		
m&p-Xylene	ug/L	ND	200	200	208	207	102	102	69-152	0	30	
Methyl-tert-butyl ether	ug/L	ND	100	100	100	101	100	101	54-156	1	30	
Methylene Chloride	ug/L	ND	100	100	89.5	89.3	89	89	42-159	0	30	
Naphthalene	ug/L	ND	100	100	102	101	102	101	61-148	1	30	
o-Xylene	ug/L	ND	100	100	103	100	102	99	70-148	3	30	
p-Isopropyltoluene	ug/L	ND	100	100	98.8	101	99	101	70-146	3	30	
Styrene	ug/L	ND	100	100	100	102	100	102	70-135	2	30	
Tetrachloroethene	ug/L	ND	100	100	116	120	112	116	59-143	3	30	
Toluene	ug/L	ND	100	100	102	101	100	99	59-148	1	30	
trans-1,2-Dichloroethene	ug/L	ND	100	100	99.9	99.1	100	99	70-146	1	30	
trans-1,3-Dichloropropene	ug/L	ND	100	100	92.3	94.0	92	94	70-135	2	30	
Trichloroethene	ug/L	12.0	100	100	115	117	103	105	70-147	2	30	
Trichlorofluoromethane	ug/L	ND	100	100	92.2	93.3	92	93	70-148	1	30	
Vinyl acetate	ug/L	ND	200	200	171	169	85	85	49-151	1	30	
Vinyl chloride	ug/L	ND	100	100	94.1	97.7	91	94	70-156	4	30	
Xylene (Total)	ug/L	ND	300	300	311	307	104	102	63-158	1	30	
1,2-Dichloroethane-d4 (S)	%						91	90	70-130			
4-Bromofluorobenzene (S)	%						103	103	70-130			
Toluene-d8 (S)	%						98	96	70-130			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop-Flex onsite

Pace Project No.: 92478032

QC Batch:	542729	Analysis Method:	EPA 8260D Mod.
QC Batch Method:	EPA 8260D Mod.	Analysis Description:	8260D MSV SIM
		Laboratory:	Pace Analytical Services - Charlotte

Associated Lab Samples: 92478032001, 92478032002, 92478032003, 92478032004

METHOD BLANK: 2891387 Matrix: Water
Associated Lab Samples: 92478032001, 92478032002, 92478032003, 92478032004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	05/20/20 17:52	
1,2-Dichloroethane-d4 (S)	%	98	50-150	05/20/20 17:52	
Toluene-d8 (S)	%	106	50-150	05/20/20 17:52	

LABORATORY CONTROL SAMPLE: 2891388

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	19.3	97	70-130	
1,2-Dichloroethane-d4 (S)	%			106	50-150	
Toluene-d8 (S)	%			101	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2891389 2891390

Parameter	Units	92478023002 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	99.8	20	20	120	127	99	134	50-150	6	30	E
1,2-Dichloroethane-d4 (S)	%						95	95	50-150		30	
Toluene-d8 (S)	%						99	115	50-150		30	

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QUALITY CONTROL DATA

Project: Kop-Flex onsite

Pace Project No.: 92478032

QC Batch:	542730	Analysis Method:	EPA 8260D Mod.
QC Batch Method:	EPA 8260D Mod.	Analysis Description:	8260D MSV SIM
		Laboratory:	Pace Analytical Services - Charlotte

Associated Lab Samples: 92478032005, 92478032006, 92478032007, 92478032008, 92478032009, 92478032010, 92478032011, 92478032012

METHOD BLANK: 2891393 Matrix: Water

Associated Lab Samples: 92478032005, 92478032006, 92478032007, 92478032008, 92478032009, 92478032010, 92478032011, 92478032012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	05/20/20 18:12	
1,2-Dichloroethane-d4 (S)	%	107	50-150	05/20/20 18:12	
Toluene-d8 (S)	%	101	50-150	05/20/20 18:12	

LABORATORY CONTROL SAMPLE: 2891394

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	18.7	93	70-130	
1,2-Dichloroethane-d4 (S)	%			97	50-150	
Toluene-d8 (S)	%			98	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2891395 2891396

Parameter	Units	92478032005 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	18.7	17.9	92	88	50-150	4	30	
1,2-Dichloroethane-d4 (S)	%						101	104	50-150		30	
Toluene-d8 (S)	%						106	108	50-150		30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop-Flex onsite
Pace Project No.: 92478032

QC Batch:	542881	Analysis Method:	EPA 8260D Mod.
QC Batch Method:	EPA 8260D Mod.	Analysis Description:	8260D MSV SIM
		Laboratory:	Pace Analytical Services - Charlotte

Associated Lab Samples: 92478032013, 92478032014, 92478032015, 92478032016, 92478032017, 92478032018, 92478032019, 92478032020, 92478032021, 92478032023, 92478032024, 92478032025

METHOD BLANK: 2892029 Matrix: Water
Associated Lab Samples: 92478032013, 92478032014, 92478032015, 92478032016, 92478032017, 92478032018, 92478032019, 92478032020, 92478032021, 92478032023, 92478032024, 92478032025

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	05/21/20 12:13	
1,2-Dichloroethane-d4 (S)	%	94	50-150	05/21/20 12:13	
Toluene-d8 (S)	%	105	50-150	05/21/20 12:13	

LABORATORY CONTROL SAMPLE: 2892030

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)	%			92	50-150	
Toluene-d8 (S)	%			105	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2892586 2892587

Parameter	Units	92478032017 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	18.8	19.1	90	92	50-150	2	30	
1,2-Dichloroethane-d4 (S)	%						106	105	50-150		30	
Toluene-d8 (S)	%						111	110	50-150		30	

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QUALITY CONTROL DATA

Project: Kop-Flex onsite
Pace Project No.: 92478032

QC Batch: 542984	Analysis Method: EPA 8260D Mod.
QC Batch Method: EPA 8260D Mod.	Analysis Description: 8260D MSV SIM
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92478032022

METHOD BLANK: 2892634 Matrix: Water
Associated Lab Samples: 92478032022

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	05/22/20 00:43	
1,2-Dichloroethane-d4 (S)	%	101	50-150	05/22/20 00:43	
Toluene-d8 (S)	%	107	50-150	05/22/20 00:43	

LABORATORY CONTROL SAMPLE: 2892635

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	17.1	86	70-130	
1,2-Dichloroethane-d4 (S)	%			96	50-150	
Toluene-d8 (S)	%			102	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2892636 2892637

Parameter	Units	2892636		2892637		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92478230010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
1,4-Dioxane (p-Dioxane)	ug/L	ND	20	20	16.7	15.9	81	77	50-150	5	30		
1,2-Dichloroethane-d4 (S)	%						132	132	50-150		30		
Toluene-d8 (S)	%						123	122	50-150		30		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Kop-Flex onsite

Pace Project No.: 92478032

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.

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H1	Analysis conducted outside the EPA method holding time.
IH	This analyte exceeded secondary source verification criteria high for the initial calibration. The reported results should be considered an estimated value.
IK	The recalculated concentration of the calibration standard(s) did not meet method acceptance criteria; this result should be considered an estimated value.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
v1	The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.
v2	The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.
v3	The continuing calibration verification was below the method acceptance limit. Any detection for the analyte in the associated samples may have low bias.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Kop-Flex onsite

Pace Project No.: 92478032

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92478032001	MW-03	EPA 8260D	542927		
92478032002	MW-43	EPA 8260D	542927		
92478032003	MW-39	EPA 8260D	542927		
92478032004	MW-42	EPA 8260D	542927		
92478032005	MW-18	EPA 8260D	542927		
92478032006	MW-38R	EPA 8260D	542927		
92478032007	MW-40D	EPA 8260D	542927		
92478032008	MW-21D	EPA 8260D	542927		
92478032009	MW-5R	EPA 8260D	542927		
92478032010	MW-41D	EPA 8260D	542927		
92478032011	MW-1D	EPA 8260D	542927		
92478032012	MW-22D	EPA 8260D	542927		
92478032013	MW-04	EPA 8260D	543382		
92478032014	MW-20	EPA 8260D	543215		
92478032015	MW-09	EPA 8260D	543215		
92478032016	MW-23D	EPA 8260D	543215		
92478032017	MW-27D	EPA 8260D	543215		
92478032018	Trip Blank A	EPA 8260D	543215		
92478032019	Trip Blank B	EPA 8260D	543215		
92478032020	MW-44	EPA 8260D	543215		
92478032021	MW-16D	EPA 8260D	543215		
92478032022	Dup-051320	EPA 8260D	543671		
92478032023	MW-16	EPA 8260D	543671		
92478032024	MW-01	EPA 8260D	543215		
92478032025	Trip Blank C	EPA 8260D	543215		
92478032001	MW-03	EPA 8260D Mod.	542729		
92478032002	MW-43	EPA 8260D Mod.	542729		
92478032003	MW-39	EPA 8260D Mod.	542729		
92478032004	MW-42	EPA 8260D Mod.	542729		
92478032005	MW-18	EPA 8260D Mod.	542730		
92478032006	MW-38R	EPA 8260D Mod.	542730		
92478032007	MW-40D	EPA 8260D Mod.	542730		
92478032008	MW-21D	EPA 8260D Mod.	542730		
92478032009	MW-5R	EPA 8260D Mod.	542730		
92478032010	MW-41D	EPA 8260D Mod.	542730		
92478032011	MW-1D	EPA 8260D Mod.	542730		
92478032012	MW-22D	EPA 8260D Mod.	542730		
92478032013	MW-04	EPA 8260D Mod.	542881		
92478032014	MW-20	EPA 8260D Mod.	542881		
92478032015	MW-09	EPA 8260D Mod.	542881		
92478032016	MW-23D	EPA 8260D Mod.	542881		
92478032017	MW-27D	EPA 8260D Mod.	542881		
92478032018	Trip Blank A	EPA 8260D Mod.	542881		
92478032019	Trip Blank B	EPA 8260D Mod.	542881		
92478032020	MW-44	EPA 8260D Mod.	542881		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Kop-Flex onsite
Pace Project No.: 92478032

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92478032021	MW-16D	EPA 8260D Mod.	542881		
92478032022	Dup-051320	EPA 8260D Mod.	542984		
92478032023	MW-16	EPA 8260D Mod.	542881		
92478032024	MW-01	EPA 8260D Mod.	542881		
92478032025	Trip Blank C	EPA 8260D Mod.	542881		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville

Sample Condition Upon Receipt

Client Name:

WSP

Project #:

WO#: 92478032



Courier: Commercial Fed Ex UPS USPS Client Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: SK 5-18-20

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Yes No N/A

Thermometer:

IR Gun ID: 92T061

Type of Ice: Wet Blue None

Cooler Temp (°C): 5.8, 6.9, 10.7 Correction Factor: Add/Subtract (°C) +0.1

Temp should be above freezing to 6°C

Cooler Temp Corrected (°C): 5.9, 7.0, 10.8

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)?

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

Yes No

			Comments/Discrepancy:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.	
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Includes Date/Time/ID/Analysis Matrix: WTI			
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.	
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Ice melted

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____



*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# : 92478032

PM: PTE

Due Date: 05/26/20

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																													
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

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

Project #

WO# : 92478032

PM: PTE

Due Date: 05/26/20

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	/	/	/	/	/	/	/	/	/	/	/	/	/	/	5	/	/	/	/	/	/	/	/	/	/	/	/	/
2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	6	/	/	/	/	/	/	/	/	/	/	/	/	/
3	/	/	/	/	/	/	/	/	/	/	/	/	/	/	6	/	/	/	/	/	/	/	/	/	/	/	/	/
4	/	/	/	/	/	/	/	/	/	/	/	/	/	/	5	/	/	/	/	/	/	/	/	/	/	/	/	/
5	/	/	/	/	/	/	/	/	/	/	/	/	/	/	6	/	/	/	/	/	/	/	/	/	/	/	/	/
6	/	/	/	/	/	/	/	/	/	/	/	/	/	/	4	/	/	/	/	/	/	/	/	/	/	/	/	/
7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	4	/	/	/	/	/	/	/	/	/	/	/	/	/
8	/	/	/	/	/	/	/	/	/	/	/	/	/	/	6	/	/	/	/	/	/	/	/	/	/	/	/	/
9	/	/	/	/	/	/	/	/	/	/	/	/	/	/	6	/	/	/	/	/	/	/	/	/	/	/	/	/
10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	5	/	/	/	/	/	/	/	/	/	/	/	/	/
11	/	/	/	/	/	/	/	/	/	/	/	/	/	/	5	/	/	/	/	/	/	/	/	/	/	/	/	/
12	/	/	/	/	/	/	/	/	/	/	/	/	/	/	6	/	/	/	/	/	/	/	/	/	/	/	/	/

4

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.

OSAE

CHAIN-OF-CUSTODY RECORD

WSP USA Office Address
13530 Dulles Technology Dr Ste 300 Herndon VA

Project Name
KOPPEX - onsite

Project Location
THOMAS, MD

Project Number & Task
31401545.01013

Sampler(s) Name(s)
Molly Long

Sampler(s) Signature(s)
MLL

Elliot Markiewicz

WSP USA Contact Name
Eric Johnson

WSP USA Contact E-mail
Eric.Johnson@wsp.com

WSP USA Contact Phone
(703)-709-6500

Sampler(s) Signature(s)
MLL

Sample Identification	Matrix	Collection Start		Collection Stop		Number of Containers
		Date	Time	Date	Time	

MW-03 AQ 05/12/20 1145 G X X

MW-43 AQ 05/12/20 1205 G X X

MW-39 AQ 05/12/20 1225 G X X

MW-42 AQ 05/12/20 1235 G X X

MW-18 AQ 05/12/20 1250 G X X

MW-38R AQ 05/12/20 1405 S X X

MW-40D AQ 05/12/20 1420 G X X

MW-21D AQ 05/12/20 1515 G X X

MW-5R AQ 05/12/20 1555 G X X

MW-41D AQ 05/12/20 1640 G X X

MW-1D AQ 05/12/20 1705 G X X

MW-22D AQ 05/12/20 1720 G X X

MW-04 AQ 05/12/20 1810 G X X

MW-20 AQ 05/12/20 1830 G X X

MW-09 AQ 05/12/20 1845 G X X

Relinquished By (Signature)
MLL

Relinquished By (Signature)
SKOPER

Requested Analyses & Preservatives

VOCs 8260B

1,4-dioxane 8260B SIMS

No. 010011

WSP

Laboratory Name & Location
Free, Hendersonville, NC

Laboratory Project Manager
Taylor Ezell

Requested Round-Time
 Standard
 24 HR
 48 HR
 72 HR
 HR

Sample Comments
92978032

*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)

CHAIN-OF-CUSTODY RECORD

Requested Analyses & Preservatives

WSP USA Office Address
13530 Dulles Technology Dr. #300 Herndon, VA

Project Name
Keeflex

Project Location
MD

Project Number & Task
31401545.01013

Sampler(s) Name(s)
Molly Long
Elliott Muthykrueger

WSP USA Contact Name
Eric Johnson

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

WSP USA Contact Phone
703 709 6500

Sampler(s) Signature(s)
[Signature]

Matrix

Collection Start Date

Collection Stop Time

Number of Containers

Requested Analyses & Preservatives

Requested Start-Around-Time

Laboratory Name & Location

Laboratory Project Manager

Requested Start-Around-Time

Standard

48 HR

72 HR

Sample Comments

Sample Identification

Matrix

Collection Start Date

Collection Stop Time

Number of Containers

Requested Analyses & Preservatives

Requested Start-Around-Time

Laboratory Name & Location

Laboratory Project Manager

No. 010013

WSP

Laboratory Name & Location
Pace, Hutersville, MD

Laboratory Project Manager
Taylor Ezell

Requested Start-Around-Time

Standard

48 HR

72 HR

Sample Comments

Sample Identification

Matrix

Collection Start Date

Collection Stop Time

Number of Containers

Requested Analyses & Preservatives

Requested Start-Around-Time

Laboratory Name & Location

Laboratory Project Manager

Requested Start-Around-Time

Standard

48 HR

72 HR

Sample Comments

Sample Identification

Matrix

Collection Start Date

Collection Stop Time

Number of Containers

Requested Analyses & Preservatives

Requested Start-Around-Time

Laboratory Name & Location

Relinquished By (Signature)
[Signature]

Date
5/15/20

Date
5/15/20

Time
1:00

Received By (Signature)
[Signature]

Date
5/18/20

Time
9:12

Shipment Method

Number of Packages

Tracking Number(s)

Custody Seal Number(s)

Relinquished By (Signature)

Date

Time

Received By (Signature)

Date

Time

Shipment Method

Number of Packages

Tracking Number(s)

Custody Seal Number(s)

Relinquished By (Signature)

Date

Time

Received By (Signature)

Date

Time

Shipment Method

Number of Packages

Tracking Number(s)

Custody Seal Number(s)

Relinquished By (Signature)

Date

Time

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)

May 27, 2020

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

RE: Project: Kop-Flex Recovery Wells onsite
Pace Project No.: 92478023

Dear Eric Johnson:

Enclosed are the analytical results for sample(s) received by the laboratory on May 18, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

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
Pam Robertson, WSP USA



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Kop-Flex Recovery Wells onsite

Pace Project No.: 92478023

Pace Analytical Services Charlotte

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Kop-Flex Recovery Wells onsite
Pace Project No.: 92478023

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92478023001	RW-1S	Water	05/13/20 11:30	05/18/20 09:12
92478023002	RW-2S	Water	05/12/20 14:40	05/18/20 09:12
92478023003	RW-3S	Water	05/12/20 14:55	05/18/20 09:12
92478023004	RW-1D	Water	05/12/20 15:30	05/18/20 09:12
92478023005	RW-2D	Water	05/12/20 16:55	05/18/20 09:12

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Kop-Flex Recovery Wells onsite

Pace Project No.: 92478023

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92478023001	RW-1S	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478023002	RW-2S	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478023003	RW-3S	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478023004	RW-1D	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92478023005	RW-2D	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C

PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop-Flex Recovery Wells onsite

Pace Project No.: 92478023

Sample: RW-1S	Lab ID: 92478023001	Collected: 05/13/20 11:30	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	62.5	2.5		05/26/20 18:28	67-64-1	
Benzene	ND	ug/L	2.5	2.5		05/26/20 18:28	71-43-2	
Bromobenzene	ND	ug/L	2.5	2.5		05/26/20 18:28	108-86-1	
Bromochloromethane	ND	ug/L	2.5	2.5		05/26/20 18:28	74-97-5	
Bromodichloromethane	ND	ug/L	2.5	2.5		05/26/20 18:28	75-27-4	
Bromoform	ND	ug/L	2.5	2.5		05/26/20 18:28	75-25-2	
Bromomethane	ND	ug/L	5.0	2.5		05/26/20 18:28	74-83-9	IH
2-Butanone (MEK)	ND	ug/L	12.5	2.5		05/26/20 18:28	78-93-3	
Carbon tetrachloride	ND	ug/L	2.5	2.5		05/26/20 18:28	56-23-5	
Chlorobenzene	ND	ug/L	2.5	2.5		05/26/20 18:28	108-90-7	
Chloroethane	16.3	ug/L	2.5	2.5		05/26/20 18:28	75-00-3	
Chloroform	ND	ug/L	12.5	2.5		05/26/20 18:28	67-66-3	
Chloromethane	ND	ug/L	2.5	2.5		05/26/20 18:28	74-87-3	
2-Chlorotoluene	ND	ug/L	2.5	2.5		05/26/20 18:28	95-49-8	
4-Chlorotoluene	ND	ug/L	2.5	2.5		05/26/20 18:28	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	12.5	2.5		05/26/20 18:28	96-12-8	
Dibromochloromethane	ND	ug/L	2.5	2.5		05/26/20 18:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.5	2.5		05/26/20 18:28	106-93-4	
Dibromomethane	ND	ug/L	2.5	2.5		05/26/20 18:28	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.5	2.5		05/26/20 18:28	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.5	2.5		05/26/20 18:28	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.5	2.5		05/26/20 18:28	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.5	2.5		05/26/20 18:28	75-71-8	
1,1-Dichloroethane	98.2	ug/L	2.5	2.5		05/26/20 18:28	75-34-3	
1,2-Dichloroethane	3.0	ug/L	2.5	2.5		05/26/20 18:28	107-06-2	
1,1-Dichloroethene	447	ug/L	2.5	2.5		05/26/20 18:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2.5	2.5		05/26/20 18:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.5	2.5		05/26/20 18:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.5	2.5		05/26/20 18:28	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.5	2.5		05/26/20 18:28	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.5	2.5		05/26/20 18:28	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.5	2.5		05/26/20 18:28	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.5	2.5		05/26/20 18:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.5	2.5		05/26/20 18:28	10061-02-6	
Diisopropyl ether	ND	ug/L	2.5	2.5		05/26/20 18:28	108-20-3	
Ethylbenzene	ND	ug/L	2.5	2.5		05/26/20 18:28	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.5	2.5		05/26/20 18:28	87-68-3	IH
2-Hexanone	ND	ug/L	12.5	2.5		05/26/20 18:28	591-78-6	v1
p-Isopropyltoluene	ND	ug/L	2.5	2.5		05/26/20 18:28	99-87-6	
Methylene Chloride	ND	ug/L	12.5	2.5		05/26/20 18:28	75-09-2	v1
4-Methyl-2-pentanone (MIBK)	ND	ug/L	12.5	2.5		05/26/20 18:28	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.5	2.5		05/26/20 18:28	1634-04-4	
Naphthalene	ND	ug/L	2.5	2.5		05/26/20 18:28	91-20-3	
Styrene	ND	ug/L	2.5	2.5		05/26/20 18:28	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.5	2.5		05/26/20 18:28	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.5	2.5		05/26/20 18:28	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop-Flex Recovery Wells onsite
Pace Project No.: 92478023

Sample: RW-1S		Lab ID: 92478023001	Collected: 05/13/20 11:30	Received: 05/18/20 09:12	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Tetrachloroethene	ND	ug/L	2.5	2.5		05/26/20 18:28	127-18-4	
Toluene	ND	ug/L	2.5	2.5		05/26/20 18:28	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.5	2.5		05/26/20 18:28	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.5	2.5		05/26/20 18:28	120-82-1	
1,1,1-Trichloroethane	95.7	ug/L	2.5	2.5		05/26/20 18:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.5	2.5		05/26/20 18:28	79-00-5	
Trichloroethene	3.2	ug/L	2.5	2.5		05/26/20 18:28	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.5	2.5		05/26/20 18:28	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	2.5		05/26/20 18:28	96-18-4	
Vinyl acetate	ND	ug/L	5.0	2.5		05/26/20 18:28	108-05-4	v1
Vinyl chloride	3.6	ug/L	2.5	2.5		05/26/20 18:28	75-01-4	
Xylene (Total)	ND	ug/L	2.5	2.5		05/26/20 18:28	1330-20-7	
m&p-Xylene	ND	ug/L	5.0	2.5		05/26/20 18:28	179601-23-1	
o-Xylene	ND	ug/L	2.5	2.5		05/26/20 18:28	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	2.5		05/26/20 18:28	460-00-4	
1,2-Dichloroethane-d4 (S)	118	%	70-130	2.5		05/26/20 18:28	17060-07-0	
Toluene-d8 (S)	102	%	70-130	2.5		05/26/20 18:28	2037-26-5	
8260D MSV SIM		Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte						
1,4-Dioxane (p-Dioxane)	298	ug/L	10.0	5		05/19/20 03:47	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	111	%	50-150	5		05/19/20 03:47	17060-07-0	
Toluene-d8 (S)	94	%	50-150	5		05/19/20 03:47	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop-Flex Recovery Wells onsite

Pace Project No.: 92478023

Sample: RW-2S	Lab ID: 92478023002	Collected: 05/12/20 14:40	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	50.0	2		05/26/20 17:31	67-64-1	
Benzene	ND	ug/L	2.0	2		05/26/20 17:31	71-43-2	
Bromobenzene	ND	ug/L	2.0	2		05/26/20 17:31	108-86-1	
Bromochloromethane	ND	ug/L	2.0	2		05/26/20 17:31	74-97-5	
Bromodichloromethane	ND	ug/L	2.0	2		05/26/20 17:31	75-27-4	
Bromoform	ND	ug/L	2.0	2		05/26/20 17:31	75-25-2	
Bromomethane	ND	ug/L	4.0	2		05/26/20 17:31	74-83-9	IH
2-Butanone (MEK)	ND	ug/L	10.0	2		05/26/20 17:31	78-93-3	
Carbon tetrachloride	ND	ug/L	2.0	2		05/26/20 17:31	56-23-5	
Chlorobenzene	ND	ug/L	2.0	2		05/26/20 17:31	108-90-7	
Chloroethane	ND	ug/L	2.0	2		05/26/20 17:31	75-00-3	
Chloroform	ND	ug/L	10.0	2		05/26/20 17:31	67-66-3	
Chloromethane	ND	ug/L	2.0	2		05/26/20 17:31	74-87-3	
2-Chlorotoluene	ND	ug/L	2.0	2		05/26/20 17:31	95-49-8	
4-Chlorotoluene	ND	ug/L	2.0	2		05/26/20 17:31	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	10.0	2		05/26/20 17:31	96-12-8	
Dibromochloromethane	ND	ug/L	2.0	2		05/26/20 17:31	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	2		05/26/20 17:31	106-93-4	
Dibromomethane	ND	ug/L	2.0	2		05/26/20 17:31	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.0	2		05/26/20 17:31	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	2		05/26/20 17:31	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	2		05/26/20 17:31	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.0	2		05/26/20 17:31	75-71-8	
1,1-Dichloroethane	24.9	ug/L	2.0	2		05/26/20 17:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.0	2		05/26/20 17:31	107-06-2	
1,1-Dichloroethene	140	ug/L	2.0	2		05/26/20 17:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2.0	2		05/26/20 17:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.0	2		05/26/20 17:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	2		05/26/20 17:31	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.0	2		05/26/20 17:31	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.0	2		05/26/20 17:31	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.0	2		05/26/20 17:31	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.0	2		05/26/20 17:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	2		05/26/20 17:31	10061-02-6	
Diisopropyl ether	ND	ug/L	2.0	2		05/26/20 17:31	108-20-3	
Ethylbenzene	ND	ug/L	2.0	2		05/26/20 17:31	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	2		05/26/20 17:31	87-68-3	IH
2-Hexanone	ND	ug/L	10.0	2		05/26/20 17:31	591-78-6	v1
p-Isopropyltoluene	ND	ug/L	2.0	2		05/26/20 17:31	99-87-6	
Methylene Chloride	ND	ug/L	10.0	2		05/26/20 17:31	75-09-2	v1
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	2		05/26/20 17:31	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.0	2		05/26/20 17:31	1634-04-4	
Naphthalene	ND	ug/L	2.0	2		05/26/20 17:31	91-20-3	
Styrene	ND	ug/L	2.0	2		05/26/20 17:31	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.0	2		05/26/20 17:31	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	2		05/26/20 17:31	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop-Flex Recovery Wells onsite
Pace Project No.: 92478023

Sample: RW-2S	Lab ID: 92478023002	Collected: 05/12/20 14:40	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Tetrachloroethene	ND	ug/L	2.0	2		05/26/20 17:31	127-18-4	
Toluene	ND	ug/L	2.0	2		05/26/20 17:31	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	2		05/26/20 17:31	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	2		05/26/20 17:31	120-82-1	
1,1,1-Trichloroethane	232	ug/L	2.0	2		05/26/20 17:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	2		05/26/20 17:31	79-00-5	
Trichloroethene	ND	ug/L	2.0	2		05/26/20 17:31	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	2		05/26/20 17:31	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.0	2		05/26/20 17:31	96-18-4	
Vinyl acetate	ND	ug/L	4.0	2		05/26/20 17:31	108-05-4	v1
Vinyl chloride	ND	ug/L	2.0	2		05/26/20 17:31	75-01-4	
Xylene (Total)	ND	ug/L	2.0	2		05/26/20 17:31	1330-20-7	
m&p-Xylene	ND	ug/L	4.0	2		05/26/20 17:31	179601-23-1	
o-Xylene	ND	ug/L	2.0	2		05/26/20 17:31	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	104	%	70-130	2		05/26/20 17:31	460-00-4	
1,2-Dichloroethane-d4 (S)	118	%	70-130	2		05/26/20 17:31	17060-07-0	
Toluene-d8 (S)	101	%	70-130	2		05/26/20 17:31	2037-26-5	
8260D MSV SIM		Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte						
1,4-Dioxane (p-Dioxane)	99.8	ug/L	2.0	1		05/20/20 18:32	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	115	%	50-150	1		05/20/20 18:32	17060-07-0	
Toluene-d8 (S)	95	%	50-150	1		05/20/20 18:32	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex Recovery Wells onsite

Pace Project No.: 92478023

Sample: RW-3S	Lab ID: 92478023003	Collected: 05/12/20 14:55	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D						
		Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/24/20 04:31	67-64-1	
Benzene	ND	ug/L	1.0	1		05/24/20 04:31	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/24/20 04:31	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/24/20 04:31	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/24/20 04:31	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/24/20 04:31	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/24/20 04:31	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		05/24/20 04:31	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/24/20 04:31	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/24/20 04:31	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/24/20 04:31	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/24/20 04:31	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/24/20 04:31	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 04:31	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/24/20 04:31	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/24/20 04:31	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/24/20 04:31	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/24/20 04:31	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/24/20 04:31	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 04:31	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 04:31	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/24/20 04:31	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/24/20 04:31	75-71-8	
1,1-Dichloroethane	3.4	ug/L	1.0	1		05/24/20 04:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		05/24/20 04:31	107-06-2	
1,1-Dichloroethene	5.9	ug/L	1.0	1		05/24/20 04:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 04:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/24/20 04:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 04:31	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/24/20 04:31	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/24/20 04:31	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/24/20 04:31	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 04:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/24/20 04:31	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/24/20 04:31	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/24/20 04:31	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/24/20 04:31	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		05/24/20 04:31	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		05/24/20 04:31	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/24/20 04:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/24/20 04:31	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/24/20 04:31	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/24/20 04:31	91-20-3	
Styrene	ND	ug/L	1.0	1		05/24/20 04:31	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 04:31	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/24/20 04:31	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex Recovery Wells onsite
Pace Project No.: 92478023

Sample: RW-3S	Lab ID: 92478023003	Collected: 05/12/20 14:55	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Tetrachloroethene	ND	ug/L	1.0	1		05/24/20 04:31	127-18-4	
Toluene	ND	ug/L	1.0	1		05/24/20 04:31	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 04:31	87-61-6	IH
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/24/20 04:31	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		05/24/20 04:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/24/20 04:31	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/24/20 04:31	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/24/20 04:31	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/24/20 04:31	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/24/20 04:31	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		05/24/20 04:31	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/24/20 04:31	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/24/20 04:31	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/24/20 04:31	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		05/24/20 04:31	460-00-4	
1,2-Dichloroethane-d4 (S)	116	%	70-130	1		05/24/20 04:31	17060-07-0	
Toluene-d8 (S)	104	%	70-130	1		05/24/20 04:31	2037-26-5	
8260D MSV SIM		Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte						
1,4-Dioxane (p-Dioxane)	17.2	ug/L	2.0	1		05/19/20 02:47	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	50-150	1		05/19/20 02:47	17060-07-0	
Toluene-d8 (S)	100	%	50-150	1		05/19/20 02:47	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex Recovery Wells onsite
Pace Project No.: 92478023

Sample: RW-1D	Lab ID: 92478023004	Collected: 05/12/20 15:30	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	50.0	2		05/26/20 17:50	67-64-1	
Benzene	ND	ug/L	2.0	2		05/26/20 17:50	71-43-2	
Bromobenzene	ND	ug/L	2.0	2		05/26/20 17:50	108-86-1	
Bromochloromethane	ND	ug/L	2.0	2		05/26/20 17:50	74-97-5	
Bromodichloromethane	ND	ug/L	2.0	2		05/26/20 17:50	75-27-4	
Bromoform	ND	ug/L	2.0	2		05/26/20 17:50	75-25-2	
Bromomethane	ND	ug/L	4.0	2		05/26/20 17:50	74-83-9	IH
2-Butanone (MEK)	ND	ug/L	10.0	2		05/26/20 17:50	78-93-3	
Carbon tetrachloride	ND	ug/L	2.0	2		05/26/20 17:50	56-23-5	
Chlorobenzene	ND	ug/L	2.0	2		05/26/20 17:50	108-90-7	
Chloroethane	3.9	ug/L	2.0	2		05/26/20 17:50	75-00-3	
Chloroform	ND	ug/L	10.0	2		05/26/20 17:50	67-66-3	
Chloromethane	ND	ug/L	2.0	2		05/26/20 17:50	74-87-3	
2-Chlorotoluene	ND	ug/L	2.0	2		05/26/20 17:50	95-49-8	
4-Chlorotoluene	ND	ug/L	2.0	2		05/26/20 17:50	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	10.0	2		05/26/20 17:50	96-12-8	
Dibromochloromethane	ND	ug/L	2.0	2		05/26/20 17:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	2		05/26/20 17:50	106-93-4	
Dibromomethane	ND	ug/L	2.0	2		05/26/20 17:50	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.0	2		05/26/20 17:50	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	2		05/26/20 17:50	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	2		05/26/20 17:50	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.0	2		05/26/20 17:50	75-71-8	
1,1-Dichloroethane	48.4	ug/L	2.0	2		05/26/20 17:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.0	2		05/26/20 17:50	107-06-2	
1,1-Dichloroethene	202	ug/L	2.0	2		05/26/20 17:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2.0	2		05/26/20 17:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.0	2		05/26/20 17:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	2		05/26/20 17:50	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.0	2		05/26/20 17:50	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.0	2		05/26/20 17:50	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.0	2		05/26/20 17:50	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.0	2		05/26/20 17:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	2		05/26/20 17:50	10061-02-6	
Diisopropyl ether	ND	ug/L	2.0	2		05/26/20 17:50	108-20-3	
Ethylbenzene	ND	ug/L	2.0	2		05/26/20 17:50	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	2		05/26/20 17:50	87-68-3	IH
2-Hexanone	ND	ug/L	10.0	2		05/26/20 17:50	591-78-6	v1
p-Isopropyltoluene	ND	ug/L	2.0	2		05/26/20 17:50	99-87-6	
Methylene Chloride	ND	ug/L	10.0	2		05/26/20 17:50	75-09-2	v1
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	2		05/26/20 17:50	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.0	2		05/26/20 17:50	1634-04-4	
Naphthalene	ND	ug/L	2.0	2		05/26/20 17:50	91-20-3	
Styrene	ND	ug/L	2.0	2		05/26/20 17:50	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.0	2		05/26/20 17:50	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	2		05/26/20 17:50	79-34-5	

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ANALYTICAL RESULTS

Project: Kop-Flex Recovery Wells onsite
Pace Project No.: 92478023

Sample: RW-1D	Lab ID: 92478023004	Collected: 05/12/20 15:30	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Tetrachloroethene	ND	ug/L	2.0	2		05/26/20 17:50	127-18-4	
Toluene	ND	ug/L	2.0	2		05/26/20 17:50	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	2		05/26/20 17:50	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	2		05/26/20 17:50	120-82-1	
1,1,1-Trichloroethane	5.1	ug/L	2.0	2		05/26/20 17:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	2		05/26/20 17:50	79-00-5	
Trichloroethene	ND	ug/L	2.0	2		05/26/20 17:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	2		05/26/20 17:50	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.0	2		05/26/20 17:50	96-18-4	
Vinyl acetate	ND	ug/L	4.0	2		05/26/20 17:50	108-05-4	v1
Vinyl chloride	ND	ug/L	2.0	2		05/26/20 17:50	75-01-4	
Xylene (Total)	ND	ug/L	2.0	2		05/26/20 17:50	1330-20-7	
m&p-Xylene	ND	ug/L	4.0	2		05/26/20 17:50	179601-23-1	
o-Xylene	ND	ug/L	2.0	2		05/26/20 17:50	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	2		05/26/20 17:50	460-00-4	
1,2-Dichloroethane-d4 (S)	115	%	70-130	2		05/26/20 17:50	17060-07-0	
Toluene-d8 (S)	102	%	70-130	2		05/26/20 17:50	2037-26-5	
8260D MSV SIM		Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte						
1,4-Dioxane (p-Dioxane)	81.8	ug/L	2.0	1		05/19/20 03:07	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%	50-150	1		05/19/20 03:07	17060-07-0	
Toluene-d8 (S)	107	%	50-150	1		05/19/20 03:07	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop-Flex Recovery Wells onsite
Pace Project No.: 92478023

Sample: RW-2D	Lab ID: 92478023005	Collected: 05/12/20 16:55	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		05/26/20 16:54	67-64-1	
Benzene	ND	ug/L	1.0	1		05/26/20 16:54	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		05/26/20 16:54	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		05/26/20 16:54	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		05/26/20 16:54	75-27-4	
Bromoform	ND	ug/L	1.0	1		05/26/20 16:54	75-25-2	
Bromomethane	ND	ug/L	2.0	1		05/26/20 16:54	74-83-9	IH
2-Butanone (MEK)	ND	ug/L	5.0	1		05/26/20 16:54	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		05/26/20 16:54	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		05/26/20 16:54	108-90-7	
Chloroethane	ND	ug/L	1.0	1		05/26/20 16:54	75-00-3	
Chloroform	ND	ug/L	5.0	1		05/26/20 16:54	67-66-3	
Chloromethane	ND	ug/L	1.0	1		05/26/20 16:54	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 16:54	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		05/26/20 16:54	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		05/26/20 16:54	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		05/26/20 16:54	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		05/26/20 16:54	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		05/26/20 16:54	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 16:54	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 16:54	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		05/26/20 16:54	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		05/26/20 16:54	75-71-8	
1,1-Dichloroethane	21.4	ug/L	1.0	1		05/26/20 16:54	75-34-3	
1,2-Dichloroethane	1.6	ug/L	1.0	1		05/26/20 16:54	107-06-2	
1,1-Dichloroethene	145	ug/L	1.0	1		05/26/20 16:54	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 16:54	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		05/26/20 16:54	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 16:54	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		05/26/20 16:54	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		05/26/20 16:54	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		05/26/20 16:54	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 16:54	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		05/26/20 16:54	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		05/26/20 16:54	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		05/26/20 16:54	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		05/26/20 16:54	87-68-3	IH
2-Hexanone	ND	ug/L	5.0	1		05/26/20 16:54	591-78-6	v1
p-Isopropyltoluene	ND	ug/L	1.0	1		05/26/20 16:54	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		05/26/20 16:54	75-09-2	v1
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		05/26/20 16:54	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		05/26/20 16:54	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		05/26/20 16:54	91-20-3	
Styrene	ND	ug/L	1.0	1		05/26/20 16:54	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 16:54	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		05/26/20 16:54	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop-Flex Recovery Wells onsite

Pace Project No.: 92478023

Sample: RW-2D	Lab ID: 92478023005	Collected: 05/12/20 16:55	Received: 05/18/20 09:12	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Tetrachloroethene	ND	ug/L	1.0	1		05/26/20 16:54	127-18-4	
Toluene	ND	ug/L	1.0	1		05/26/20 16:54	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 16:54	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		05/26/20 16:54	120-82-1	
1,1,1-Trichloroethane	5.3	ug/L	1.0	1		05/26/20 16:54	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		05/26/20 16:54	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		05/26/20 16:54	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		05/26/20 16:54	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		05/26/20 16:54	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		05/26/20 16:54	108-05-4	v1
Vinyl chloride	ND	ug/L	1.0	1		05/26/20 16:54	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		05/26/20 16:54	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		05/26/20 16:54	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		05/26/20 16:54	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		05/26/20 16:54	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	70-130	1		05/26/20 16:54	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		05/26/20 16:54	2037-26-5	
8260D MSV SIM		Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte						
1,4-Dioxane (p-Dioxane)	78.2	ug/L	2.0	1		05/19/20 03:27	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	50-150	1		05/19/20 03:27	17060-07-0	
Toluene-d8 (S)	94	%	50-150	1		05/19/20 03:27	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop-Flex Recovery Wells onsite
Pace Project No.: 92478023

QC Batch: 542927	Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D	Analysis Description: 8260D MSV Low Level
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92478023003

METHOD BLANK: 2892230 Matrix: Water
Associated Lab Samples: 92478023003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/24/20 00:00	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/24/20 00:00	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/24/20 00:00	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/24/20 00:00	
1,1-Dichloroethane	ug/L	ND	1.0	05/24/20 00:00	
1,1-Dichloroethene	ug/L	ND	1.0	05/24/20 00:00	
1,1-Dichloropropene	ug/L	ND	1.0	05/24/20 00:00	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/24/20 00:00	IH
1,2,3-Trichloropropane	ug/L	ND	1.0	05/24/20 00:00	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/24/20 00:00	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	05/24/20 00:00	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/24/20 00:00	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/24/20 00:00	
1,2-Dichloroethane	ug/L	ND	1.0	05/24/20 00:00	
1,2-Dichloropropane	ug/L	ND	1.0	05/24/20 00:00	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/24/20 00:00	
1,3-Dichloropropane	ug/L	ND	1.0	05/24/20 00:00	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/24/20 00:00	
2,2-Dichloropropane	ug/L	ND	1.0	05/24/20 00:00	
2-Butanone (MEK)	ug/L	ND	5.0	05/24/20 00:00	
2-Chlorotoluene	ug/L	ND	1.0	05/24/20 00:00	
2-Hexanone	ug/L	ND	5.0	05/24/20 00:00	
4-Chlorotoluene	ug/L	ND	1.0	05/24/20 00:00	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/24/20 00:00	
Acetone	ug/L	ND	25.0	05/24/20 00:00	
Benzene	ug/L	ND	1.0	05/24/20 00:00	
Bromobenzene	ug/L	ND	1.0	05/24/20 00:00	
Bromochloromethane	ug/L	ND	1.0	05/24/20 00:00	
Bromodichloromethane	ug/L	ND	1.0	05/24/20 00:00	
Bromoform	ug/L	ND	1.0	05/24/20 00:00	
Bromomethane	ug/L	ND	2.0	05/24/20 00:00	v2
Carbon tetrachloride	ug/L	ND	1.0	05/24/20 00:00	
Chlorobenzene	ug/L	ND	1.0	05/24/20 00:00	
Chloroethane	ug/L	ND	1.0	05/24/20 00:00	
Chloroform	ug/L	ND	5.0	05/24/20 00:00	
Chloromethane	ug/L	ND	1.0	05/24/20 00:00	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/24/20 00:00	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/24/20 00:00	
Dibromochloromethane	ug/L	ND	1.0	05/24/20 00:00	
Dibromomethane	ug/L	ND	1.0	05/24/20 00:00	

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QUALITY CONTROL DATA

Project: Kop-Flex Recovery Wells onsite
Pace Project No.: 92478023

METHOD BLANK: 2892230 Matrix: Water
Associated Lab Samples: 92478023003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	05/24/20 00:00	
Diisopropyl ether	ug/L	ND	1.0	05/24/20 00:00	
Ethylbenzene	ug/L	ND	1.0	05/24/20 00:00	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	05/24/20 00:00	
m&p-Xylene	ug/L	ND	2.0	05/24/20 00:00	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/24/20 00:00	
Methylene Chloride	ug/L	ND	5.0	05/24/20 00:00	
Naphthalene	ug/L	ND	1.0	05/24/20 00:00	
o-Xylene	ug/L	ND	1.0	05/24/20 00:00	
p-Isopropyltoluene	ug/L	ND	1.0	05/24/20 00:00	
Styrene	ug/L	ND	1.0	05/24/20 00:00	
Tetrachloroethene	ug/L	ND	1.0	05/24/20 00:00	
Toluene	ug/L	ND	1.0	05/24/20 00:00	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/24/20 00:00	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/24/20 00:00	
Trichloroethene	ug/L	ND	1.0	05/24/20 00:00	
Trichlorofluoromethane	ug/L	ND	1.0	05/24/20 00:00	
Vinyl acetate	ug/L	ND	2.0	05/24/20 00:00	
Vinyl chloride	ug/L	ND	1.0	05/24/20 00:00	
Xylene (Total)	ug/L	ND	1.0	05/24/20 00:00	
1,2-Dichloroethane-d4 (S)	%	108	70-130	05/24/20 00:00	
4-Bromofluorobenzene (S)	%	99	70-130	05/24/20 00:00	
Toluene-d8 (S)	%	102	70-130	05/24/20 00:00	

LABORATORY CONTROL SAMPLE: 2892231

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	50.5	101	70-130	
1,1,1-Trichloroethane	ug/L	50	54.7	109	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	51.4	103	70-130	
1,1,2-Trichloroethane	ug/L	50	50.9	102	70-130	
1,1-Dichloroethane	ug/L	50	50.3	101	70-130	
1,1-Dichloroethene	ug/L	50	55.0	110	70-130	
1,1-Dichloropropene	ug/L	50	52.5	105	70-130	
1,2,3-Trichlorobenzene	ug/L	50	60.5	121	70-130 IH	
1,2,3-Trichloropropane	ug/L	50	47.6	95	70-130	
1,2,4-Trichlorobenzene	ug/L	50	50.4	101	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	52.0	104	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	52.6	105	70-130	
1,2-Dichlorobenzene	ug/L	50	51.0	102	70-130	
1,2-Dichloroethane	ug/L	50	52.4	105	70-130	
1,2-Dichloropropane	ug/L	50	50.5	101	70-130	
1,3-Dichlorobenzene	ug/L	50	50.2	100	70-130	
1,3-Dichloropropane	ug/L	50	50.7	101	70-131	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop-Flex Recovery Wells onsite
Pace Project No.: 92478023

LABORATORY CONTROL SAMPLE: 2892231

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	49.3	99	70-130	
2,2-Dichloropropane	ug/L	50	44.2	88	69-130	
2-Butanone (MEK)	ug/L	100	106	106	64-135	
2-Chlorotoluene	ug/L	50	46.8	94	70-130	
2-Hexanone	ug/L	100	109	109	66-135	
4-Chlorotoluene	ug/L	50	48.7	97	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	109	109	70-130	
Acetone	ug/L	100	106	106	61-157	
Benzene	ug/L	50	51.4	103	70-130	
Bromobenzene	ug/L	50	46.8	94	70-130	
Bromochloromethane	ug/L	50	50.4	101	70-130	
Bromodichloromethane	ug/L	50	53.9	108	70-130	
Bromoform	ug/L	50	43.8	88	70-130	
Bromomethane	ug/L	50	33.3	67	38-130 v3	
Carbon tetrachloride	ug/L	50	58.2	116	70-130	
Chlorobenzene	ug/L	50	50.6	101	70-130	
Chloroethane	ug/L	50	43.6	87	37-142	
Chloroform	ug/L	50	52.8	106	70-130	
Chloromethane	ug/L	50	34.8	70	48-130	
cis-1,2-Dichloroethene	ug/L	50	49.8	100	70-130	
cis-1,3-Dichloropropene	ug/L	50	49.6	99	70-130	
Dibromochloromethane	ug/L	50	48.7	97	70-130	
Dibromomethane	ug/L	50	52.3	105	70-130	
Dichlorodifluoromethane	ug/L	50	46.5	93	53-134	
Diisopropyl ether	ug/L	50	53.9	108	70-135	
Ethylbenzene	ug/L	50	48.1	96	70-130	
Hexachloro-1,3-butadiene	ug/L	50	50.8	102	68-132	
m&p-Xylene	ug/L	100	95.3	95	70-130	
Methyl-tert-butyl ether	ug/L	50	52.7	105	70-130	
Methylene Chloride	ug/L	50	52.9	106	67-132	
Naphthalene	ug/L	50	59.5	119	70-130	
o-Xylene	ug/L	50	49.0	98	70-131	
p-Isopropyltoluene	ug/L	50	48.1	96	70-130	
Styrene	ug/L	50	52.3	105	70-130	
Tetrachloroethene	ug/L	50	52.0	104	69-130	
Toluene	ug/L	50	48.4	97	70-130	
trans-1,2-Dichloroethene	ug/L	50	54.4	109	70-130	
trans-1,3-Dichloropropene	ug/L	50	51.1	102	70-130	
Trichloroethene	ug/L	50	50.5	101	70-130	
Trichlorofluoromethane	ug/L	50	45.7	91	63-130	
Vinyl acetate	ug/L	100	96.7	97	55-143	
Vinyl chloride	ug/L	50	52.3	105	70-131	
Xylene (Total)	ug/L	150	144	96	70-130	
1,2-Dichloroethane-d4 (S)	%			96	70-130	
4-Bromofluorobenzene (S)	%			103	70-130	
Toluene-d8 (S)	%			100	70-130	

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QUALITY CONTROL DATA

Project: Kop-Flex Recovery Wells onsite

Pace Project No.: 92478023

MATRIX SPIKE SAMPLE: 2892233		92478024015	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	21.5	107	73-134	
1,1,1-Trichloroethane	ug/L	ND	20	34.9	175	82-143	M1
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20.3	102	70-136	
1,1,2-Trichloroethane	ug/L	ND	20	21.9	109	70-135	
1,1-Dichloroethane	ug/L	12.8	20	36.2	117	70-139	
1,1-Dichloroethene	ug/L	58.0	20	87.1	146	70-154	
1,1-Dichloropropene	ug/L	ND	20	24.0	120	70-149	
1,2,3-Trichlorobenzene	ug/L	ND	20	22.7	113	70-135	IH
1,2,3-Trichloropropane	ug/L	ND	20	18.5	93	71-137	
1,2,4-Trichlorobenzene	ug/L	ND	20	22.2	111	73-140	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	21.0	105	65-134	
1,2-Dibromoethane (EDB)	ug/L	ND	20	21.8	109	70-137	
1,2-Dichlorobenzene	ug/L	ND	20	20.7	104	70-133	
1,2-Dichloroethane	ug/L	ND	20	22.4	108	70-137	
1,2-Dichloropropane	ug/L	ND	20	21.6	108	70-140	
1,3-Dichlorobenzene	ug/L	ND	20	21.0	105	70-135	
1,3-Dichloropropane	ug/L	ND	20	21.3	107	70-143	
1,4-Dichlorobenzene	ug/L	ND	20	20.1	100	70-133	
2,2-Dichloropropane	ug/L	ND	20	24.6	123	61-148	
2-Butanone (MEK)	ug/L	ND	40	48.6	121	60-139	
2-Chlorotoluene	ug/L	ND	20	19.4	97	70-144	
2-Hexanone	ug/L	ND	40	44.2	111	65-138	
4-Chlorotoluene	ug/L	ND	20	21.1	105	70-137	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	44.7	112	65-135	
Acetone	ug/L	ND	40	45.4	114	60-148	
Benzene	ug/L	ND	20	21.7	109	70-151	
Bromobenzene	ug/L	ND	20	20.1	100	70-136	
Bromochloromethane	ug/L	ND	20	22.7	113	70-141	
Bromodichloromethane	ug/L	ND	20	23.6	118	70-138	
Bromoform	ug/L	ND	20	19.4	97	63-130	
Bromomethane	ug/L	ND	20	19.4	97	15-152	
Carbon tetrachloride	ug/L	ND	20	25.4	127	70-143	
Chlorobenzene	ug/L	ND	20	20.4	102	70-138	
Chloroethane	ug/L	ND	20	22.3	111	52-163	
Chloroform	ug/L	ND	20	24.2	121	70-139	
Chloromethane	ug/L	ND	20	19.8	99	41-139	
cis-1,2-Dichloroethene	ug/L	ND	20	22.1	111	70-141	
cis-1,3-Dichloropropene	ug/L	ND	20	22.3	112	70-137	
Dibromochloromethane	ug/L	ND	20	19.8	99	70-134	
Dibromomethane	ug/L	ND	20	21.9	109	70-138	
Dichlorodifluoromethane	ug/L	ND	20	24.7	124	47-155	
Diisopropyl ether	ug/L	ND	20	24.8	124	63-144	
Ethylbenzene	ug/L	ND	20	20.1	101	66-153	
Hexachloro-1,3-butadiene	ug/L	ND	20	20.6	103	65-149	
m&p-Xylene	ug/L	ND	40	40.0	100	69-152	
Methyl-tert-butyl ether	ug/L	1.1	20	24.5	117	54-156	
Methylene Chloride	ug/L	ND	20	23.9	120	42-159	

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QUALITY CONTROL DATA

Project: Kop-Flex Recovery Wells onsite
Pace Project No.: 92478023

MATRIX SPIKE SAMPLE: 2892233		92478024015	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Naphthalene	ug/L	ND	20	22.2	111	61-148	
o-Xylene	ug/L	ND	20	19.8	99	70-148	
p-Isopropyltoluene	ug/L	ND	20	20.9	104	70-146	
Styrene	ug/L	ND	20	20.8	104	70-135	
Tetrachloroethene	ug/L	ND	20	22.2	111	59-143	
Toluene	ug/L	ND	20	21.0	105	59-148	
trans-1,2-Dichloroethene	ug/L	ND	20	23.2	116	70-146	
trans-1,3-Dichloropropene	ug/L	ND	20	22.3	112	70-135	
Trichloroethene	ug/L	ND	20	22.5	113	70-147	
Trichlorofluoromethane	ug/L	ND	20	25.0	125	70-148	
Vinyl acetate	ug/L	ND	40	44.8	112	49-151	
Vinyl chloride	ug/L	ND	20	25.2	126	70-156	
Xylene (Total)	ug/L	ND	60	59.8	100	63-158	
1,2-Dichloroethane-d4 (S)	%				111	70-130	
4-Bromofluorobenzene (S)	%				105	70-130	
Toluene-d8 (S)	%				100	70-130	

SAMPLE DUPLICATE: 2892232

Parameter	Units	92478032010	Dup	RPD	Max	Qualifiers
		Result	Result		RPD	
1,1,1,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,1-Trichloroethane	ug/L	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,2-Trichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethene	ug/L	ND	ND		30	
1,1-Dichloropropene	ug/L	ND	ND		30	
1,2,3-Trichlorobenzene	ug/L	ND	ND		30 IH	
1,2,3-Trichloropropane	ug/L	ND	ND		30	
1,2,4-Trichlorobenzene	ug/L	ND	ND		30	
1,2-Dibromo-3-chloropropane	ug/L	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/L	ND	ND		30	
1,2-Dichlorobenzene	ug/L	ND	ND		30	
1,2-Dichloroethane	ug/L	ND	ND		30	
1,2-Dichloropropane	ug/L	ND	ND		30	
1,3-Dichlorobenzene	ug/L	ND	ND		30	
1,3-Dichloropropane	ug/L	ND	ND		30	
1,4-Dichlorobenzene	ug/L	ND	ND		30	
2,2-Dichloropropane	ug/L	ND	ND		30	
2-Butanone (MEK)	ug/L	ND	ND		30	
2-Chlorotoluene	ug/L	ND	ND		30	
2-Hexanone	ug/L	ND	ND		30	
4-Chlorotoluene	ug/L	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	ND		30	
Acetone	ug/L	ND	ND		30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop-Flex Recovery Wells onsite

Pace Project No.: 92478023

SAMPLE DUPLICATE: 2892232

Parameter	Units	92478032010 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzene	ug/L	ND	ND		30	
Bromobenzene	ug/L	ND	ND		30	
Bromochloromethane	ug/L	ND	ND		30	
Bromodichloromethane	ug/L	ND	ND		30	
Bromoform	ug/L	ND	ND		30	
Bromomethane	ug/L	ND	ND		30 v2	
Carbon tetrachloride	ug/L	ND	ND		30	
Chlorobenzene	ug/L	ND	ND		30	
Chloroethane	ug/L	ND	ND		30	
Chloroform	ug/L	ND	ND		30	
Chloromethane	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	ND	ND		30	
cis-1,3-Dichloropropene	ug/L	ND	ND		30	
Dibromochloromethane	ug/L	ND	ND		30	
Dibromomethane	ug/L	ND	ND		30	
Dichlorodifluoromethane	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Hexachloro-1,3-butadiene	ug/L	ND	ND		30	
m&p-Xylene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Methylene Chloride	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
o-Xylene	ug/L	ND	ND		30	
p-Isopropyltoluene	ug/L	ND	ND		30	
Styrene	ug/L	ND	ND		30	
Tetrachloroethene	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
trans-1,2-Dichloroethene	ug/L	ND	ND		30	
trans-1,3-Dichloropropene	ug/L	ND	ND		30	
Trichloroethene	ug/L	ND	ND		30	
Trichlorofluoromethane	ug/L	ND	ND		30	
Vinyl acetate	ug/L	ND	ND		30	
Vinyl chloride	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	118	115			
4-Bromofluorobenzene (S)	%	99	95			
Toluene-d8 (S)	%	100	101			

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QUALITY CONTROL DATA

Project: Kop-Flex Recovery Wells onsite
Pace Project No.: 92478023

QC Batch: 543382 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92478023001, 92478023002, 92478023004, 92478023005

METHOD BLANK: 2894165 Matrix: Water
Associated Lab Samples: 92478023001, 92478023002, 92478023004, 92478023005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	05/26/20 12:50	
1,1,1-Trichloroethane	ug/L	ND	1.0	05/26/20 12:50	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	05/26/20 12:50	
1,1,2-Trichloroethane	ug/L	ND	1.0	05/26/20 12:50	
1,1-Dichloroethane	ug/L	ND	1.0	05/26/20 12:50	
1,1-Dichloroethene	ug/L	ND	1.0	05/26/20 12:50	
1,1-Dichloropropene	ug/L	ND	1.0	05/26/20 12:50	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	05/26/20 12:50	
1,2,3-Trichloropropane	ug/L	ND	1.0	05/26/20 12:50	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	05/26/20 12:50	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	05/26/20 12:50	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	05/26/20 12:50	
1,2-Dichlorobenzene	ug/L	ND	1.0	05/26/20 12:50	
1,2-Dichloroethane	ug/L	ND	1.0	05/26/20 12:50	
1,2-Dichloropropane	ug/L	ND	1.0	05/26/20 12:50	
1,3-Dichlorobenzene	ug/L	ND	1.0	05/26/20 12:50	
1,3-Dichloropropane	ug/L	ND	1.0	05/26/20 12:50	
1,4-Dichlorobenzene	ug/L	ND	1.0	05/26/20 12:50	
2,2-Dichloropropane	ug/L	ND	1.0	05/26/20 12:50	
2-Butanone (MEK)	ug/L	ND	5.0	05/26/20 12:50	
2-Chlorotoluene	ug/L	ND	1.0	05/26/20 12:50	
2-Hexanone	ug/L	ND	5.0	05/26/20 12:50	v1
4-Chlorotoluene	ug/L	ND	1.0	05/26/20 12:50	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	05/26/20 12:50	
Acetone	ug/L	ND	25.0	05/26/20 12:50	
Benzene	ug/L	ND	1.0	05/26/20 12:50	
Bromobenzene	ug/L	ND	1.0	05/26/20 12:50	
Bromochloromethane	ug/L	ND	1.0	05/26/20 12:50	
Bromodichloromethane	ug/L	ND	1.0	05/26/20 12:50	
Bromoform	ug/L	ND	1.0	05/26/20 12:50	
Bromomethane	ug/L	ND	2.0	05/26/20 12:50	IH
Carbon tetrachloride	ug/L	ND	1.0	05/26/20 12:50	
Chlorobenzene	ug/L	ND	1.0	05/26/20 12:50	
Chloroethane	ug/L	ND	1.0	05/26/20 12:50	
Chloroform	ug/L	ND	5.0	05/26/20 12:50	
Chloromethane	ug/L	ND	1.0	05/26/20 12:50	
cis-1,2-Dichloroethene	ug/L	ND	1.0	05/26/20 12:50	
cis-1,3-Dichloropropene	ug/L	ND	1.0	05/26/20 12:50	
Dibromochloromethane	ug/L	ND	1.0	05/26/20 12:50	
Dibromomethane	ug/L	ND	1.0	05/26/20 12:50	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop-Flex Recovery Wells onsite
Pace Project No.: 92478023

METHOD BLANK: 2894165 Matrix: Water
Associated Lab Samples: 92478023001, 92478023002, 92478023004, 92478023005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	05/26/20 12:50	
Diisopropyl ether	ug/L	ND	1.0	05/26/20 12:50	
Ethylbenzene	ug/L	ND	1.0	05/26/20 12:50	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	05/26/20 12:50	IH
m&p-Xylene	ug/L	ND	2.0	05/26/20 12:50	
Methyl-tert-butyl ether	ug/L	ND	1.0	05/26/20 12:50	
Methylene Chloride	ug/L	ND	5.0	05/26/20 12:50	v1
Naphthalene	ug/L	ND	1.0	05/26/20 12:50	
o-Xylene	ug/L	ND	1.0	05/26/20 12:50	
p-Isopropyltoluene	ug/L	ND	1.0	05/26/20 12:50	
Styrene	ug/L	ND	1.0	05/26/20 12:50	
Tetrachloroethene	ug/L	ND	1.0	05/26/20 12:50	
Toluene	ug/L	ND	1.0	05/26/20 12:50	
trans-1,2-Dichloroethene	ug/L	ND	1.0	05/26/20 12:50	
trans-1,3-Dichloropropene	ug/L	ND	1.0	05/26/20 12:50	
Trichloroethene	ug/L	ND	1.0	05/26/20 12:50	
Trichlorofluoromethane	ug/L	ND	1.0	05/26/20 12:50	
Vinyl acetate	ug/L	ND	2.0	05/26/20 12:50	v1
Vinyl chloride	ug/L	ND	1.0	05/26/20 12:50	
Xylene (Total)	ug/L	ND	1.0	05/26/20 12:50	
1,2-Dichloroethane-d4 (S)	%	115	70-130	05/26/20 12:50	
4-Bromofluorobenzene (S)	%	100	70-130	05/26/20 12:50	
Toluene-d8 (S)	%	98	70-130	05/26/20 12:50	

LABORATORY CONTROL SAMPLE: 2894166

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	54.2	108	70-130	
1,1,1-Trichloroethane	ug/L	50	49.3	99	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	53.0	106	70-130	
1,1,2-Trichloroethane	ug/L	50	47.6	95	70-130	
1,1-Dichloroethane	ug/L	50	51.9	104	70-130	
1,1-Dichloroethene	ug/L	50	56.0	112	70-130	
1,1-Dichloropropene	ug/L	50	50.5	101	70-130	
1,2,3-Trichlorobenzene	ug/L	50	50.1	100	70-130	
1,2,3-Trichloropropane	ug/L	50	51.5	103	70-130	
1,2,4-Trichlorobenzene	ug/L	50	52.4	105	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	44.4	89	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	54.1	108	70-130	
1,2-Dichlorobenzene	ug/L	50	55.5	111	70-130	
1,2-Dichloroethane	ug/L	50	52.3	105	70-130	
1,2-Dichloropropane	ug/L	50	53.1	106	70-130	
1,3-Dichlorobenzene	ug/L	50	55.7	111	70-130	
1,3-Dichloropropane	ug/L	50	56.2	112	70-131	

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QUALITY CONTROL DATA

Project: Kop-Flex Recovery Wells onsite

Pace Project No.: 92478023

LABORATORY CONTROL SAMPLE: 2894166

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	53.8	108	70-130	
2,2-Dichloropropane	ug/L	50	48.4	97	69-130	
2-Butanone (MEK)	ug/L	100	112	112	64-135	
2-Chlorotoluene	ug/L	50	54.3	109	70-130	
2-Hexanone	ug/L	100	123	123	66-135	v1
4-Chlorotoluene	ug/L	50	54.8	110	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	113	113	70-130	
Acetone	ug/L	100	115	115	61-157	
Benzene	ug/L	50	52.4	105	70-130	
Bromobenzene	ug/L	50	54.5	109	70-130	
Bromochloromethane	ug/L	50	45.8	92	70-130	
Bromodichloromethane	ug/L	50	49.0	98	70-130	
Bromoform	ug/L	50	50.8	102	70-130	
Bromomethane	ug/L	50	41.8	84	38-130	IH
Carbon tetrachloride	ug/L	50	52.6	105	70-130	
Chlorobenzene	ug/L	50	53.6	107	70-130	
Chloroethane	ug/L	50	42.2	84	37-142	
Chloroform	ug/L	50	49.5	99	70-130	
Chloromethane	ug/L	50	49.8	100	48-130	
cis-1,2-Dichloroethene	ug/L	50	51.2	102	70-130	
cis-1,3-Dichloropropene	ug/L	50	49.5	99	70-130	
Dibromochloromethane	ug/L	50	55.7	111	70-130	
Dibromomethane	ug/L	50	50.5	101	70-130	
Dichlorodifluoromethane	ug/L	50	44.2	88	53-134	
Diisopropyl ether	ug/L	50	58.7	117	70-135	
Ethylbenzene	ug/L	50	54.9	110	70-130	
Hexachloro-1,3-butadiene	ug/L	50	49.7	99	68-132	IH
m&p-Xylene	ug/L	100	109	109	70-130	
Methyl-tert-butyl ether	ug/L	50	52.4	105	70-130	
Methylene Chloride	ug/L	50	60.8	122	67-132	v1
Naphthalene	ug/L	50	49.2	98	70-130	
o-Xylene	ug/L	50	54.1	108	70-131	
p-Isopropyltoluene	ug/L	50	56.8	114	70-130	
Styrene	ug/L	50	56.9	114	70-130	
Tetrachloroethene	ug/L	50	53.7	107	69-130	
Toluene	ug/L	50	46.8	94	70-130	
trans-1,2-Dichloroethene	ug/L	50	54.4	109	70-130	
trans-1,3-Dichloropropene	ug/L	50	49.1	98	70-130	
Trichloroethene	ug/L	50	50.5	101	70-130	
Trichlorofluoromethane	ug/L	50	43.4	87	63-130	
Vinyl acetate	ug/L	100	132	132	55-143	v1
Vinyl chloride	ug/L	50	50.9	102	70-131	
Xylene (Total)	ug/L	150	163	109	70-130	
1,2-Dichloroethane-d4 (S)	%			107	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			98	70-130	

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QUALITY CONTROL DATA

Project: Kop-Flex Recovery Wells onsite

Pace Project No.: 92478023

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2894167			2894168								
Parameter	Units	92478005001	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	RPD	RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits				
1,1,1,2-Tetrachloroethane	ug/L	ND	100	100	120	139	120	139	73-134	15	30	H1,M1	
1,1,1-Trichloroethane	ug/L	ND	100	100	122	140	122	140	82-143	14	30	H1	
1,1,2,2-Tetrachloroethane	ug/L	ND	100	100	121	140	121	140	70-136	15	30	H1,M1	
1,1,2-Trichloroethane	ug/L	ND	100	100	119	133	119	133	70-135	11	30	H1	
1,1-Dichloroethane	ug/L	ND	100	100	139	149	139	149	70-139	6	30	H1,M1	
1,1-Dichloroethene	ug/L	ND	100	100	147	164	147	164	70-154	11	30	H1,M1	
1,1-Dichloropropene	ug/L	ND	100	100	131	147	131	147	70-149	11	30	H1	
1,2,3-Trichlorobenzene	ug/L	ND	100	100	116	130	116	130	70-135	11	30	H1	
1,2,3-Trichloropropane	ug/L	ND	100	100	123	144	123	144	71-137	16	30	H1,M1	
1,2,4-Trichlorobenzene	ug/L	ND	100	100	123	123	123	123	73-140	0	30	H1	
1,2-Dibromo-3-chloropropane	ug/L	ND	100	100	109	113	109	113	65-134	3	30	H1	
1,2-Dibromoethane (EDB)	ug/L	ND	100	100	125	146	125	146	70-137	15	30	H1,M1	
1,2-Dichlorobenzene	ug/L	ND	100	100	139	140	139	140	70-133	1	30	H1,M1	
1,2-Dichloroethane	ug/L	ND	100	100	137	148	137	148	70-137	8	30	H1,M1	
1,2-Dichloropropane	ug/L	ND	100	100	131	152	131	152	70-140	15	30	H1,M1	
1,3-Dichlorobenzene	ug/L	ND	100	100	133	134	133	134	70-135	1	30	H1	
1,3-Dichloropropane	ug/L	ND	100	100	134	156	134	156	70-143	15	30	H1,M1	
1,4-Dichlorobenzene	ug/L	ND	100	100	130	134	130	134	70-133	3	30	H1,M1	
2,2-Dichloropropane	ug/L	ND	100	100	128	138	128	138	61-148	7	30	H1	
2-Butanone (MEK)	ug/L	ND	200	200	274	298	137	149	60-139	8	30	H1,M1	
2-Chlorotoluene	ug/L	ND	100	100	145	143	145	143	70-144	1	30	H1,M1	
2-Hexanone	ug/L	ND	200	200	279	324	139	162	65-138	15	30	H1,M1, v1	
4-Chlorotoluene	ug/L	ND	100	100	134	136	134	136	70-137	1	30	H1	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	200	200	285	322	139	157	65-135	12	30	H1,M1	
Acetone	ug/L	ND	200	200	276	304	138	152	60-148	10	30	H1,M1	
Benzene	ug/L	346	100	100	471	502	126	157	70-151	6	30	H1,M1	
Bromobenzene	ug/L	ND	100	100	138	138	138	138	70-136	0	30	H1,M1	
Bromochloromethane	ug/L	ND	100	100	122	135	122	135	70-141	10	30	H1	
Bromodichloromethane	ug/L	ND	100	100	118	133	118	133	70-138	12	30	H1	
Bromoform	ug/L	ND	100	100	106	117	106	117	63-130	9	30	H1	
Bromomethane	ug/L	ND	100	100	136	163	136	163	15-152	18	30	H1,IH, M1	
Carbon tetrachloride	ug/L	ND	100	100	127	142	127	142	70-143	12	30	H1	
Chlorobenzene	ug/L	ND	100	100	134	148	134	148	70-138	10	30	H1,M1	
Chloroethane	ug/L	ND	100	100	129	136	129	136	52-163	5	30	H1	
Chloroform	ug/L	ND	100	100	127	140	127	140	70-139	10	30	H1,M1	
Chloromethane	ug/L	ND	100	100	132	144	130	143	41-139	9	30	H1,M1	
cis-1,2-Dichloroethene	ug/L	ND	100	100	134	149	134	149	70-141	10	30	H1,M1	
cis-1,3-Dichloropropene	ug/L	ND	100	100	126	135	126	135	70-137	7	30	H1	
Dibromochloromethane	ug/L	ND	100	100	122	131	122	131	70-134	7	30	H1	
Dibromomethane	ug/L	ND	100	100	126	141	126	141	70-138	12	30	H1,M1	
Dichlorodifluoromethane	ug/L	ND	100	100	121	131	121	131	47-155	7	30	H1	
Diisopropyl ether	ug/L	8.9	100	100	158	174	149	165	63-144	10	30	H1,M1	
Ethylbenzene	ug/L	205	100	100	327	347	122	141	66-153	6	30	H1	

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QUALITY CONTROL DATA

Project: Kop-Flex Recovery Wells onsite

Pace Project No.: 92478023

Parameter	Units	2894167		2894168		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92478005001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Hexachloro-1,3-butadiene	ug/L	ND	100	100	132	135	132	135	65-149	2	30	H1,IH	
m&p-Xylene	ug/L	719	200	200	969	998	125	140	69-152	3	30	H1	
Methyl-tert-butyl ether	ug/L	27.4	100	100	157	168	129	141	54-156	7	30	H1	
Methylene Chloride	ug/L	ND	100	100	155	170	155	170	42-159	9	30	H1,M1, v1	
Naphthalene	ug/L	110	100	100	230	229	120	120	61-148	0	30	H1	
o-Xylene	ug/L	378	100	100	512	521	135	143	70-148	2	30	H1	
p-Isopropyltoluene	ug/L	ND	100	100	155	158	155	158	70-146	1	30	H1,M1	
Styrene	ug/L	ND	100	100	135	144	132	141	70-135	7	30	H1,M1	
Tetrachloroethene	ug/L	ND	100	100	128	147	128	147	59-143	14	30	H1,M1	
Toluene	ug/L	644	100	100	747	776	103	133	59-148	4	30	H1	
trans-1,2-Dichloroethene	ug/L	ND	100	100	141	154	141	154	70-146	9	30	H1,M1	
trans-1,3-Dichloropropene	ug/L	ND	100	100	121	133	121	133	70-135	9	30	H1	
Trichloroethene	ug/L	ND	100	100	131	139	131	139	70-147	6	30	H1	
Trichlorofluoromethane	ug/L	ND	100	100	114	129	114	129	70-148	13	30	H1	
Vinyl acetate	ug/L	ND	200	200	322	367	161	184	49-151	13	30	H1,M1, v1	
Vinyl chloride	ug/L	ND	100	100	136	147	136	147	70-156	8	30	H1	
Xylene (Total)	ug/L	1100	300	300	1480	1520	128	141	63-158	3	30		
1,2-Dichloroethane-d4 (S)	%						111	113	70-130				
4-Bromofluorobenzene (S)	%						100	102	70-130				
Toluene-d8 (S)	%						100	103	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

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QUALITY CONTROL DATA

Project: Kop-Flex Recovery Wells onsite

Pace Project No.: 92478023

QC Batch:	542210	Analysis Method:	EPA 8260D Mod.
QC Batch Method:	EPA 8260D Mod.	Analysis Description:	8260D MSV SIM
		Laboratory:	Pace Analytical Services - Charlotte

Associated Lab Samples: 92478023001, 92478023003, 92478023004, 92478023005

METHOD BLANK: 2889137 Matrix: Water

Associated Lab Samples: 92478023001, 92478023003, 92478023004, 92478023005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	05/19/20 01:48	
1,2-Dichloroethane-d4 (S)	%	94	50-150	05/19/20 01:48	
Toluene-d8 (S)	%	94	50-150	05/19/20 01:48	

LABORATORY CONTROL SAMPLE: 2889138

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	18.6	93	70-130	
1,2-Dichloroethane-d4 (S)	%			97	50-150	
Toluene-d8 (S)	%			95	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2889139 2889140

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92478022015 Result	Spike Conc.	Spike Conc.	Result								
1,4-Dioxane (p-Dioxane)	ug/L	ND	20	20	17.6	19.1	86	94	50-150	8	30		
1,2-Dichloroethane-d4 (S)	%							97	110	50-150		30	
Toluene-d8 (S)	%							93	98	50-150		30	

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QUALITY CONTROL DATA

Project: Kop-Flex Recovery Wells onsite
Pace Project No.: 92478023

QC Batch: 542729	Analysis Method: EPA 8260D Mod.
QC Batch Method: EPA 8260D Mod.	Analysis Description: 8260D MSV SIM
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92478023002

METHOD BLANK: 2891387 Matrix: Water
Associated Lab Samples: 92478023002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	05/20/20 17:52	
1,2-Dichloroethane-d4 (S)	%	98	50-150	05/20/20 17:52	
Toluene-d8 (S)	%	106	50-150	05/20/20 17:52	

LABORATORY CONTROL SAMPLE: 2891388

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	19.3	97	70-130	
1,2-Dichloroethane-d4 (S)	%			106	50-150	
Toluene-d8 (S)	%			101	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2891389 2891390

Parameter	Units	92478023002 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	99.8	20	20	120	127	99	134	50-150	6	30	E
1,2-Dichloroethane-d4 (S)	%						95	95	50-150		30	
Toluene-d8 (S)	%						99	115	50-150		30	

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QUALIFIERS

Project: Kop-Flex Recovery Wells onsite

Pace Project No.: 92478023

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.

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H1	Analysis conducted outside the EPA method holding time.
IH	This analyte exceeded secondary source verification criteria high for the initial calibration. The reported results should be considered an estimated value.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
v1	The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.
v2	The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.
v3	The continuing calibration verification was below the method acceptance limit. Any detection for the analyte in the associated samples may have low bias.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Kop-Flex Recovery Wells onsite

Pace Project No.: 92478023

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92478023001	RW-1S	EPA 8260D	543382		
92478023002	RW-2S	EPA 8260D	543382		
92478023003	RW-3S	EPA 8260D	542927		
92478023004	RW-1D	EPA 8260D	543382		
92478023005	RW-2D	EPA 8260D	543382		
92478023001	RW-1S	EPA 8260D Mod.	542210		
92478023002	RW-2S	EPA 8260D Mod.	542729		
92478023003	RW-3S	EPA 8260D Mod.	542210		
92478023004	RW-1D	EPA 8260D Mod.	542210		
92478023005	RW-2D	EPA 8260D Mod.	542210		

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Document Name:
Sample Condition Upon Receipt(SCUR)
 Document No.:
F-CAR-CS-033-Rev.06

Document Revised: February 7, 2018
 Page 1 of 2
 Issuing Authority:
 Pace Carolinas Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville

Sample Condition
 Upon Receipt

Client Name:

WSP

Project #:

WO# : 92478023



92478023

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: *SK 5-18-20*

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?
 Yes No N/A

Thermometer: IR Gun ID: 92T061 Type of Ice: Wet Blue None

Cooler Temp (°C): 5.8, 6.9, 10.7 Correction Factor: Add/Subtract (°C) +0.1

Temp should be above freezing to 6°C

Cooler Temp Corrected (°C): 5.9, 7.0, 10.8

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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		1.
Samples Arrived w/within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		2.
Short Hold Time Analysis (<72 hr.)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		3.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		4.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		5.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		6.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		7.
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		8.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		9.
-Includes Date/Time/ID/Analysis Matrix: <i>WT</i>			
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		10.
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		11.
Trip Blank Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<i>SK 5-18-20</i>	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Ice melted

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____



*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# : 92478023

PM: PTE

Due Date: 05/26/20

CLIENT: 92-WSP

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																5													
2																5													
3																6													
4																6													
5																6													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

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).

Recovery Wells

CHAIN-OF-CUSTODY RECORD

WSP USA Office Address
 13530 Dulles Technology Dr. Ste 300 Herndon, VA

Project Name
 Koolflex - onsite

Project Location
 Haver, MD

Project Number & Task
 31401545.01d

Sampler(s) Name(s)
 Molly Long
 Elliot M

WSP USA Contact Name
 Eric Johnson

WSP USA Contact Email
 Eric.Johnson@wsp.com

WSP USA Contact Phone
 (703) 209 6500

Sampler(s) Signature(s)
 [Signature]

Requested Analyses & Preservatives

VOCs	8260B
1,4-Dioxane	8260B SIMS

No. 008134

Laboratory Name & Location
 Pace, Huntersville, NC

Laboratory Project Manager
 Taylor Ezell

Requested Turn-Around-Time
 Standard
 24 HR
 48 HR
 72 HR
 HR

Sample Comments
 92578023

Sample Identification	Matrix	Collection Start		Collection Stop		Number of Containers	Date	Time	Received By (Signature)	Date	Time	Shipment Method	Tracking Number(s)	Custody Seal Number(s)
		Date	Time	Date	Time									
RW-15	AQ	5/13/2020	11:30	5/13/2020	5:30	5	X	X	[Signature]	5/18/20	912			
RW-25	AQ	5/12/2020	14:40	5/12/2020	5:40	5	X	X	[Signature]					
RW-35	AQ	5/12/2020	14:55	5/12/2020	6:30	6	X	X	[Signature]					
RW-1D	AQ	5/12/2020	15:30	5/12/2020	6:30	6	X	X	[Signature]					
RW-2D	AQ	5/12/2020	16:55	5/12/2020	6:55	6	X	X	[Signature]					

*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)

December 04, 2020

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

RE: Project: Kop Flex
Pace Project No.: 92507937

Dear Eric Johnson:

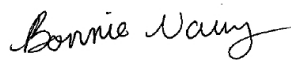
Enclosed are the analytical results for sample(s) received by the laboratory between November 24, 2020 and November 25, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

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

Sincerely,



Bonnie Vang
bonnie.vang@pacelabs.com
(704)875-9092
Project Manager

Enclosures

cc: Molly Long, WSP
Pam Robertson, WSP USA



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Kop Flex

Pace Project No.: 92507937

Pace Analytical Services Charlotte

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Kop Flex
Pace Project No.: 92507937

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92507937001	MW-43	Water	11/22/20 11:10	11/24/20 11:00
92507937002	MW-39	Water	11/22/20 11:25	11/24/20 11:00
92507937003	MW-18	Water	11/22/20 11:40	11/24/20 11:00
92507937004	MW-5R	Water	11/22/20 12:50	11/24/20 11:00
92507937005	MW-40D	Water	11/22/20 13:05	11/24/20 11:00
92507937006	MW-1D	Water	11/22/20 15:05	11/24/20 11:00
92507937007	MW-23D	Water	11/22/20 16:55	11/24/20 11:00
92507937008	Trip Blank	Water	11/22/20 00:00	11/24/20 11:00
92507937009	MW-38R	Water	11/22/20 13:20	11/25/20 11:42
92507937010	MW-21D	Water	11/22/20 14:10	11/25/20 11:42
92507937011	MW-22D	Water	11/22/20 15:25	11/25/20 11:42
92507937012	MW-20	Water	11/22/20 15:35	11/25/20 11:42
92507937013	MW-4	Water	11/22/20 15:50	11/25/20 11:42
92507937014	MW-9	Water	11/22/20 16:05	11/25/20 11:42
92507937015	MW-16	Water	11/22/20 17:10	11/25/20 11:42

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SAMPLE ANALYTE COUNT

Project: Kop Flex
Pace Project No.: 92507937

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92507937001	MW-43	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92507937002	MW-39	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92507937003	MW-18	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92507937004	MW-5R	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92507937005	MW-40D	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92507937006	MW-1D	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92507937007	MW-23D	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92507937008	Trip Blank	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92507937009	MW-38R	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	CL	3	PASI-C
92507937010	MW-21D	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	CL	3	PASI-C
92507937011	MW-22D	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	CL	3	PASI-C
92507937012	MW-20	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	CL	3	PASI-C
92507937013	MW-4	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92507937014	MW-9	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	CL	3	PASI-C
92507937015	MW-16	EPA 8260D	PM1	63	PASI-C
		EPA 8260D Mod.	CL	3	PASI-C

PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop Flex

Pace Project No.: 92507937

Sample: MW-43	Lab ID: 92507937001	Collected: 11/22/20 11:10	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/25/20 18:58	67-64-1	
Benzene	ND	ug/L	1.0	1		11/25/20 18:58	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/25/20 18:58	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/25/20 18:58	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/25/20 18:58	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/25/20 18:58	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/25/20 18:58	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		11/25/20 18:58	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/25/20 18:58	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/25/20 18:58	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/25/20 18:58	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/25/20 18:58	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/25/20 18:58	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 18:58	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 18:58	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/25/20 18:58	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/25/20 18:58	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/25/20 18:58	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/25/20 18:58	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 18:58	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 18:58	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 18:58	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/25/20 18:58	75-71-8	
1,1-Dichloroethane	2.9	ug/L	1.0	1		11/25/20 18:58	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/25/20 18:58	107-06-2	
1,1-Dichloroethene	31.8	ug/L	1.0	1		11/25/20 18:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 18:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 18:58	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 18:58	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/25/20 18:58	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 18:58	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/25/20 18:58	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 18:58	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 18:58	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/25/20 18:58	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/25/20 18:58	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/25/20 18:58	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/25/20 18:58	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/25/20 18:58	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/25/20 18:58	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/25/20 18:58	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/25/20 18:58	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/25/20 18:58	91-20-3	
Styrene	ND	ug/L	1.0	1		11/25/20 18:58	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 18:58	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 18:58	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-43	Lab ID: 92507937001	Collected: 11/22/20 11:10	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		11/25/20 18:58	127-18-4	
Toluene	ND	ug/L	1.0	1		11/25/20 18:58	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 18:58	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 18:58	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/25/20 18:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/25/20 18:58	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/25/20 18:58	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/25/20 18:58	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/25/20 18:58	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/25/20 18:58	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/25/20 18:58	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/25/20 18:58	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/25/20 18:58	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/25/20 18:58	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	1		11/25/20 18:58	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130	1		11/25/20 18:58	17060-07-0	
Toluene-d8 (S)	100	%	70-130	1		11/25/20 18:58	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	42.7	ug/L	2.0	1		11/25/20 00:43	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%	70-130	1		11/25/20 00:43	17060-07-0	
Toluene-d8 (S)	92	%	66-133	1		11/25/20 00:43	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-39	Lab ID: 92507937002	Collected: 11/22/20 11:25	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/25/20 16:36	67-64-1	
Benzene	ND	ug/L	1.0	1		11/25/20 16:36	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/25/20 16:36	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/25/20 16:36	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/25/20 16:36	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/25/20 16:36	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/25/20 16:36	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		11/25/20 16:36	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/25/20 16:36	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/25/20 16:36	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/25/20 16:36	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/25/20 16:36	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/25/20 16:36	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 16:36	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 16:36	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/25/20 16:36	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/25/20 16:36	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/25/20 16:36	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/25/20 16:36	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 16:36	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 16:36	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 16:36	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/25/20 16:36	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/25/20 16:36	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/25/20 16:36	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/25/20 16:36	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 16:36	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 16:36	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 16:36	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/25/20 16:36	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 16:36	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/25/20 16:36	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 16:36	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 16:36	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/25/20 16:36	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/25/20 16:36	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/25/20 16:36	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/25/20 16:36	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/25/20 16:36	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/25/20 16:36	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/25/20 16:36	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/25/20 16:36	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/25/20 16:36	91-20-3	
Styrene	ND	ug/L	1.0	1		11/25/20 16:36	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 16:36	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 16:36	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-39	Lab ID: 92507937002	Collected: 11/22/20 11:25	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		11/25/20 16:36	127-18-4	
Toluene	ND	ug/L	1.0	1		11/25/20 16:36	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 16:36	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 16:36	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/25/20 16:36	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/25/20 16:36	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/25/20 16:36	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/25/20 16:36	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/25/20 16:36	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/25/20 16:36	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/25/20 16:36	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/25/20 16:36	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/25/20 16:36	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/25/20 16:36	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		11/25/20 16:36	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130	1		11/25/20 16:36	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		11/25/20 16:36	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		11/24/20 19:35	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%	70-130	1		11/24/20 19:35	17060-07-0	
Toluene-d8 (S)	93	%	66-133	1		11/24/20 19:35	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-18	Lab ID: 92507937003	Collected: 11/22/20 11:40	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/25/20 15:25	67-64-1	
Benzene	ND	ug/L	1.0	1		11/25/20 15:25	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/25/20 15:25	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/25/20 15:25	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/25/20 15:25	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/25/20 15:25	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/25/20 15:25	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		11/25/20 15:25	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/25/20 15:25	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/25/20 15:25	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/25/20 15:25	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/25/20 15:25	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/25/20 15:25	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 15:25	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 15:25	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/25/20 15:25	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/25/20 15:25	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/25/20 15:25	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/25/20 15:25	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 15:25	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 15:25	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 15:25	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/25/20 15:25	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/25/20 15:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/25/20 15:25	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/25/20 15:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 15:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 15:25	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 15:25	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/25/20 15:25	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 15:25	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/25/20 15:25	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 15:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 15:25	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/25/20 15:25	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/25/20 15:25	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/25/20 15:25	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/25/20 15:25	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/25/20 15:25	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/25/20 15:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/25/20 15:25	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/25/20 15:25	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/25/20 15:25	91-20-3	
Styrene	ND	ug/L	1.0	1		11/25/20 15:25	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 15:25	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 15:25	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-18	Lab ID: 92507937003	Collected: 11/22/20 11:40	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		11/25/20 15:25	127-18-4	
Toluene	ND	ug/L	1.0	1		11/25/20 15:25	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 15:25	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 15:25	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/25/20 15:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/25/20 15:25	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/25/20 15:25	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/25/20 15:25	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/25/20 15:25	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/25/20 15:25	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/25/20 15:25	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/25/20 15:25	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/25/20 15:25	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/25/20 15:25	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		11/25/20 15:25	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130	1		11/25/20 15:25	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		11/25/20 15:25	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		11/24/20 19:54	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%	70-130	1		11/24/20 19:54	17060-07-0	
Toluene-d8 (S)	92	%	66-133	1		11/24/20 19:54	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex

Pace Project No.: 92507937

Sample: MW-5R	Lab ID: 92507937004	Collected: 11/22/20 12:50	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/25/20 17:30	67-64-1	
Benzene	ND	ug/L	1.0	1		11/25/20 17:30	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/25/20 17:30	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/25/20 17:30	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/25/20 17:30	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/25/20 17:30	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/25/20 17:30	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		11/25/20 17:30	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/25/20 17:30	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/25/20 17:30	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/25/20 17:30	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/25/20 17:30	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/25/20 17:30	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 17:30	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 17:30	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/25/20 17:30	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/25/20 17:30	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/25/20 17:30	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/25/20 17:30	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 17:30	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 17:30	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 17:30	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/25/20 17:30	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/25/20 17:30	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/25/20 17:30	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/25/20 17:30	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 17:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 17:30	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 17:30	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/25/20 17:30	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 17:30	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/25/20 17:30	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 17:30	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 17:30	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/25/20 17:30	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/25/20 17:30	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/25/20 17:30	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/25/20 17:30	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/25/20 17:30	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/25/20 17:30	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/25/20 17:30	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/25/20 17:30	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/25/20 17:30	91-20-3	
Styrene	ND	ug/L	1.0	1		11/25/20 17:30	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 17:30	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 17:30	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-5R	Lab ID: 92507937004	Collected: 11/22/20 12:50	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		11/25/20 17:30	127-18-4	
Toluene	ND	ug/L	1.0	1		11/25/20 17:30	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 17:30	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 17:30	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/25/20 17:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/25/20 17:30	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/25/20 17:30	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/25/20 17:30	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/25/20 17:30	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/25/20 17:30	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/25/20 17:30	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/25/20 17:30	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/25/20 17:30	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/25/20 17:30	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		11/25/20 17:30	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130	1		11/25/20 17:30	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		11/25/20 17:30	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	2.2	ug/L	2.0	1		11/24/20 20:14	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	70-130	1		11/24/20 20:14	17060-07-0	
Toluene-d8 (S)	93	%	66-133	1		11/24/20 20:14	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex

Pace Project No.: 92507937

Sample: MW-40D	Lab ID: 92507937005	Collected: 11/22/20 13:05	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/25/20 17:47	67-64-1	
Benzene	ND	ug/L	1.0	1		11/25/20 17:47	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/25/20 17:47	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/25/20 17:47	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/25/20 17:47	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/25/20 17:47	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/25/20 17:47	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		11/25/20 17:47	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/25/20 17:47	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/25/20 17:47	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/25/20 17:47	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/25/20 17:47	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/25/20 17:47	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 17:47	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 17:47	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/25/20 17:47	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/25/20 17:47	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/25/20 17:47	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/25/20 17:47	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 17:47	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 17:47	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 17:47	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/25/20 17:47	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/25/20 17:47	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/25/20 17:47	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/25/20 17:47	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 17:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 17:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 17:47	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/25/20 17:47	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 17:47	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/25/20 17:47	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 17:47	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 17:47	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/25/20 17:47	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/25/20 17:47	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/25/20 17:47	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/25/20 17:47	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/25/20 17:47	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/25/20 17:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/25/20 17:47	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/25/20 17:47	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/25/20 17:47	91-20-3	
Styrene	ND	ug/L	1.0	1		11/25/20 17:47	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 17:47	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 17:47	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-40D	Lab ID: 92507937005	Collected: 11/22/20 13:05	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		11/25/20 17:47	127-18-4	
Toluene	ND	ug/L	1.0	1		11/25/20 17:47	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 17:47	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 17:47	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/25/20 17:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/25/20 17:47	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/25/20 17:47	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/25/20 17:47	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/25/20 17:47	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/25/20 17:47	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/25/20 17:47	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/25/20 17:47	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/25/20 17:47	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/25/20 17:47	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		11/25/20 17:47	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130	1		11/25/20 17:47	17060-07-0	
Toluene-d8 (S)	100	%	70-130	1		11/25/20 17:47	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		11/24/20 20:33	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	70-130	1		11/24/20 20:33	17060-07-0	
Toluene-d8 (S)	92	%	66-133	1		11/24/20 20:33	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-1D	Lab ID: 92507937006	Collected: 11/22/20 15:05	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/25/20 18:05	67-64-1	
Benzene	ND	ug/L	1.0	1		11/25/20 18:05	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/25/20 18:05	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/25/20 18:05	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/25/20 18:05	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/25/20 18:05	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/25/20 18:05	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		11/25/20 18:05	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/25/20 18:05	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/25/20 18:05	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/25/20 18:05	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/25/20 18:05	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/25/20 18:05	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 18:05	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 18:05	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/25/20 18:05	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/25/20 18:05	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/25/20 18:05	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/25/20 18:05	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 18:05	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 18:05	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 18:05	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/25/20 18:05	75-71-8	
1,1-Dichloroethane	3.1	ug/L	1.0	1		11/25/20 18:05	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/25/20 18:05	107-06-2	
1,1-Dichloroethene	17.6	ug/L	1.0	1		11/25/20 18:05	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 18:05	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 18:05	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 18:05	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/25/20 18:05	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 18:05	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/25/20 18:05	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 18:05	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 18:05	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/25/20 18:05	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/25/20 18:05	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/25/20 18:05	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/25/20 18:05	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/25/20 18:05	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/25/20 18:05	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/25/20 18:05	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/25/20 18:05	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/25/20 18:05	91-20-3	
Styrene	ND	ug/L	1.0	1		11/25/20 18:05	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 18:05	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 18:05	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-1D	Lab ID: 92507937006	Collected: 11/22/20 15:05	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		11/25/20 18:05	127-18-4	
Toluene	ND	ug/L	1.0	1		11/25/20 18:05	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 18:05	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 18:05	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/25/20 18:05	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/25/20 18:05	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/25/20 18:05	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/25/20 18:05	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/25/20 18:05	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/25/20 18:05	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/25/20 18:05	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/25/20 18:05	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/25/20 18:05	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/25/20 18:05	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	1		11/25/20 18:05	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130	1		11/25/20 18:05	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		11/25/20 18:05	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	16.9	ug/L	2.0	1		11/24/20 20:52	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	70-130	1		11/24/20 20:52	17060-07-0	
Toluene-d8 (S)	92	%	66-133	1		11/24/20 20:52	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-23D	Lab ID: 92507937007	Collected: 11/22/20 16:55	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/25/20 19:34	67-64-1	
Benzene	ND	ug/L	1.0	1		11/25/20 19:34	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/25/20 19:34	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/25/20 19:34	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/25/20 19:34	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/25/20 19:34	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/25/20 19:34	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		11/25/20 19:34	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/25/20 19:34	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/25/20 19:34	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/25/20 19:34	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/25/20 19:34	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/25/20 19:34	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 19:34	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 19:34	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/25/20 19:34	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/25/20 19:34	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/25/20 19:34	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/25/20 19:34	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 19:34	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 19:34	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 19:34	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/25/20 19:34	75-71-8	
1,1-Dichloroethane	26.3	ug/L	1.0	1		11/25/20 19:34	75-34-3	
1,2-Dichloroethane	1.2	ug/L	1.0	1		11/25/20 19:34	107-06-2	
1,1-Dichloroethene	106	ug/L	1.0	1		11/25/20 19:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 19:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 19:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 19:34	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/25/20 19:34	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 19:34	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/25/20 19:34	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 19:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 19:34	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/25/20 19:34	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/25/20 19:34	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/25/20 19:34	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/25/20 19:34	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/25/20 19:34	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/25/20 19:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/25/20 19:34	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/25/20 19:34	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/25/20 19:34	91-20-3	
Styrene	ND	ug/L	1.0	1		11/25/20 19:34	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 19:34	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 19:34	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-23D	Lab ID: 92507937007	Collected: 11/22/20 16:55	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		11/25/20 19:34	127-18-4	
Toluene	ND	ug/L	1.0	1		11/25/20 19:34	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 19:34	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 19:34	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/25/20 19:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/25/20 19:34	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/25/20 19:34	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/25/20 19:34	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/25/20 19:34	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/25/20 19:34	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/25/20 19:34	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/25/20 19:34	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/25/20 19:34	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/25/20 19:34	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	103	%	70-130	1		11/25/20 19:34	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130	1		11/25/20 19:34	17060-07-0	
Toluene-d8 (S)	100	%	70-130	1		11/25/20 19:34	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	96.7	ug/L	4.0	2		11/25/20 07:30	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	99	%	70-130	2		11/25/20 07:30	17060-07-0	
Toluene-d8 (S)	91	%	66-133	2		11/25/20 07:30	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: Trip Blank	Lab ID: 92507937008	Collected: 11/22/20 00:00	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/25/20 13:03	67-64-1	
Benzene	ND	ug/L	1.0	1		11/25/20 13:03	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/25/20 13:03	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/25/20 13:03	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/25/20 13:03	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/25/20 13:03	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/25/20 13:03	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		11/25/20 13:03	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/25/20 13:03	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/25/20 13:03	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/25/20 13:03	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/25/20 13:03	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/25/20 13:03	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 13:03	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 13:03	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/25/20 13:03	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/25/20 13:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/25/20 13:03	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/25/20 13:03	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 13:03	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 13:03	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 13:03	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/25/20 13:03	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/25/20 13:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/25/20 13:03	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/25/20 13:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 13:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 13:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 13:03	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/25/20 13:03	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 13:03	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/25/20 13:03	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 13:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 13:03	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/25/20 13:03	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/25/20 13:03	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/25/20 13:03	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/25/20 13:03	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/25/20 13:03	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/25/20 13:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/25/20 13:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/25/20 13:03	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/25/20 13:03	91-20-3	
Styrene	ND	ug/L	1.0	1		11/25/20 13:03	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 13:03	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 13:03	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: Trip Blank	Lab ID: 92507937008	Collected: 11/22/20 00:00	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		11/25/20 13:03	127-18-4	
Toluene	ND	ug/L	1.0	1		11/25/20 13:03	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 13:03	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 13:03	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/25/20 13:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/25/20 13:03	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/25/20 13:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/25/20 13:03	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/25/20 13:03	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/25/20 13:03	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/25/20 13:03	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/25/20 13:03	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/25/20 13:03	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/25/20 13:03	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	1		11/25/20 13:03	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130	1		11/25/20 13:03	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		11/25/20 13:03	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		11/24/20 16:58	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	70-130	1		11/24/20 16:58	17060-07-0	
Toluene-d8 (S)	92	%	66-133	1		11/24/20 16:58	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex

Pace Project No.: 92507937

Sample: MW-38R	Lab ID: 92507937009	Collected: 11/22/20 13:20	Received: 11/25/20 11:42	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D						
		Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/26/20 04:02	67-64-1	
Benzene	ND	ug/L	1.0	1		11/26/20 04:02	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/26/20 04:02	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/26/20 04:02	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/26/20 04:02	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/26/20 04:02	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/26/20 04:02	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		11/26/20 04:02	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/26/20 04:02	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/26/20 04:02	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/26/20 04:02	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/26/20 04:02	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/26/20 04:02	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/26/20 04:02	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/26/20 04:02	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/26/20 04:02	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/26/20 04:02	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/26/20 04:02	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/26/20 04:02	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 04:02	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 04:02	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 04:02	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/26/20 04:02	75-71-8	
1,1-Dichloroethane	6.5	ug/L	1.0	1		11/26/20 04:02	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/26/20 04:02	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/26/20 04:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/26/20 04:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/26/20 04:02	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/26/20 04:02	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/26/20 04:02	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/26/20 04:02	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/26/20 04:02	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/26/20 04:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/26/20 04:02	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/26/20 04:02	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/26/20 04:02	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/26/20 04:02	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/26/20 04:02	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/26/20 04:02	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/26/20 04:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/26/20 04:02	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/26/20 04:02	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/26/20 04:02	91-20-3	
Styrene	ND	ug/L	1.0	1		11/26/20 04:02	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/26/20 04:02	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/26/20 04:02	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-38R	Lab ID: 92507937009	Collected: 11/22/20 13:20	Received: 11/25/20 11:42	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		11/26/20 04:02	127-18-4	
Toluene	ND	ug/L	1.0	1		11/26/20 04:02	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/26/20 04:02	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/26/20 04:02	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/26/20 04:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/26/20 04:02	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/26/20 04:02	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/26/20 04:02	75-69-4	v1
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/26/20 04:02	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/26/20 04:02	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/26/20 04:02	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/26/20 04:02	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/26/20 04:02	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/26/20 04:02	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	105	%	70-130	1		11/26/20 04:02	460-00-4	
1,2-Dichloroethane-d4 (S)	124	%	70-130	1		11/26/20 04:02	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		11/26/20 04:02	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	40.9	ug/L	2.0	1		11/25/20 21:50	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	93	%	70-130	1		11/25/20 21:50	17060-07-0	
Toluene-d8 (S)	92	%	66-133	1		11/25/20 21:50	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-21D	Lab ID: 92507937010	Collected: 11/22/20 14:10	Received: 11/25/20 11:42	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/26/20 02:49	67-64-1	
Benzene	ND	ug/L	1.0	1		11/26/20 02:49	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/26/20 02:49	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/26/20 02:49	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/26/20 02:49	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/26/20 02:49	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/26/20 02:49	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		11/26/20 02:49	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/26/20 02:49	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/26/20 02:49	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/26/20 02:49	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/26/20 02:49	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/26/20 02:49	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/26/20 02:49	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/26/20 02:49	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/26/20 02:49	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/26/20 02:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/26/20 02:49	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/26/20 02:49	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 02:49	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 02:49	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 02:49	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/26/20 02:49	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/26/20 02:49	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/26/20 02:49	107-06-2	
1,1-Dichloroethene	7.8	ug/L	1.0	1		11/26/20 02:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/26/20 02:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/26/20 02:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/26/20 02:49	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/26/20 02:49	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/26/20 02:49	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/26/20 02:49	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/26/20 02:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/26/20 02:49	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/26/20 02:49	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/26/20 02:49	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/26/20 02:49	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/26/20 02:49	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/26/20 02:49	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/26/20 02:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/26/20 02:49	108-10-1	
Methyl-tert-butyl ether	3.0	ug/L	1.0	1		11/26/20 02:49	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/26/20 02:49	91-20-3	
Styrene	ND	ug/L	1.0	1		11/26/20 02:49	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/26/20 02:49	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/26/20 02:49	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-21D	Lab ID: 92507937010	Collected: 11/22/20 14:10	Received: 11/25/20 11:42	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Tetrachloroethene	ND	ug/L	1.0	1		11/26/20 02:49	127-18-4	
Toluene	ND	ug/L	1.0	1		11/26/20 02:49	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/26/20 02:49	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/26/20 02:49	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/26/20 02:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/26/20 02:49	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/26/20 02:49	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/26/20 02:49	75-69-4	v1
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/26/20 02:49	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/26/20 02:49	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/26/20 02:49	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/26/20 02:49	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/26/20 02:49	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/26/20 02:49	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		11/26/20 02:49	460-00-4	
1,2-Dichloroethane-d4 (S)	120	%	70-130	1		11/26/20 02:49	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		11/26/20 02:49	2037-26-5	
8260D MSV SIM		Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte						
1,4-Dioxane (p-Dioxane)	5.1	ug/L	2.0	1		11/25/20 19:53	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	95	%	70-130	1		11/25/20 19:53	17060-07-0	
Toluene-d8 (S)	91	%	66-133	1		11/25/20 19:53	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-22D	Lab ID: 92507937011	Collected: 11/22/20 15:25	Received: 11/25/20 11:42	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/26/20 03:26	67-64-1	
Benzene	ND	ug/L	1.0	1		11/26/20 03:26	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/26/20 03:26	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/26/20 03:26	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/26/20 03:26	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/26/20 03:26	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/26/20 03:26	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		11/26/20 03:26	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/26/20 03:26	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/26/20 03:26	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/26/20 03:26	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/26/20 03:26	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/26/20 03:26	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/26/20 03:26	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/26/20 03:26	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/26/20 03:26	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/26/20 03:26	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/26/20 03:26	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/26/20 03:26	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 03:26	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 03:26	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 03:26	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/26/20 03:26	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/26/20 03:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/26/20 03:26	107-06-2	
1,1-Dichloroethene	7.1	ug/L	1.0	1		11/26/20 03:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/26/20 03:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/26/20 03:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/26/20 03:26	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/26/20 03:26	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/26/20 03:26	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/26/20 03:26	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/26/20 03:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/26/20 03:26	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/26/20 03:26	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/26/20 03:26	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/26/20 03:26	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/26/20 03:26	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/26/20 03:26	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/26/20 03:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/26/20 03:26	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/26/20 03:26	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/26/20 03:26	91-20-3	
Styrene	ND	ug/L	1.0	1		11/26/20 03:26	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/26/20 03:26	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/26/20 03:26	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-22D	Lab ID: 92507937011	Collected: 11/22/20 15:25	Received: 11/25/20 11:42	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Tetrachloroethene	ND	ug/L	1.0	1		11/26/20 03:26	127-18-4	
Toluene	ND	ug/L	1.0	1		11/26/20 03:26	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/26/20 03:26	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/26/20 03:26	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/26/20 03:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/26/20 03:26	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/26/20 03:26	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/26/20 03:26	75-69-4	v1
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/26/20 03:26	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/26/20 03:26	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/26/20 03:26	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/26/20 03:26	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/26/20 03:26	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/26/20 03:26	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	1		11/26/20 03:26	460-00-4	
1,2-Dichloroethane-d4 (S)	121	%	70-130	1		11/26/20 03:26	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		11/26/20 03:26	2037-26-5	
8260D MSV SIM		Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte						
1,4-Dioxane (p-Dioxane)	4.9	ug/L	2.0	1		11/25/20 19:34	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	94	%	70-130	1		11/25/20 19:34	17060-07-0	
Toluene-d8 (S)	91	%	66-133	1		11/25/20 19:34	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex

Pace Project No.: 92507937

Sample: MW-20	Lab ID: 92507937012	Collected: 11/22/20 15:35	Received: 11/25/20 11:42	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	50.0	2		12/03/20 01:47	67-64-1	
Benzene	ND	ug/L	2.0	2		12/03/20 01:47	71-43-2	
Bromobenzene	ND	ug/L	2.0	2		12/03/20 01:47	108-86-1	
Bromochloromethane	ND	ug/L	2.0	2		12/03/20 01:47	74-97-5	
Bromodichloromethane	ND	ug/L	2.0	2		12/03/20 01:47	75-27-4	
Bromoform	ND	ug/L	2.0	2		12/03/20 01:47	75-25-2	
Bromomethane	ND	ug/L	4.0	2		12/03/20 01:47	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	10.0	2		12/03/20 01:47	78-93-3	
Carbon tetrachloride	ND	ug/L	2.0	2		12/03/20 01:47	56-23-5	
Chlorobenzene	ND	ug/L	2.0	2		12/03/20 01:47	108-90-7	
Chloroethane	ND	ug/L	2.0	2		12/03/20 01:47	75-00-3	v2
Chloroform	ND	ug/L	10.0	2		12/03/20 01:47	67-66-3	
Chloromethane	ND	ug/L	2.0	2		12/03/20 01:47	74-87-3	
2-Chlorotoluene	ND	ug/L	2.0	2		12/03/20 01:47	95-49-8	
4-Chlorotoluene	ND	ug/L	2.0	2		12/03/20 01:47	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	10.0	2		12/03/20 01:47	96-12-8	
Dibromochloromethane	ND	ug/L	2.0	2		12/03/20 01:47	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	2		12/03/20 01:47	106-93-4	
Dibromomethane	ND	ug/L	2.0	2		12/03/20 01:47	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.0	2		12/03/20 01:47	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	2		12/03/20 01:47	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	2		12/03/20 01:47	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.0	2		12/03/20 01:47	75-71-8	
1,1-Dichloroethane	205	ug/L	2.0	2		12/03/20 01:47	75-34-3	
1,2-Dichloroethane	7.5	ug/L	2.0	2		12/03/20 01:47	107-06-2	
1,1-Dichloroethene	272	ug/L	2.0	2		12/03/20 01:47	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2.0	2		12/03/20 01:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.0	2		12/03/20 01:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	2		12/03/20 01:47	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.0	2		12/03/20 01:47	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.0	2		12/03/20 01:47	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.0	2		12/03/20 01:47	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.0	2		12/03/20 01:47	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	2		12/03/20 01:47	10061-02-6	
Diisopropyl ether	ND	ug/L	2.0	2		12/03/20 01:47	108-20-3	
Ethylbenzene	ND	ug/L	2.0	2		12/03/20 01:47	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	2		12/03/20 01:47	87-68-3	
2-Hexanone	ND	ug/L	10.0	2		12/03/20 01:47	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.0	2		12/03/20 01:47	99-87-6	
Methylene Chloride	ND	ug/L	10.0	2		12/03/20 01:47	75-09-2	v2
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	2		12/03/20 01:47	108-10-1	v2
Methyl-tert-butyl ether	ND	ug/L	2.0	2		12/03/20 01:47	1634-04-4	
Naphthalene	ND	ug/L	2.0	2		12/03/20 01:47	91-20-3	
Styrene	ND	ug/L	2.0	2		12/03/20 01:47	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.0	2		12/03/20 01:47	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	2		12/03/20 01:47	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-20	Lab ID: 92507937012	Collected: 11/22/20 15:35	Received: 11/25/20 11:42	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	2.0	2		12/03/20 01:47	127-18-4	
Toluene	ND	ug/L	2.0	2		12/03/20 01:47	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	2		12/03/20 01:47	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	2		12/03/20 01:47	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	2.0	2		12/03/20 01:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	2		12/03/20 01:47	79-00-5	
Trichloroethene	ND	ug/L	2.0	2		12/03/20 01:47	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	2		12/03/20 01:47	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.0	2		12/03/20 01:47	96-18-4	
Vinyl acetate	ND	ug/L	4.0	2		12/03/20 01:47	108-05-4	
Vinyl chloride	ND	ug/L	2.0	2		12/03/20 01:47	75-01-4	
Xylene (Total)	ND	ug/L	2.0	2		12/03/20 01:47	1330-20-7	
m&p-Xylene	ND	ug/L	4.0	2		12/03/20 01:47	179601-23-1	
o-Xylene	ND	ug/L	2.0	2		12/03/20 01:47	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	2		12/03/20 01:47	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130	2		12/03/20 01:47	17060-07-0	
Toluene-d8 (S)	104	%	70-130	2		12/03/20 01:47	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	1260	ug/L	40.0	20		11/25/20 23:08	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	96	%	70-130	20		11/25/20 23:08	17060-07-0	
Toluene-d8 (S)	94	%	66-133	20		11/25/20 23:08	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-4	Lab ID: 92507937013	Collected: 11/22/20 15:50	Received: 11/25/20 11:42	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/26/20 05:15	67-64-1	
Benzene	ND	ug/L	1.0	1		11/26/20 05:15	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/26/20 05:15	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/26/20 05:15	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/26/20 05:15	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/26/20 05:15	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/26/20 05:15	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		11/26/20 05:15	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/26/20 05:15	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/26/20 05:15	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/26/20 05:15	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/26/20 05:15	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/26/20 05:15	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/26/20 05:15	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/26/20 05:15	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/26/20 05:15	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/26/20 05:15	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/26/20 05:15	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/26/20 05:15	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 05:15	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 05:15	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 05:15	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/26/20 05:15	75-71-8	
1,1-Dichloroethane	62.0	ug/L	1.0	1		11/26/20 05:15	75-34-3	
1,2-Dichloroethane	1.6	ug/L	1.0	1		11/26/20 05:15	107-06-2	
1,1-Dichloroethene	141	ug/L	1.0	1		11/26/20 05:15	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/26/20 05:15	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/26/20 05:15	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/26/20 05:15	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/26/20 05:15	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/26/20 05:15	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/26/20 05:15	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/26/20 05:15	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/26/20 05:15	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/26/20 05:15	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/26/20 05:15	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/26/20 05:15	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/26/20 05:15	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/26/20 05:15	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/26/20 05:15	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/26/20 05:15	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/26/20 05:15	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/26/20 05:15	91-20-3	
Styrene	ND	ug/L	1.0	1		11/26/20 05:15	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/26/20 05:15	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/26/20 05:15	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex

Pace Project No.: 92507937

Sample: MW-4	Lab ID: 92507937013	Collected: 11/22/20 15:50	Received: 11/25/20 11:42	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		11/26/20 05:15	127-18-4	
Toluene	ND	ug/L	1.0	1		11/26/20 05:15	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/26/20 05:15	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/26/20 05:15	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/26/20 05:15	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/26/20 05:15	79-00-5	
Trichloroethene	1.2	ug/L	1.0	1		11/26/20 05:15	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/26/20 05:15	75-69-4	v1
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/26/20 05:15	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/26/20 05:15	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/26/20 05:15	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/26/20 05:15	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/26/20 05:15	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/26/20 05:15	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	104	%	70-130	1		11/26/20 05:15	460-00-4	
1,2-Dichloroethane-d4 (S)	122	%	70-130	1		11/26/20 05:15	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		11/26/20 05:15	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	151	ug/L	5.0	2.5		12/01/20 15:26	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	105	%	70-130	2.5		12/01/20 15:26	17060-07-0	
Toluene-d8 (S)	107	%	66-133	2.5		12/01/20 15:26	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-9	Lab ID: 92507937014	Collected: 11/22/20 16:05	Received: 11/25/20 11:42	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/26/20 03:07	67-64-1	
Benzene	ND	ug/L	1.0	1		11/26/20 03:07	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/26/20 03:07	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/26/20 03:07	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/26/20 03:07	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/26/20 03:07	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/26/20 03:07	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		11/26/20 03:07	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/26/20 03:07	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/26/20 03:07	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/26/20 03:07	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/26/20 03:07	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/26/20 03:07	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/26/20 03:07	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/26/20 03:07	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/26/20 03:07	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/26/20 03:07	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/26/20 03:07	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/26/20 03:07	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 03:07	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 03:07	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 03:07	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/26/20 03:07	75-71-8	
1,1-Dichloroethane	2.5	ug/L	1.0	1		11/26/20 03:07	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/26/20 03:07	107-06-2	
1,1-Dichloroethene	56.4	ug/L	1.0	1		11/26/20 03:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/26/20 03:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/26/20 03:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/26/20 03:07	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/26/20 03:07	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/26/20 03:07	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/26/20 03:07	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/26/20 03:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/26/20 03:07	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/26/20 03:07	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/26/20 03:07	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/26/20 03:07	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/26/20 03:07	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/26/20 03:07	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/26/20 03:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/26/20 03:07	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/26/20 03:07	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/26/20 03:07	91-20-3	
Styrene	ND	ug/L	1.0	1		11/26/20 03:07	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/26/20 03:07	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/26/20 03:07	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-9	Lab ID: 92507937014	Collected: 11/22/20 16:05	Received: 11/25/20 11:42	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		11/26/20 03:07	127-18-4	
Toluene	ND	ug/L	1.0	1		11/26/20 03:07	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/26/20 03:07	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/26/20 03:07	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/26/20 03:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/26/20 03:07	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/26/20 03:07	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/26/20 03:07	75-69-4	v1
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/26/20 03:07	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/26/20 03:07	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/26/20 03:07	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/26/20 03:07	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/26/20 03:07	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/26/20 03:07	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	103	%	70-130	1		11/26/20 03:07	460-00-4	
1,2-Dichloroethane-d4 (S)	121	%	70-130	1		11/26/20 03:07	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		11/26/20 03:07	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	25.7	ug/L	2.0	1		11/25/20 20:13	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	95	%	70-130	1		11/25/20 20:13	17060-07-0	
Toluene-d8 (S)	92	%	66-133	1		11/25/20 20:13	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-16	Lab ID: 92507937015	Collected: 11/22/20 17:10	Received: 11/25/20 11:42	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	500	20		12/04/20 13:43	67-64-1	
Benzene	ND	ug/L	20.0	20		12/04/20 13:43	71-43-2	
Bromobenzene	ND	ug/L	20.0	20		12/04/20 13:43	108-86-1	
Bromochloromethane	ND	ug/L	20.0	20		12/04/20 13:43	74-97-5	
Bromodichloromethane	ND	ug/L	20.0	20		12/04/20 13:43	75-27-4	
Bromoform	ND	ug/L	20.0	20		12/04/20 13:43	75-25-2	
Bromomethane	ND	ug/L	40.0	20		12/04/20 13:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	100	20		12/04/20 13:43	78-93-3	
Carbon tetrachloride	ND	ug/L	20.0	20		12/04/20 13:43	56-23-5	
Chlorobenzene	ND	ug/L	20.0	20		12/04/20 13:43	108-90-7	
Chloroethane	ND	ug/L	20.0	20		12/04/20 13:43	75-00-3	IK,v1
Chloroform	ND	ug/L	100	20		12/04/20 13:43	67-66-3	
Chloromethane	ND	ug/L	20.0	20		12/04/20 13:43	74-87-3	IK
2-Chlorotoluene	ND	ug/L	20.0	20		12/04/20 13:43	95-49-8	
4-Chlorotoluene	ND	ug/L	20.0	20		12/04/20 13:43	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	100	20		12/04/20 13:43	96-12-8	
Dibromochloromethane	ND	ug/L	20.0	20		12/04/20 13:43	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	20.0	20		12/04/20 13:43	106-93-4	
Dibromomethane	ND	ug/L	20.0	20		12/04/20 13:43	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	20.0	20		12/04/20 13:43	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	20.0	20		12/04/20 13:43	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	20.0	20		12/04/20 13:43	106-46-7	
Dichlorodifluoromethane	ND	ug/L	20.0	20		12/04/20 13:43	75-71-8	
1,1-Dichloroethane	1560	ug/L	20.0	20		12/04/20 13:43	75-34-3	M1
1,2-Dichloroethane	ND	ug/L	20.0	20		12/04/20 13:43	107-06-2	
1,1-Dichloroethene	1130	ug/L	20.0	20		12/04/20 13:43	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	20.0	20		12/04/20 13:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	20.0	20		12/04/20 13:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	20.0	20		12/04/20 13:43	78-87-5	
1,3-Dichloropropane	ND	ug/L	20.0	20		12/04/20 13:43	142-28-9	
2,2-Dichloropropane	ND	ug/L	20.0	20		12/04/20 13:43	594-20-7	
1,1-Dichloropropene	ND	ug/L	20.0	20		12/04/20 13:43	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	20.0	20		12/04/20 13:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	20.0	20		12/04/20 13:43	10061-02-6	
Diisopropyl ether	ND	ug/L	20.0	20		12/04/20 13:43	108-20-3	
Ethylbenzene	ND	ug/L	20.0	20		12/04/20 13:43	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	20.0	20		12/04/20 13:43	87-68-3	
2-Hexanone	ND	ug/L	100	20		12/04/20 13:43	591-78-6	
p-Isopropyltoluene	ND	ug/L	20.0	20		12/04/20 13:43	99-87-6	
Methylene Chloride	ND	ug/L	100	20		12/04/20 13:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	100	20		12/04/20 13:43	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	20.0	20		12/04/20 13:43	1634-04-4	
Naphthalene	ND	ug/L	20.0	20		12/04/20 13:43	91-20-3	
Styrene	ND	ug/L	20.0	20		12/04/20 13:43	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	20.0	20		12/04/20 13:43	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	20.0	20		12/04/20 13:43	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507937

Sample: MW-16	Lab ID: 92507937015	Collected: 11/22/20 17:10	Received: 11/25/20 11:42	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	20.0	20		12/04/20 13:43	127-18-4	
Toluene	ND	ug/L	20.0	20		12/04/20 13:43	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	20.0	20		12/04/20 13:43	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	20.0	20		12/04/20 13:43	120-82-1	
1,1,1-Trichloroethane	2060	ug/L	20.0	20		12/04/20 13:43	71-55-6	M1
1,1,2-Trichloroethane	ND	ug/L	20.0	20		12/04/20 13:43	79-00-5	
Trichloroethene	ND	ug/L	20.0	20		12/04/20 13:43	79-01-6	
Trichlorofluoromethane	ND	ug/L	20.0	20		12/04/20 13:43	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	20.0	20		12/04/20 13:43	96-18-4	
Vinyl acetate	ND	ug/L	40.0	20		12/04/20 13:43	108-05-4	
Vinyl chloride	ND	ug/L	20.0	20		12/04/20 13:43	75-01-4	
Xylene (Total)	ND	ug/L	20.0	20		12/04/20 13:43	1330-20-7	
m&p-Xylene	ND	ug/L	40.0	20		12/04/20 13:43	179601-23-1	
o-Xylene	ND	ug/L	20.0	20		12/04/20 13:43	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	97	%	70-130	20		12/04/20 13:43	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	70-130	20		12/04/20 13:43	17060-07-0	
Toluene-d8 (S)	104	%	70-130	20		12/04/20 13:43	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	84.2	ug/L	2.0	1		11/25/20 20:32	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%	70-130	1		11/25/20 20:32	17060-07-0	
Toluene-d8 (S)	91	%	66-133	1		11/25/20 20:32	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

QC Batch: 582948 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92507937001, 92507937002, 92507937003, 92507937004, 92507937005, 92507937006, 92507937007, 92507937008

METHOD BLANK: 3082529 Matrix: Water
Associated Lab Samples: 92507937001, 92507937002, 92507937003, 92507937004, 92507937005, 92507937006, 92507937007, 92507937008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	11/25/20 12:10	
1,1,1-Trichloroethane	ug/L	ND	1.0	11/25/20 12:10	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	11/25/20 12:10	
1,1,2-Trichloroethane	ug/L	ND	1.0	11/25/20 12:10	
1,1-Dichloroethane	ug/L	ND	1.0	11/25/20 12:10	
1,1-Dichloroethene	ug/L	ND	1.0	11/25/20 12:10	
1,1-Dichloropropene	ug/L	ND	1.0	11/25/20 12:10	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	11/25/20 12:10	
1,2,3-Trichloropropane	ug/L	ND	1.0	11/25/20 12:10	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	11/25/20 12:10	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	11/25/20 12:10	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	11/25/20 12:10	
1,2-Dichlorobenzene	ug/L	ND	1.0	11/25/20 12:10	
1,2-Dichloroethane	ug/L	ND	1.0	11/25/20 12:10	
1,2-Dichloropropane	ug/L	ND	1.0	11/25/20 12:10	
1,3-Dichlorobenzene	ug/L	ND	1.0	11/25/20 12:10	
1,3-Dichloropropane	ug/L	ND	1.0	11/25/20 12:10	
1,4-Dichlorobenzene	ug/L	ND	1.0	11/25/20 12:10	
2,2-Dichloropropane	ug/L	ND	1.0	11/25/20 12:10	
2-Butanone (MEK)	ug/L	ND	5.0	11/25/20 12:10	
2-Chlorotoluene	ug/L	ND	1.0	11/25/20 12:10	
2-Hexanone	ug/L	ND	5.0	11/25/20 12:10	
4-Chlorotoluene	ug/L	ND	1.0	11/25/20 12:10	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	11/25/20 12:10	
Acetone	ug/L	ND	25.0	11/25/20 12:10	
Benzene	ug/L	ND	1.0	11/25/20 12:10	
Bromobenzene	ug/L	ND	1.0	11/25/20 12:10	
Bromochloromethane	ug/L	ND	1.0	11/25/20 12:10	
Bromodichloromethane	ug/L	ND	1.0	11/25/20 12:10	
Bromoform	ug/L	ND	1.0	11/25/20 12:10	
Bromomethane	ug/L	ND	2.0	11/25/20 12:10	IK
Carbon tetrachloride	ug/L	ND	1.0	11/25/20 12:10	
Chlorobenzene	ug/L	ND	1.0	11/25/20 12:10	
Chloroethane	ug/L	ND	1.0	11/25/20 12:10	
Chloroform	ug/L	ND	5.0	11/25/20 12:10	
Chloromethane	ug/L	ND	1.0	11/25/20 12:10	
cis-1,2-Dichloroethene	ug/L	ND	1.0	11/25/20 12:10	
cis-1,3-Dichloropropene	ug/L	ND	1.0	11/25/20 12:10	
Dibromochloromethane	ug/L	ND	1.0	11/25/20 12:10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

METHOD BLANK: 3082529

Matrix: Water

Associated Lab Samples: 92507937001, 92507937002, 92507937003, 92507937004, 92507937005, 92507937006, 92507937007, 92507937008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	1.0	11/25/20 12:10	
Dichlorodifluoromethane	ug/L	ND	1.0	11/25/20 12:10	
Diisopropyl ether	ug/L	ND	1.0	11/25/20 12:10	
Ethylbenzene	ug/L	ND	1.0	11/25/20 12:10	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	11/25/20 12:10	
m&p-Xylene	ug/L	ND	2.0	11/25/20 12:10	
Methyl-tert-butyl ether	ug/L	ND	1.0	11/25/20 12:10	
Methylene Chloride	ug/L	ND	5.0	11/25/20 12:10	
Naphthalene	ug/L	ND	1.0	11/25/20 12:10	
o-Xylene	ug/L	ND	1.0	11/25/20 12:10	
p-Isopropyltoluene	ug/L	ND	1.0	11/25/20 12:10	
Styrene	ug/L	ND	1.0	11/25/20 12:10	
Tetrachloroethene	ug/L	ND	1.0	11/25/20 12:10	
Toluene	ug/L	ND	1.0	11/25/20 12:10	
trans-1,2-Dichloroethene	ug/L	ND	1.0	11/25/20 12:10	
trans-1,3-Dichloropropene	ug/L	ND	1.0	11/25/20 12:10	
Trichloroethene	ug/L	ND	1.0	11/25/20 12:10	
Trichlorofluoromethane	ug/L	ND	1.0	11/25/20 12:10	
Vinyl acetate	ug/L	ND	2.0	11/25/20 12:10	
Vinyl chloride	ug/L	ND	1.0	11/25/20 12:10	
Xylene (Total)	ug/L	ND	1.0	11/25/20 12:10	
1,2-Dichloroethane-d4 (S)	%	96	70-130	11/25/20 12:10	
4-Bromofluorobenzene (S)	%	101	70-130	11/25/20 12:10	
Toluene-d8 (S)	%	100	70-130	11/25/20 12:10	

LABORATORY CONTROL SAMPLE: 3082530

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	48.0	96	70-130	
1,1,1-Trichloroethane	ug/L	50	47.8	96	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	46.5	93	70-130	
1,1,2-Trichloroethane	ug/L	50	43.6	87	70-130	
1,1-Dichloroethane	ug/L	50	48.5	97	70-130	
1,1-Dichloroethene	ug/L	50	50.9	102	70-132	
1,1-Dichloropropene	ug/L	50	49.9	100	70-131	
1,2,3-Trichlorobenzene	ug/L	50	48.9	98	70-134	
1,2,3-Trichloropropane	ug/L	50	47.8	96	70-130	
1,2,4-Trichlorobenzene	ug/L	50	50.9	102	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	48.0	96	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	48.0	96	70-130	
1,2-Dichlorobenzene	ug/L	50	49.6	99	70-130	
1,2-Dichloroethane	ug/L	50	45.5	91	70-130	
1,2-Dichloropropane	ug/L	50	48.1	96	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

LABORATORY CONTROL SAMPLE: 3082530

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3-Dichlorobenzene	ug/L	50	46.7	93	70-130	
1,3-Dichloropropane	ug/L	50	50.9	102	70-130	
1,4-Dichlorobenzene	ug/L	50	48.2	96	70-130	
2,2-Dichloropropane	ug/L	50	55.4	111	70-130	
2-Butanone (MEK)	ug/L	100	93.4	93	70-133	
2-Chlorotoluene	ug/L	50	47.6	95	70-130	
2-Hexanone	ug/L	100	88.1	88	70-130	
4-Chlorotoluene	ug/L	50	46.8	94	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	87.8	88	70-130	
Acetone	ug/L	100	94.7	95	70-144	
Benzene	ug/L	50	47.6	95	70-130	
Bromobenzene	ug/L	50	47.5	95	70-130	
Bromochloromethane	ug/L	50	48.1	96	70-130	
Bromodichloromethane	ug/L	50	43.6	87	70-130	
Bromoform	ug/L	50	49.1	98	70-131	
Bromomethane	ug/L	50	54.5	109	30-177 IK	
Carbon tetrachloride	ug/L	50	48.3	97	70-130	
Chlorobenzene	ug/L	50	47.2	94	70-130	
Chloroethane	ug/L	50	42.9	86	46-131	
Chloroform	ug/L	50	48.9	98	70-130	
Chloromethane	ug/L	50	50.2	100	49-130	
cis-1,2-Dichloroethene	ug/L	50	47.5	95	70-130	
cis-1,3-Dichloropropene	ug/L	50	49.5	99	70-130	
Dibromochloromethane	ug/L	50	51.3	103	70-130	
Dibromomethane	ug/L	50	46.5	93	70-130	
Dichlorodifluoromethane	ug/L	50	48.0	96	52-134	
Diisopropyl ether	ug/L	50	45.3	91	70-131	
Ethylbenzene	ug/L	50	47.2	94	70-130	
Hexachloro-1,3-butadiene	ug/L	50	50.6	101	70-131	
m&p-Xylene	ug/L	100	93.8	94	70-130	
Methyl-tert-butyl ether	ug/L	50	46.4	93	70-130	
Methylene Chloride	ug/L	50	45.9	92	68-130	
Naphthalene	ug/L	50	48.3	97	70-133	
o-Xylene	ug/L	50	47.1	94	70-130	
p-Isopropyltoluene	ug/L	50	48.8	98	70-130	
Styrene	ug/L	50	46.6	93	70-130	
Tetrachloroethene	ug/L	50	47.2	94	70-130	
Toluene	ug/L	50	45.9	92	70-130	
trans-1,2-Dichloroethene	ug/L	50	50.0	100	70-130	
trans-1,3-Dichloropropene	ug/L	50	50.6	101	70-130	
Trichloroethene	ug/L	50	49.0	98	70-130	
Trichlorofluoromethane	ug/L	50	48.2	96	61-130	
Vinyl acetate	ug/L	100	119	119	70-140	
Vinyl chloride	ug/L	50	48.0	96	59-142	
Xylene (Total)	ug/L	150	141	94	70-130	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

LABORATORY CONTROL SAMPLE: 3082530

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Toluene-d8 (S)	%			98	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082531 3082532

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Spike Conc.	Result	Spike Conc.	Result							
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	20.8	24.1	104	120	70-135	14	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	21.0	25.4	105	127	70-148	19	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.8	24.3	104	122	70-131	16	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	20.1	24.3	100	122	70-136	19	30	
1,1-Dichloroethane	ug/L	ND	20	20	22.9	26.7	114	134	70-147	16	30	
1,1-Dichloroethene	ug/L	ND	20	20	23.1	26.7	116	134	70-158	14	30	
1,1-Dichloropropene	ug/L	ND	20	20	23.1	27.2	115	136	70-149	16	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	20.8	22.6	104	113	68-140	9	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	20.5	25.5	102	128	67-137	22	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	22.0	24.2	110	121	70-139	10	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	19.6	23.6	98	118	69-136	18	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	21.5	26.1	108	130	70-137	19	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	21.3	23.7	106	118	70-133	11	30	
1,2-Dichloroethane	ug/L	ND	20	20	20.8	24.6	104	123	67-138	17	30	
1,2-Dichloropropane	ug/L	ND	20	20	22.3	26.9	112	135	70-138	19	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	20.4	22.2	102	111	70-133	8	30	
1,3-Dichloropropane	ug/L	ND	20	20	24.0	27.9	120	139	70-136	15	30	M1
1,4-Dichlorobenzene	ug/L	ND	20	20	20.8	22.9	104	115	70-133	10	30	
2,2-Dichloropropane	ug/L	ND	20	20	23.8	28.5	119	143	52-155	18	30	
2-Butanone (MEK)	ug/L	ND	40	40	39.9	44.6	100	112	61-147	11	30	
2-Chlorotoluene	ug/L	ND	20	20	21.2	22.3	106	111	70-141	5	30	
2-Hexanone	ug/L	ND	40	40	37.6	43.9	94	110	67-139	15	30	
4-Chlorotoluene	ug/L	ND	20	20	20.5	22.2	103	111	70-135	8	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	38.9	44.2	97	111	67-136	13	30	
Acetone	ug/L	ND	40	40	42.6	41.4	106	103	55-159	3	30	
Benzene	ug/L	ND	20	20	23.2	26.3	116	132	67-150	13	30	
Bromobenzene	ug/L	ND	20	20	20.8	22.4	104	112	70-134	7	30	
Bromochloromethane	ug/L	ND	20	20	23.1	26.5	115	133	70-146	14	30	
Bromodichloromethane	ug/L	ND	20	20	20.2	23.2	101	116	70-138	14	30	
Bromoform	ug/L	ND	20	20	19.5	24.6	97	123	57-138	23	30	
Bromomethane	ug/L	ND	20	20	29.5	35.1	147	176	10-200	17	30	IK
Carbon tetrachloride	ug/L	ND	20	20	21.4	26.0	107	130	70-147	20	30	
Chlorobenzene	ug/L	ND	20	20	21.4	24.8	107	124	70-137	15	30	
Chloroethane	ug/L	ND	20	20	22.8	36.2	114	181	51-166	45	30	M1, R1
Chloroform	ug/L	ND	20	20	22.2	26.2	111	131	70-144	16	30	
Chloromethane	ug/L	ND	20	20	22.6	337	113	1680	24-161	175	30	E, M1, R1
cis-1,2-Dichloroethene	ug/L	ND	20	20	22.3	25.5	112	128	67-148	13	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex

Pace Project No.: 92507937

Parameter	Units	3082531		3082532		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92507532001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
cis-1,3-Dichloropropene	ug/L	ND	20	20	23.4	21.5	117	108	70-142	9	30		
Dibromochloromethane	ug/L	ND	20	20	21.9	27.0	109	135	68-138	21	30		
Dibromomethane	ug/L	ND	20	20	21.4	25.1	107	126	70-134	16	30		
Dichlorodifluoromethane	ug/L	ND	20	20	20.9	25.8	104	129	43-155	21	30		
Diisopropyl ether	ug/L	ND	20	20	20.4	23.3	102	116	65-146	13	30		
Ethylbenzene	ug/L	ND	20	20	20.8	24.2	104	121	68-143	15	30		
Hexachloro-1,3-butadiene	ug/L	ND	20	20	21.2	23.7	106	119	62-151	11	30		
m&p-Xylene	ug/L	ND	40	40	41.1	47.3	103	118	53-157	14	30		
Methyl-tert-butyl ether	ug/L	ND	20	20	20.9	24.1	104	121	59-156	15	30		
Methylene Chloride	ug/L	ND	20	20	21.5	24.7	107	124	64-148	14	30		
Naphthalene	ug/L	ND	20	20	20.9	22.5	104	112	57-150	7	30		
o-Xylene	ug/L	ND	20	20	20.7	23.8	103	119	68-143	14	30		
p-Isopropyltoluene	ug/L	ND	20	20	20.4	23.6	102	118	70-141	14	30		
Styrene	ug/L	ND	20	20	21.2	24.3	106	122	70-136	13	30		
Tetrachloroethene	ug/L	ND	20	20	20.0	23.4	100	117	70-139	16	30		
Toluene	ug/L	ND	20	20	21.6	24.5	108	122	47-157	12	30		
trans-1,2-Dichloroethene	ug/L	ND	20	20	22.7	26.7	114	133	70-149	16	30		
trans-1,3-Dichloropropene	ug/L	ND	20	20	22.3	24.5	111	123	70-138	10	30		
Trichloroethene	ug/L	ND	20	20	22.0	25.7	110	128	70-149	15	30		
Trichlorofluoromethane	ug/L	ND	20	20	21.4	24.4	107	122	61-154	13	30		
Vinyl acetate	ug/L	ND	40	40	52.6	62.3	132	156	48-156	17	30		
Vinyl chloride	ug/L	ND	20	20	20.7	23.8	103	119	55-172	14	30		
Xylene (Total)	ug/L	ND	60	60	61.8	71.1	103	119	66-145	14	30		
1,2-Dichloroethane-d4 (S)	%						96	99	70-130				
4-Bromofluorobenzene (S)	%						100	101	70-130				
Toluene-d8 (S)	%						100	99	70-130				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

QC Batch: 583045 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92507937009, 92507937010, 92507937011, 92507937013, 92507937014

METHOD BLANK: 3083148 Matrix: Water
Associated Lab Samples: 92507937009, 92507937010, 92507937011, 92507937013, 92507937014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	11/26/20 00:23	
1,1,1-Trichloroethane	ug/L	ND	1.0	11/26/20 00:23	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	11/26/20 00:23	
1,1,2-Trichloroethane	ug/L	ND	1.0	11/26/20 00:23	
1,1-Dichloroethane	ug/L	ND	1.0	11/26/20 00:23	
1,1-Dichloroethene	ug/L	ND	1.0	11/26/20 00:23	
1,1-Dichloropropene	ug/L	ND	1.0	11/26/20 00:23	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	11/26/20 00:23	
1,2,3-Trichloropropane	ug/L	ND	1.0	11/26/20 00:23	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	11/26/20 00:23	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	11/26/20 00:23	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	11/26/20 00:23	
1,2-Dichlorobenzene	ug/L	ND	1.0	11/26/20 00:23	
1,2-Dichloroethane	ug/L	ND	1.0	11/26/20 00:23	
1,2-Dichloropropane	ug/L	ND	1.0	11/26/20 00:23	
1,3-Dichlorobenzene	ug/L	ND	1.0	11/26/20 00:23	
1,3-Dichloropropane	ug/L	ND	1.0	11/26/20 00:23	
1,4-Dichlorobenzene	ug/L	ND	1.0	11/26/20 00:23	
2,2-Dichloropropane	ug/L	ND	1.0	11/26/20 00:23	
2-Butanone (MEK)	ug/L	ND	5.0	11/26/20 00:23	
2-Chlorotoluene	ug/L	ND	1.0	11/26/20 00:23	
2-Hexanone	ug/L	ND	5.0	11/26/20 00:23	
4-Chlorotoluene	ug/L	ND	1.0	11/26/20 00:23	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	11/26/20 00:23	
Acetone	ug/L	ND	25.0	11/26/20 00:23	
Benzene	ug/L	ND	1.0	11/26/20 00:23	
Bromobenzene	ug/L	ND	1.0	11/26/20 00:23	
Bromochloromethane	ug/L	ND	1.0	11/26/20 00:23	
Bromodichloromethane	ug/L	ND	1.0	11/26/20 00:23	
Bromoform	ug/L	ND	1.0	11/26/20 00:23	
Bromomethane	ug/L	ND	2.0	11/26/20 00:23	v2
Carbon tetrachloride	ug/L	ND	1.0	11/26/20 00:23	
Chlorobenzene	ug/L	ND	1.0	11/26/20 00:23	
Chloroethane	ug/L	ND	1.0	11/26/20 00:23	
Chloroform	ug/L	ND	5.0	11/26/20 00:23	
Chloromethane	ug/L	ND	1.0	11/26/20 00:23	
cis-1,2-Dichloroethene	ug/L	ND	1.0	11/26/20 00:23	
cis-1,3-Dichloropropene	ug/L	ND	1.0	11/26/20 00:23	
Dibromochloromethane	ug/L	ND	1.0	11/26/20 00:23	
Dibromomethane	ug/L	ND	1.0	11/26/20 00:23	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

METHOD BLANK: 3083148 Matrix: Water
Associated Lab Samples: 92507937009, 92507937010, 92507937011, 92507937013, 92507937014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	11/26/20 00:23	
Diisopropyl ether	ug/L	ND	1.0	11/26/20 00:23	
Ethylbenzene	ug/L	ND	1.0	11/26/20 00:23	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	11/26/20 00:23	
m&p-Xylene	ug/L	ND	2.0	11/26/20 00:23	
Methyl-tert-butyl ether	ug/L	ND	1.0	11/26/20 00:23	
Methylene Chloride	ug/L	ND	5.0	11/26/20 00:23	
Naphthalene	ug/L	ND	1.0	11/26/20 00:23	
o-Xylene	ug/L	ND	1.0	11/26/20 00:23	
p-Isopropyltoluene	ug/L	ND	1.0	11/26/20 00:23	
Styrene	ug/L	ND	1.0	11/26/20 00:23	
Tetrachloroethene	ug/L	ND	1.0	11/26/20 00:23	
Toluene	ug/L	ND	1.0	11/26/20 00:23	
trans-1,2-Dichloroethene	ug/L	ND	1.0	11/26/20 00:23	
trans-1,3-Dichloropropene	ug/L	ND	1.0	11/26/20 00:23	
Trichloroethene	ug/L	ND	1.0	11/26/20 00:23	
Trichlorofluoromethane	ug/L	ND	1.0	11/26/20 00:23	v1
Vinyl acetate	ug/L	ND	2.0	11/26/20 00:23	
Vinyl chloride	ug/L	ND	1.0	11/26/20 00:23	
Xylene (Total)	ug/L	ND	1.0	11/26/20 00:23	
1,2-Dichloroethane-d4 (S)	%	118	70-130	11/26/20 00:23	
4-Bromofluorobenzene (S)	%	100	70-130	11/26/20 00:23	
Toluene-d8 (S)	%	103	70-130	11/26/20 00:23	

LABORATORY CONTROL SAMPLE: 3083149

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	55.9	112	70-130	
1,1,1-Trichloroethane	ug/L	50	60.4	121	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	51.8	104	70-130	
1,1,2-Trichloroethane	ug/L	50	53.9	108	70-130	
1,1-Dichloroethane	ug/L	50	54.5	109	70-130	
1,1-Dichloroethene	ug/L	50	62.3	125	70-132	
1,1-Dichloropropene	ug/L	50	53.4	107	70-131	
1,2,3-Trichlorobenzene	ug/L	50	57.4	115	70-134	
1,2,3-Trichloropropane	ug/L	50	53.8	108	70-130	
1,2,4-Trichlorobenzene	ug/L	50	56.7	113	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	55.9	112	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	53.9	108	70-130	
1,2-Dichlorobenzene	ug/L	50	51.1	102	70-130	
1,2-Dichloroethane	ug/L	50	59.8	120	70-130	
1,2-Dichloropropane	ug/L	50	49.8	100	70-130	
1,3-Dichlorobenzene	ug/L	50	50.5	101	70-130	
1,3-Dichloropropane	ug/L	50	51.7	103	70-130	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

LABORATORY CONTROL SAMPLE: 3083149

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	50.2	100	70-130	
2,2-Dichloropropane	ug/L	50	59.1	118	70-130	
2-Butanone (MEK)	ug/L	100	115	115	70-133	
2-Chlorotoluene	ug/L	50	50.2	100	70-130	
2-Hexanone	ug/L	100	116	116	70-130	
4-Chlorotoluene	ug/L	50	48.6	97	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	112	112	70-130	
Acetone	ug/L	100	130	130	70-144	
Benzene	ug/L	50	50.5	101	70-130	
Bromobenzene	ug/L	50	50.7	101	70-130	
Bromochloromethane	ug/L	50	51.6	103	70-130	
Bromodichloromethane	ug/L	50	51.7	103	70-130	
Bromoform	ug/L	50	54.6	109	70-131	
Bromomethane	ug/L	50	47.4	95	30-177 v3	
Carbon tetrachloride	ug/L	50	62.9	126	70-130	
Chlorobenzene	ug/L	50	50.6	101	70-130	
Chloroethane	ug/L	50	54.3	109	46-131	
Chloroform	ug/L	50	52.3	105	70-130	
Chloromethane	ug/L	50	42.7	85	49-130	
cis-1,2-Dichloroethene	ug/L	50	53.4	107	70-130	
cis-1,3-Dichloropropene	ug/L	50	55.0	110	70-130	
Dibromochloromethane	ug/L	50	56.2	112	70-130	
Dibromomethane	ug/L	50	55.6	111	70-130	
Dichlorodifluoromethane	ug/L	50	56.0	112	52-134	
Diisopropyl ether	ug/L	50	50.1	100	70-131	
Ethylbenzene	ug/L	50	50.7	101	70-130	
Hexachloro-1,3-butadiene	ug/L	50	57.7	115	70-131	
m&p-Xylene	ug/L	100	105	105	70-130	
Methyl-tert-butyl ether	ug/L	50	54.1	108	70-130	
Methylene Chloride	ug/L	50	51.7	103	68-130	
Naphthalene	ug/L	50	56.7	113	70-133	
o-Xylene	ug/L	50	50.2	100	70-130	
p-Isopropyltoluene	ug/L	50	49.9	100	70-130	
Styrene	ug/L	50	51.8	104	70-130	
Tetrachloroethene	ug/L	50	52.6	105	70-130	
Toluene	ug/L	50	51.6	103	70-130	
trans-1,2-Dichloroethene	ug/L	50	56.0	112	70-130	
trans-1,3-Dichloropropene	ug/L	50	55.8	112	70-130	
Trichloroethene	ug/L	50	56.1	112	70-130	
Trichlorofluoromethane	ug/L	50	61.5	123	61-130 v1	
Vinyl acetate	ug/L	100	123	123	70-140	
Vinyl chloride	ug/L	50	49.8	100	59-142	
Xylene (Total)	ug/L	150	155	103	70-130	
1,2-Dichloroethane-d4 (S)	%			116	70-130	
4-Bromofluorobenzene (S)	%			104	70-130	
Toluene-d8 (S)	%			100	70-130	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083150 3083151												
Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		92507939009	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
1,1,1,2-Tetrachloroethane	ug/L		20	20	19.7	20.9	98	105	70-135	6	30	
1,1,1-Trichloroethane	ug/L		20	20	22.5	22.6	113	113	70-148	0	30	
1,1,2,2-Tetrachloroethane	ug/L		20	20	15.7	27.0	78	135	70-131	53	30	M1,R1
1,1,2-Trichloroethane	ug/L		20	20	26.7	21.5	134	107	70-136	22	30	
1,1-Dichloroethane	ug/L		20	20	21.3	21.4	107	107	70-147	1	30	
1,1-Dichloroethene	ug/L		20	20	21.0	21.3	105	107	70-158	1	30	
1,1-Dichloropropene	ug/L		20	20	21.3	21.7	107	109	70-149	2	30	
1,2,3-Trichlorobenzene	ug/L		20	20	18.1	17.7	90	89	68-140	2	30	
1,2,3-Trichloropropane	ug/L		20	20	15.7	26.3	78	132	67-137	51	30	R1
1,2,4-Trichlorobenzene	ug/L		20	20	17.9	17.5	89	88	70-139	2	30	
1,2-Dibromo-3-chloropropane	ug/L		20	20	22.4	21.1	112	105	69-136	6	30	
1,2-Dibromoethane (EDB)	ug/L		20	20	21.1	21.8	106	109	70-137	3	30	
1,2-Dichlorobenzene	ug/L		20	20	20.0	19.2	100	96	70-133	4	30	
1,2-Dichloroethane	ug/L		20	20	20.3	21.2	102	106	67-138	4	30	
1,2-Dichloropropane	ug/L		20	20	26.4	20.9	132	105	70-138	23	30	
1,3-Dichlorobenzene	ug/L		20	20	19.5	21.4	97	107	70-133	9	30	
1,3-Dichloropropane	ug/L		20	20	21.4	21.7	107	109	70-136	1	30	
1,4-Dichlorobenzene	ug/L		20	20	19.8	21.2	99	106	70-133	7	30	
2,2-Dichloropropane	ug/L		20	20	14.6	15.1	73	75	52-155	3	30	
2-Butanone (MEK)	ug/L		40	40	44.6	44.3	111	111	61-147	1	30	
2-Chlorotoluene	ug/L		20	20	20.7	26.5	104	132	70-141	24	30	
2-Hexanone	ug/L		40	40	40.7	40.6	102	101	67-139	0	30	
4-Chlorotoluene	ug/L		20	20	19.6	23.8	98	119	70-135	19	30	
4-Methyl-2-pentanone (MIBK)	ug/L		40	40	51.2	41.4	128	103	67-136	21	30	
Acetone	ug/L		40	40	46.4	46.0	116	115	55-159	1	30	
Benzene	ug/L		20	20	20.9	22.4	105	112	67-150	7	30	
Bromobenzene	ug/L		20	20	21.8	25.6	109	128	70-134	16	30	
Bromochloromethane	ug/L		20	20	22.4	22.4	112	112	70-146	0	30	
Bromodichloromethane	ug/L		20	20	23.7	20.3	118	102	70-138	15	30	
Bromoform	ug/L		20	20	18.5	19.6	92	98	57-138	6	30	
Bromomethane	ug/L		20	20	23.7	23.8	119	119	10-200	0	30	
Carbon tetrachloride	ug/L		20	20	21.8	24.2	109	121	70-147	11	30	
Chlorobenzene	ug/L		20	20	21.1	21.3	106	107	70-137	1	30	
Chloroethane	ug/L		20	20	20.0	21.0	100	105	51-166	5	30	IK,v3
Chloroform	ug/L		20	20	22.4	23.2	112	116	70-144	3	30	
Chloromethane	ug/L		20	20	19.4	19.8	97	99	24-161	2	30	
cis-1,2-Dichloroethene	ug/L		20	20	21.2	22.2	106	111	67-148	5	30	
cis-1,3-Dichloropropene	ug/L		20	20	23.7	20.1	119	100	70-142	17	30	
Dibromochloromethane	ug/L		20	20	21.5	22.8	107	114	68-138	6	30	
Dibromomethane	ug/L		20	20	23.7	20.0	118	100	70-134	17	30	
Dichlorodifluoromethane	ug/L		20	20	14.7	15.2	74	76	43-155	3	30	
Diisopropyl ether	ug/L		20	20	19.8	19.9	99	100	65-146	1	30	
Ethylbenzene	ug/L		20	20	20.0	20.7	100	103	68-143	3	30	
Hexachloro-1,3-butadiene	ug/L		20	20	17.2	16.3	86	81	62-151	6	30	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

Parameter	Units	3083150		3083151		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
m&p-Xylene	ug/L		40	40	40.4	42.0	101	105	53-157	4	30		
Methyl-tert-butyl ether	ug/L		20	20	19.6	19.8	98	99	59-156	1	30		
Methylene Chloride	ug/L		20	20	20.6	20.3	103	102	64-148	1	30		
Naphthalene	ug/L		20	20	20.2	19.7	101	98	57-150	2	30		
o-Xylene	ug/L		20	20	21.5	22.0	107	110	68-143	2	30		
p-Isopropyltoluene	ug/L		20	20	19.2	21.5	96	107	70-141	11	30		
Styrene	ug/L		20	20	20.8	21.4	104	107	70-136	3	30		
Tetrachloroethene	ug/L		20	20	19.0	19.7	95	98	70-139	4	30		
Toluene	ug/L		20	20	26.5	21.8	132	109	47-157	19	30		
trans-1,2-Dichloroethene	ug/L		20	20	19.8	20.5	99	102	70-149	3	30		
trans-1,3-Dichloropropene	ug/L		20	20	24.5	21.0	123	105	70-138	15	30		
Trichloroethene	ug/L		20	20	20.8	22.2	104	111	70-149	7	30		
Trichlorofluoromethane	ug/L		20	20	20.3	20.3	101	102	61-154	0	30		
Vinyl acetate	ug/L		40	40	28.1	27.6	70	69	48-156	2	30		
Vinyl chloride	ug/L		20	20	19.4	19.4	97	97	55-172	0	30		
Xylene (Total)	ug/L		60	60	61.9	63.9	103	107	66-145	3	30		
1,2-Dichloroethane-d4 (S)	%						102	103	70-130				
4-Bromofluorobenzene (S)	%						87	107	70-130				
Toluene-d8 (S)	%						125	101	70-130				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

QC Batch: 583926	Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D	Analysis Description: 8260D MSV Low Level
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92507937012

METHOD BLANK: 3086935 Matrix: Water

Associated Lab Samples: 92507937012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	12/02/20 21:57	
1,1,1-Trichloroethane	ug/L	ND	1.0	12/02/20 21:57	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/02/20 21:57	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/02/20 21:57	
1,1-Dichloroethane	ug/L	ND	1.0	12/02/20 21:57	
1,1-Dichloroethene	ug/L	ND	1.0	12/02/20 21:57	
1,1-Dichloropropene	ug/L	ND	1.0	12/02/20 21:57	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	12/02/20 21:57	
1,2,3-Trichloropropane	ug/L	ND	1.0	12/02/20 21:57	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	12/02/20 21:57	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	12/02/20 21:57	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/02/20 21:57	
1,2-Dichlorobenzene	ug/L	ND	1.0	12/02/20 21:57	
1,2-Dichloroethane	ug/L	ND	1.0	12/02/20 21:57	
1,2-Dichloropropane	ug/L	ND	1.0	12/02/20 21:57	
1,3-Dichlorobenzene	ug/L	ND	1.0	12/02/20 21:57	
1,3-Dichloropropane	ug/L	ND	1.0	12/02/20 21:57	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/02/20 21:57	
2,2-Dichloropropane	ug/L	ND	1.0	12/02/20 21:57	
2-Butanone (MEK)	ug/L	ND	5.0	12/02/20 21:57	
2-Chlorotoluene	ug/L	ND	1.0	12/02/20 21:57	
2-Hexanone	ug/L	ND	5.0	12/02/20 21:57	
4-Chlorotoluene	ug/L	ND	1.0	12/02/20 21:57	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	12/02/20 21:57	v2
Acetone	ug/L	ND	25.0	12/02/20 21:57	
Benzene	ug/L	ND	1.0	12/02/20 21:57	
Bromobenzene	ug/L	ND	1.0	12/02/20 21:57	
Bromochloromethane	ug/L	ND	1.0	12/02/20 21:57	
Bromodichloromethane	ug/L	ND	1.0	12/02/20 21:57	
Bromoform	ug/L	ND	1.0	12/02/20 21:57	
Bromomethane	ug/L	ND	2.0	12/02/20 21:57	v2
Carbon tetrachloride	ug/L	ND	1.0	12/02/20 21:57	
Chlorobenzene	ug/L	ND	1.0	12/02/20 21:57	
Chloroethane	ug/L	ND	1.0	12/02/20 21:57	v2
Chloroform	ug/L	ND	5.0	12/02/20 21:57	
Chloromethane	ug/L	ND	1.0	12/02/20 21:57	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/02/20 21:57	
cis-1,3-Dichloropropene	ug/L	ND	1.0	12/02/20 21:57	
Dibromochloromethane	ug/L	ND	1.0	12/02/20 21:57	
Dibromomethane	ug/L	ND	1.0	12/02/20 21:57	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

METHOD BLANK: 3086935 Matrix: Water
Associated Lab Samples: 92507937012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	12/02/20 21:57	
Diisopropyl ether	ug/L	ND	1.0	12/02/20 21:57	
Ethylbenzene	ug/L	ND	1.0	12/02/20 21:57	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	12/02/20 21:57	
m&p-Xylene	ug/L	ND	2.0	12/02/20 21:57	
Methyl-tert-butyl ether	ug/L	ND	1.0	12/02/20 21:57	
Methylene Chloride	ug/L	ND	5.0	12/02/20 21:57	v2
Naphthalene	ug/L	ND	1.0	12/02/20 21:57	
o-Xylene	ug/L	ND	1.0	12/02/20 21:57	
p-Isopropyltoluene	ug/L	ND	1.0	12/02/20 21:57	
Styrene	ug/L	ND	1.0	12/02/20 21:57	
Tetrachloroethene	ug/L	ND	1.0	12/02/20 21:57	
Toluene	ug/L	ND	1.0	12/02/20 21:57	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/02/20 21:57	
trans-1,3-Dichloropropene	ug/L	ND	1.0	12/02/20 21:57	
Trichloroethene	ug/L	ND	1.0	12/02/20 21:57	
Trichlorofluoromethane	ug/L	ND	1.0	12/02/20 21:57	
Vinyl acetate	ug/L	ND	2.0	12/02/20 21:57	
Vinyl chloride	ug/L	ND	1.0	12/02/20 21:57	
Xylene (Total)	ug/L	ND	1.0	12/02/20 21:57	
1,2-Dichloroethane-d4 (S)	%	93	70-130	12/02/20 21:57	
4-Bromofluorobenzene (S)	%	100	70-130	12/02/20 21:57	
Toluene-d8 (S)	%	104	70-130	12/02/20 21:57	

LABORATORY CONTROL SAMPLE: 3086936

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	53.8	108	70-130	
1,1,1-Trichloroethane	ug/L	50	43.1	86	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	50.9	102	70-130	
1,1,2-Trichloroethane	ug/L	50	45.3	91	70-130	
1,1-Dichloroethane	ug/L	50	42.5	85	70-130	
1,1-Dichloroethene	ug/L	50	44.0	88	70-132	
1,1-Dichloropropene	ug/L	50	45.7	91	70-131	
1,2,3-Trichlorobenzene	ug/L	50	52.1	104	70-134	
1,2,3-Trichloropropane	ug/L	50	53.1	106	70-130	
1,2,4-Trichlorobenzene	ug/L	50	53.0	106	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	51.6	103	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	55.6	111	70-130	
1,2-Dichlorobenzene	ug/L	50	53.0	106	70-130	
1,2-Dichloroethane	ug/L	50	40.6	81	70-130	
1,2-Dichloropropane	ug/L	50	46.2	92	70-130	
1,3-Dichlorobenzene	ug/L	50	54.2	108	70-130	
1,3-Dichloropropane	ug/L	50	55.7	111	70-130	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

LABORATORY CONTROL SAMPLE: 3086936

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	53.4	107	70-130	
2,2-Dichloropropane	ug/L	50	42.9	86	70-130	
2-Butanone (MEK)	ug/L	100	83.8	84	70-133	
2-Chlorotoluene	ug/L	50	53.0	106	70-130	
2-Hexanone	ug/L	100	92.3	92	70-130	
4-Chlorotoluene	ug/L	50	52.1	104	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	78.0	78	70-130	v3
Acetone	ug/L	100	86.7	87	70-144	
Benzene	ug/L	50	45.5	91	70-130	
Bromobenzene	ug/L	50	52.9	106	70-130	
Bromochloromethane	ug/L	50	44.6	89	70-130	
Bromodichloromethane	ug/L	50	43.0	86	70-130	
Bromoform	ug/L	50	50.5	101	70-131	
Bromomethane	ug/L	50	37.0	74	30-177	v3
Carbon tetrachloride	ug/L	50	44.5	89	70-130	
Chlorobenzene	ug/L	50	51.6	103	70-130	
Chloroethane	ug/L	50	39.4	79	46-131	v3
Chloroform	ug/L	50	43.2	86	70-130	
Chloromethane	ug/L	50	40.2	80	49-130	
cis-1,2-Dichloroethene	ug/L	50	40.8	82	70-130	
cis-1,3-Dichloropropene	ug/L	50	48.6	97	70-130	
Dibromochloromethane	ug/L	50	56.9	114	70-130	
Dibromomethane	ug/L	50	45.3	91	70-130	
Dichlorodifluoromethane	ug/L	50	43.1	86	52-134	
Diisopropyl ether	ug/L	50	42.1	84	70-131	
Ethylbenzene	ug/L	50	50.4	101	70-130	
Hexachloro-1,3-butadiene	ug/L	50	51.6	103	70-131	
m&p-Xylene	ug/L	100	104	104	70-130	
Methyl-tert-butyl ether	ug/L	50	44.6	89	70-130	
Methylene Chloride	ug/L	50	39.5	79	68-130	v3
Naphthalene	ug/L	50	52.5	105	70-133	
o-Xylene	ug/L	50	53.7	107	70-130	
p-Isopropyltoluene	ug/L	50	53.5	107	70-130	
Styrene	ug/L	50	52.9	106	70-130	
Tetrachloroethene	ug/L	50	51.5	103	70-130	
Toluene	ug/L	50	42.3	85	70-130	
trans-1,2-Dichloroethene	ug/L	50	42.1	84	70-130	
trans-1,3-Dichloropropene	ug/L	50	46.2	92	70-130	
Trichloroethene	ug/L	50	47.4	95	70-130	
Trichlorofluoromethane	ug/L	50	41.6	83	61-130	
Vinyl acetate	ug/L	100	106	106	70-140	
Vinyl chloride	ug/L	50	40.0	80	59-142	
Xylene (Total)	ug/L	150	158	105	70-130	
1,2-Dichloroethane-d4 (S)	%			93	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			93	70-130	

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QUALITY CONTROL DATA

Project: Kop Flex

Pace Project No.: 92507937

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3086937 3086938												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92508563001 Result	Spike Conc.	Spike Conc.	MS Result							
1,1,1,2-Tetrachloroethane	ug/L	ND	4000	4000	4170	4230	104	106	70-135	1	30	
1,1,1-Trichloroethane	ug/L	ND	4000	4000	3930	3980	98	100	70-148	1	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4000	4060	4090	102	102	70-131	1	30	
1,1,2-Trichloroethane	ug/L	ND	4000	4000	3640	3690	91	92	70-136	2	30	
1,1-Dichloroethane	ug/L	ND	4000	4000	3880	3880	97	97	70-147	0	30	
1,1-Dichloroethene	ug/L	ND	4000	4000	4130	4040	103	101	70-158	2	30	
1,1-Dichloropropene	ug/L	ND	4000	4000	4040	4160	101	104	70-149	3	30	
1,2,3-Trichlorobenzene	ug/L	ND	4000	4000	4140	4500	103	112	68-140	8	30	
1,2,3-Trichloropropane	ug/L	ND	4000	4000	3800	3790	95	95	67-137	0	30	
1,2,4-Trichlorobenzene	ug/L	ND	4000	4000	4200	4530	105	113	70-139	8	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	4000	4000	4160	4260	104	107	69-136	3	30	
1,2-Dibromoethane (EDB)	ug/L	ND	4000	4000	4300	4400	107	110	70-137	2	30	
1,2-Dichlorobenzene	ug/L	ND	4000	4000	4450	4650	111	116	70-133	5	30	
1,2-Dichloroethane	ug/L	ND	4000	4000	3560	3610	89	90	67-138	1	30	
1,2-Dichloropropane	ug/L	ND	4000	4000	4060	4120	102	103	70-138	1	30	
1,3-Dichlorobenzene	ug/L	ND	4000	4000	4540	4630	113	116	70-133	2	30	
1,3-Dichloropropane	ug/L	ND	4000	4000	4480	4460	112	111	70-136	0	30	
1,4-Dichlorobenzene	ug/L	ND	4000	4000	4470	4570	112	114	70-133	2	30	
2,2-Dichloropropane	ug/L	ND	4000	4000	3260	3260	82	81	52-155	0	30	
2-Butanone (MEK)	ug/L	ND	8000	8000	7080	6810	89	85	61-147	4	30	
2-Chlorotoluene	ug/L	ND	4000	4000	4480	4560	112	114	70-141	2	30	
2-Hexanone	ug/L	ND	8000	8000	7690	7680	96	96	67-139	0	30	
4-Chlorotoluene	ug/L	ND	4000	4000	4460	4600	112	115	70-135	3	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	8000	8000	6280	6420	79	80	67-136	2	30	v3
Acetone	ug/L	ND	8000	8000	7840	7690	98	96	55-159	2	30	
Benzene	ug/L	ND	4000	4000	4070	4050	102	101	67-150	0	30	
Bromobenzene	ug/L	ND	4000	4000	4400	4600	110	115	70-134	4	30	
Bromochloromethane	ug/L	ND	4000	4000	4020	4160	100	104	70-146	4	30	
Bromodichloromethane	ug/L	ND	4000	4000	3750	3820	94	95	70-138	2	30	
Bromoform	ug/L	ND	4000	4000	3710	3760	93	94	57-138	1	30	
Bromomethane	ug/L	ND	4000	4000	3050	3540	76	88	10-200	15	30	v3
Carbon tetrachloride	ug/L	ND	4000	4000	4090	4160	102	104	70-147	2	30	
Chlorobenzene	ug/L	ND	4000	4000	4460	4490	111	112	70-137	1	30	
Chloroethane	ug/L	ND	4000	4000	4090	3950	102	99	51-166	3	30	v3
Chloroform	ug/L	ND	4000	4000	3500	3690	87	92	70-144	5	30	
Chloromethane	ug/L	ND	4000	4000	3730	3800	93	95	24-161	2	30	
cis-1,2-Dichloroethene	ug/L	3240	4000	4000	6690	6720	86	87	67-148	1	30	
cis-1,3-Dichloropropene	ug/L	ND	4000	4000	3860	3960	96	99	70-142	3	30	
Dibromochloromethane	ug/L	ND	4000	4000	4400	4470	110	112	68-138	2	30	
Dibromomethane	ug/L	ND	4000	4000	4010	4090	100	102	70-134	2	30	
Dichlorodifluoromethane	ug/L	ND	4000	4000	3710	3710	93	93	43-155	0	30	
Diisopropyl ether	ug/L	ND	4000	4000	3370	3420	84	86	65-146	1	30	
Ethylbenzene	ug/L	ND	4000	4000	4440	4450	111	111	68-143	0	30	
Hexachloro-1,3-butadiene	ug/L	ND	4000	4000	4160	4250	104	106	62-151	2	30	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

Parameter	Units	3086937		3086938		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92508563001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
m&p-Xylene	ug/L	ND	8000	8000	9260	9220	116	115	53-157	0	30		
Methyl-tert-butyl ether	ug/L	ND	4000	4000	3680	3730	92	93	59-156	1	30		
Methylene Chloride	ug/L	ND	4000	4000	3700	3780	92	94	64-148	2	30	v3	
Naphthalene	ug/L	ND	4000	4000	4200	4540	105	114	57-150	8	30		
o-Xylene	ug/L	ND	4000	4000	4660	4600	116	115	68-143	1	30		
p-Isopropyltoluene	ug/L	ND	4000	4000	4380	4620	109	116	70-141	5	30		
Styrene	ug/L	ND	4000	4000	4600	4620	115	116	70-136	0	30		
Tetrachloroethene	ug/L	ND	4000	4000	4430	4380	111	109	70-139	1	30		
Toluene	ug/L	ND	4000	4000	3860	3930	94	96	47-157	2	30		
trans-1,2-Dichloroethene	ug/L	ND	4000	4000	3920	3990	98	100	70-149	2	30		
trans-1,3-Dichloropropene	ug/L	ND	4000	4000	3530	3590	88	90	70-138	2	30		
Trichloroethene	ug/L	19800	4000	4000	24700	24700	123	124	70-149	0	30		
Trichlorofluoromethane	ug/L	ND	4000	4000	4140	3860	104	97	61-154	7	30		
Vinyl acetate	ug/L	ND	8000	8000	8360	8520	105	106	48-156	2	30		
Vinyl chloride	ug/L	477	4000	4000	4140	4210	92	93	55-172	2	30		
Xylene (Total)	ug/L	ND	12000	12000	13900	13800	116	115	66-145	1	30		
1,2-Dichloroethane-d4 (S)	%						96	101	70-130				
4-Bromofluorobenzene (S)	%						100	99	70-130				
Toluene-d8 (S)	%						95	95	70-130				

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

QC Batch: 584621	Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D	Analysis Description: 8260D MSV Low Level
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92507937015

METHOD BLANK: 3090277 Matrix: Water

Associated Lab Samples: 92507937015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	12/04/20 11:01	
1,1,1-Trichloroethane	ug/L	ND	1.0	12/04/20 11:01	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/04/20 11:01	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/04/20 11:01	
1,1-Dichloroethane	ug/L	ND	1.0	12/04/20 11:01	
1,1-Dichloroethene	ug/L	ND	1.0	12/04/20 11:01	
1,1-Dichloropropene	ug/L	ND	1.0	12/04/20 11:01	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	12/04/20 11:01	
1,2,3-Trichloropropane	ug/L	ND	1.0	12/04/20 11:01	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	12/04/20 11:01	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	12/04/20 11:01	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/04/20 11:01	
1,2-Dichlorobenzene	ug/L	ND	1.0	12/04/20 11:01	
1,2-Dichloroethane	ug/L	ND	1.0	12/04/20 11:01	
1,2-Dichloropropane	ug/L	ND	1.0	12/04/20 11:01	
1,3-Dichlorobenzene	ug/L	ND	1.0	12/04/20 11:01	
1,3-Dichloropropane	ug/L	ND	1.0	12/04/20 11:01	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/04/20 11:01	
2,2-Dichloropropane	ug/L	ND	1.0	12/04/20 11:01	
2-Butanone (MEK)	ug/L	ND	5.0	12/04/20 11:01	
2-Chlorotoluene	ug/L	ND	1.0	12/04/20 11:01	
2-Hexanone	ug/L	ND	5.0	12/04/20 11:01	
4-Chlorotoluene	ug/L	ND	1.0	12/04/20 11:01	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	12/04/20 11:01	
Acetone	ug/L	ND	25.0	12/04/20 11:01	
Benzene	ug/L	ND	1.0	12/04/20 11:01	
Bromobenzene	ug/L	ND	1.0	12/04/20 11:01	
Bromochloromethane	ug/L	ND	1.0	12/04/20 11:01	
Bromodichloromethane	ug/L	ND	1.0	12/04/20 11:01	
Bromoform	ug/L	ND	1.0	12/04/20 11:01	
Bromomethane	ug/L	ND	2.0	12/04/20 11:01	
Carbon tetrachloride	ug/L	ND	1.0	12/04/20 11:01	
Chlorobenzene	ug/L	ND	1.0	12/04/20 11:01	
Chloroethane	ug/L	ND	1.0	12/04/20 11:01	IK,v1
Chloroform	ug/L	ND	5.0	12/04/20 11:01	
Chloromethane	ug/L	ND	1.0	12/04/20 11:01	IK
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/04/20 11:01	
cis-1,3-Dichloropropene	ug/L	ND	1.0	12/04/20 11:01	
Dibromochloromethane	ug/L	ND	1.0	12/04/20 11:01	
Dibromomethane	ug/L	ND	1.0	12/04/20 11:01	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

METHOD BLANK: 3090277

Matrix: Water

Associated Lab Samples: 92507937015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	12/04/20 11:01	
Diisopropyl ether	ug/L	ND	1.0	12/04/20 11:01	
Ethylbenzene	ug/L	ND	1.0	12/04/20 11:01	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	12/04/20 11:01	
m&p-Xylene	ug/L	ND	2.0	12/04/20 11:01	
Methyl-tert-butyl ether	ug/L	ND	1.0	12/04/20 11:01	
Methylene Chloride	ug/L	ND	5.0	12/04/20 11:01	
Naphthalene	ug/L	ND	1.0	12/04/20 11:01	
o-Xylene	ug/L	ND	1.0	12/04/20 11:01	
p-Isopropyltoluene	ug/L	ND	1.0	12/04/20 11:01	
Styrene	ug/L	ND	1.0	12/04/20 11:01	
Tetrachloroethene	ug/L	ND	1.0	12/04/20 11:01	
Toluene	ug/L	ND	1.0	12/04/20 11:01	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/04/20 11:01	
trans-1,3-Dichloropropene	ug/L	ND	1.0	12/04/20 11:01	
Trichloroethene	ug/L	ND	1.0	12/04/20 11:01	
Trichlorofluoromethane	ug/L	ND	1.0	12/04/20 11:01	
Vinyl acetate	ug/L	ND	2.0	12/04/20 11:01	
Vinyl chloride	ug/L	ND	1.0	12/04/20 11:01	
Xylene (Total)	ug/L	ND	1.0	12/04/20 11:01	
1,2-Dichloroethane-d4 (S)	%	115	70-130	12/04/20 11:01	
4-Bromofluorobenzene (S)	%	97	70-130	12/04/20 11:01	
Toluene-d8 (S)	%	104	70-130	12/04/20 11:01	

LABORATORY CONTROL SAMPLE: 3090278

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	51.5	103	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	50.0	100	70-130	
1,1,2-Trichloroethane	ug/L	50	49.9	100	70-130	
1,1-Dichloroethane	ug/L	50	48.5	97	70-130	
1,1-Dichloroethene	ug/L	50	51.5	103	70-132	
1,1-Dichloropropene	ug/L	50	50.6	101	70-131	
1,2,3-Trichlorobenzene	ug/L	50	53.1	106	70-134	
1,2,3-Trichloropropane	ug/L	50	49.7	99	70-130	
1,2,4-Trichlorobenzene	ug/L	50	52.8	106	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	52.9	106	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	53.4	107	70-130	
1,2-Dichlorobenzene	ug/L	50	50.5	101	70-130	
1,2-Dichloroethane	ug/L	50	56.9	114	70-130	
1,2-Dichloropropane	ug/L	50	52.8	106	70-130	
1,3-Dichlorobenzene	ug/L	50	51.9	104	70-130	
1,3-Dichloropropane	ug/L	50	52.5	105	70-130	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

LABORATORY CONTROL SAMPLE: 3090278

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	51.6	103	70-130	
2,2-Dichloropropane	ug/L	50	50.7	101	70-130	
2-Butanone (MEK)	ug/L	100	97.6	98	70-133	
2-Chlorotoluene	ug/L	50	49.3	99	70-130	
2-Hexanone	ug/L	100	91.1	91	70-130	
4-Chlorotoluene	ug/L	50	48.6	97	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	95.1	95	70-130	
Acetone	ug/L	100	102	102	70-144	
Benzene	ug/L	50	51.4	103	70-130	
Bromobenzene	ug/L	50	50.9	102	70-130	
Bromochloromethane	ug/L	50	51.9	104	70-130	
Bromodichloromethane	ug/L	50	49.4	99	70-130	
Bromoform	ug/L	50	51.6	103	70-131	
Bromomethane	ug/L	50	54.7	109	30-177	
Carbon tetrachloride	ug/L	50	53.7	107	70-130	
Chlorobenzene	ug/L	50	52.0	104	70-130	
Chloroethane	ug/L	50	46.6	93	46-131	IK,v1
Chloroform	ug/L	50	53.8	108	70-130	
Chloromethane	ug/L	50	48.8	98	49-130	IK
cis-1,2-Dichloroethene	ug/L	50	47.8	96	70-130	
cis-1,3-Dichloropropene	ug/L	50	53.1	106	70-130	
Dibromochloromethane	ug/L	50	54.6	109	70-130	
Dibromomethane	ug/L	50	54.0	108	70-130	
Dichlorodifluoromethane	ug/L	50	47.4	95	52-134	
Diisopropyl ether	ug/L	50	45.7	91	70-131	
Ethylbenzene	ug/L	50	50.4	101	70-130	
Hexachloro-1,3-butadiene	ug/L	50	55.1	110	70-131	
m&p-Xylene	ug/L	100	100	100	70-130	
Methyl-tert-butyl ether	ug/L	50	47.4	95	70-130	
Methylene Chloride	ug/L	50	55.0	110	68-130	
Naphthalene	ug/L	50	49.1	98	70-133	
o-Xylene	ug/L	50	52.0	104	70-130	
p-Isopropyltoluene	ug/L	50	49.4	99	70-130	
Styrene	ug/L	50	50.5	101	70-130	
Tetrachloroethene	ug/L	50	54.8	110	70-130	
Toluene	ug/L	50	50.8	102	70-130	
trans-1,2-Dichloroethene	ug/L	50	50.8	102	70-130	
trans-1,3-Dichloropropene	ug/L	50	51.1	102	70-130	
Trichloroethene	ug/L	50	53.5	107	70-130	
Trichlorofluoromethane	ug/L	50	49.4	99	61-130	
Vinyl acetate	ug/L	100	103	103	70-140	
Vinyl chloride	ug/L	50	41.1	82	59-142	
Xylene (Total)	ug/L	150	152	101	70-130	
1,2-Dichloroethane-d4 (S)	%			89	70-130	
4-Bromofluorobenzene (S)	%			103	70-130	
Toluene-d8 (S)	%			99	70-130	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3090279 3090280												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92507937015 Result	Spike Conc.	Spike Conc.	MS Result							
1,1,1,2-Tetrachloroethane	ug/L	ND	400	400	427	445	107	111	70-135	4	30	
1,1,1-Trichloroethane	ug/L	2060	400	400	2330	2360	67	76	70-148	1	30	M1
1,1,2,2-Tetrachloroethane	ug/L	ND	400	400	433	425	108	106	70-131	2	30	
1,1,2-Trichloroethane	ug/L	ND	400	400	397	401	99	100	70-136	1	30	
1,1-Dichloroethane	ug/L	1560	400	400	1790	1760	58	51	70-147	2	30	M1
1,1-Dichloroethene	ug/L	1130	400	400	1620	1590	124	115	70-158	2	30	
1,1-Dichloropropene	ug/L	ND	400	400	479	478	120	119	70-149	0	30	
1,2,3-Trichlorobenzene	ug/L	ND	400	400	395	399	99	100	68-140	1	30	
1,2,3-Trichloropropane	ug/L	ND	400	400	421	416	105	104	67-137	1	30	
1,2,4-Trichlorobenzene	ug/L	ND	400	400	408	409	102	102	70-139	0	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	400	400	410	410	102	102	69-136	0	30	
1,2-Dibromoethane (EDB)	ug/L	ND	400	400	417	427	104	107	70-137	2	30	
1,2-Dichlorobenzene	ug/L	ND	400	400	423	415	106	104	70-133	2	30	
1,2-Dichloroethane	ug/L	ND	400	400	543	518	136	129	67-138	5	30	
1,2-Dichloropropane	ug/L	ND	400	400	447	454	112	114	70-138	2	30	
1,3-Dichlorobenzene	ug/L	ND	400	400	440	436	110	109	70-133	1	30	
1,3-Dichloropropane	ug/L	ND	400	400	454	446	113	111	70-136	2	30	
1,4-Dichlorobenzene	ug/L	ND	400	400	435	425	109	106	70-133	2	30	
2,2-Dichloropropane	ug/L	ND	400	400	445	461	111	115	52-155	3	30	
2-Butanone (MEK)	ug/L	ND	800	800	920	875	115	109	61-147	5	30	
2-Chlorotoluene	ug/L	ND	400	400	446	444	112	111	70-141	0	30	
2-Hexanone	ug/L	ND	800	800	831	811	104	101	67-139	3	30	
4-Chlorotoluene	ug/L	ND	400	400	441	433	110	108	70-135	2	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	800	800	831	820	104	102	67-136	1	30	
Acetone	ug/L	ND	800	800	973	939	122	117	55-159	4	30	
Benzene	ug/L	ND	400	400	444	447	111	112	67-150	1	30	
Bromobenzene	ug/L	ND	400	400	423	411	106	103	70-134	3	30	
Bromochloromethane	ug/L	ND	400	400	417	440	104	110	70-146	5	30	
Bromodichloromethane	ug/L	ND	400	400	391	402	98	100	70-138	3	30	
Bromoform	ug/L	ND	400	400	392	385	98	96	57-138	2	30	
Bromomethane	ug/L	ND	400	400	562	535	141	134	10-200	5	30	
Carbon tetrachloride	ug/L	ND	400	400	416	461	104	115	70-147	10	30	
Chlorobenzene	ug/L	ND	400	400	438	439	109	110	70-137	0	30	
Chloroethane	ug/L	ND	400	400	530	524	132	131	51-166	1	30	IK,v1
Chloroform	ug/L	ND	400	400	471	479	118	120	70-144	2	30	
Chloromethane	ug/L	ND	400	400	467	450	117	113	24-161	4	30	IK
cis-1,2-Dichloroethene	ug/L	ND	400	400	453	448	110	109	67-148	1	30	
cis-1,3-Dichloropropene	ug/L	ND	400	400	437	439	109	110	70-142	1	30	
Dibromochloromethane	ug/L	ND	400	400	417	420	104	105	68-138	1	30	
Dibromomethane	ug/L	ND	400	400	400	427	100	107	70-134	7	30	
Dichlorodifluoromethane	ug/L	ND	400	400	454	454	114	113	43-155	0	30	
Diisopropyl ether	ug/L	ND	400	400	432	424	108	106	65-146	2	30	
Ethylbenzene	ug/L	ND	400	400	447	446	112	112	68-143	0	30	
Hexachloro-1,3-butadiene	ug/L	ND	400	400	426	416	107	104	62-151	2	30	

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QUALITY CONTROL DATA

Project: Kop Flex

Pace Project No.: 92507937

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3090279 3090280												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92507937015 Result	Spike Conc.	Spike Conc.	MS Result							
m&p-Xylene	ug/L	ND	800	800	888	895	111	112	53-157	1	30	
Methyl-tert-butyl ether	ug/L	ND	400	400	399	404	100	101	59-156	1	30	
Methylene Chloride	ug/L	ND	400	400	493	486	123	122	64-148	1	30	
Naphthalene	ug/L	ND	400	400	392	385	98	96	57-150	2	30	
o-Xylene	ug/L	ND	400	400	453	450	113	113	68-143	1	30	
p-Isopropyltoluene	ug/L	ND	400	400	435	418	109	104	70-141	4	30	
Styrene	ug/L	ND	400	400	426	434	106	108	70-136	2	30	
Tetrachloroethene	ug/L	ND	400	400	452	462	113	116	70-139	2	30	
Toluene	ug/L	ND	400	400	439	441	110	110	47-157	0	30	
trans-1,2-Dichloroethene	ug/L	ND	400	400	444	465	111	116	70-149	4	30	
trans-1,3-Dichloropropene	ug/L	ND	400	400	419	422	105	106	70-138	1	30	
Trichloroethene	ug/L	ND	400	400	451	467	109	113	70-149	4	30	
Trichlorofluoromethane	ug/L	ND	400	400	469	455	117	114	61-154	3	30	
Vinyl acetate	ug/L	ND	800	800	989	957	124	120	48-156	3	30	
Vinyl chloride	ug/L	ND	400	400	392	387	98	97	55-172	1	30	
Xylene (Total)	ug/L	ND	1200	1200	1340	1350	112	112	66-145	0	30	
1,2-Dichloroethane-d4 (S)	%						111	110	70-130			
4-Bromofluorobenzene (S)	%						104	105	70-130			
Toluene-d8 (S)	%						97	99	70-130			

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

QC Batch: 582772 Analysis Method: EPA 8260D Mod.
QC Batch Method: EPA 8260D Mod. Analysis Description: 8260D MSV SIM
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92507937002, 92507937003, 92507937004, 92507937005, 92507937006, 92507937008

METHOD BLANK: 3081850 Matrix: Water
Associated Lab Samples: 92507937002, 92507937003, 92507937004, 92507937005, 92507937006, 92507937008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	11/24/20 16:00	
1,2-Dichloroethane-d4 (S)	%	97	70-130	11/24/20 16:00	
Toluene-d8 (S)	%	92	66-133	11/24/20 16:00	

LABORATORY CONTROL SAMPLE: 3081851

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	18.8	94	70-130	
1,2-Dichloroethane-d4 (S)	%			99	70-130	
Toluene-d8 (S)	%			92	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3081852 3081853

Parameter	Units	3081852		3081853		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92507939007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
1,4-Dioxane (p-Dioxane)	ug/L	ND	20	20	18.4	19.6	92	98	64-141	6	30		
1,2-Dichloroethane-d4 (S)	%							102	100	70-130		30	
Toluene-d8 (S)	%							92	91	66-133		30	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

QC Batch: 582773	Analysis Method: EPA 8260D Mod.
QC Batch Method: EPA 8260D Mod.	Analysis Description: 8260D MSV SIM
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92507937001

METHOD BLANK: 3081855 Matrix: Water

Associated Lab Samples: 92507937001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	11/24/20 16:19	
1,2-Dichloroethane-d4 (S)	%	96	70-130	11/24/20 16:19	
Toluene-d8 (S)	%	92	66-133	11/24/20 16:19	

LABORATORY CONTROL SAMPLE: 3081856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	20.5	102	70-130	
1,2-Dichloroethane-d4 (S)	%			96	70-130	
Toluene-d8 (S)	%			92	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3081857 3081858

Parameter	Units	92507939013 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	41.5	20	20	64.4	62.3	115	104	64-141	3	30	
1,2-Dichloroethane-d4 (S)	%						103	98	70-130		30	
Toluene-d8 (S)	%						93	91	66-133		30	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

QC Batch: 582774	Analysis Method: EPA 8260D Mod.
QC Batch Method: EPA 8260D Mod.	Analysis Description: 8260D MSV SIM
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92507937007

METHOD BLANK: 3081862 Matrix: Water

Associated Lab Samples: 92507937007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	11/25/20 04:16	
1,2-Dichloroethane-d4 (S)	%	99	70-130	11/25/20 04:16	
Toluene-d8 (S)	%	91	66-133	11/25/20 04:16	

LABORATORY CONTROL SAMPLE: 3081863

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	20.2	101	70-130	
1,2-Dichloroethane-d4 (S)	%			100	70-130	
Toluene-d8 (S)	%			93	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3081864 3081865

Parameter	Units	3081864		3081865		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92507748001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
1,4-Dioxane (p-Dioxane)	ug/L	ND	20	20	20.1	20.6	99	101	64-141	2	30
1,2-Dichloroethane-d4 (S)	%						98	101	70-130		30
Toluene-d8 (S)	%						93	92	66-133		30

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

QC Batch: 583085 Analysis Method: EPA 8260D Mod.
QC Batch Method: EPA 8260D Mod. Analysis Description: 8260D MSV SIM
Laboratory: Pace Analytical Services - Charlotte
Associated Lab Samples: 92507937009, 92507937010, 92507937011, 92507937012, 92507937014, 92507937015

METHOD BLANK: 3083365 Matrix: Water
Associated Lab Samples: 92507937009, 92507937010, 92507937011, 92507937012, 92507937014, 92507937015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	11/25/20 15:42	
1,2-Dichloroethane-d4 (S)	%	100	70-130	11/25/20 15:42	
Toluene-d8 (S)	%	89	66-133	11/25/20 15:42	

LABORATORY CONTROL SAMPLE: 3083366

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	22.9	115	70-130	
1,2-Dichloroethane-d4 (S)	%			100	70-130	
Toluene-d8 (S)	%			92	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083367 3083368

Parameter	Units	92508101002 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	187	80	80	289	296	128	137	64-141	2	30	
1,2-Dichloroethane-d4 (S)	%						97	96	70-130		30	
Toluene-d8 (S)	%						93	93	66-133		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

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507937

QC Batch: 583589	Analysis Method: EPA 8260D Mod.
QC Batch Method: EPA 8260D Mod.	Analysis Description: 8260D MSV SIM
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92507937013

METHOD BLANK: 3085484 Matrix: Water

Associated Lab Samples: 92507937013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	12/01/20 12:52	
1,2-Dichloroethane-d4 (S)	%	101	70-130	12/01/20 12:52	
Toluene-d8 (S)	%	97	66-133	12/01/20 12:52	

LABORATORY CONTROL SAMPLE: 3085485

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	18.3	91	70-130	
1,2-Dichloroethane-d4 (S)	%			101	70-130	
Toluene-d8 (S)	%			95	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3085486 3085487

Parameter	Units	3085486		3085487		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
1,4-Dioxane (p-Dioxane)	ug/L	151	50	50	211	206	119	110	64-141	2	30
1,2-Dichloroethane-d4 (S)	%						103	99	70-130		30
Toluene-d8 (S)	%						101	99	66-133		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

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QUALIFIERS

Project: Kop Flex
Pace Project No.: 92507937

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.

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
IK	The recalculated concentration of the calibration standard(s) did not meet method acceptance criteria; this result should be considered an estimated value.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.
v1	The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.
v2	The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.
v3	The continuing calibration verification was below the method acceptance limit. Any detection for the analyte in the associated samples may have low bias.

REPORT OF LABORATORY ANALYSIS

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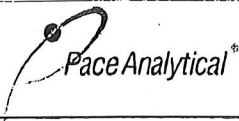
QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Kop Flex
Pace Project No.: 92507937

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92507937001	MW-43	EPA 8260D	582948		
92507937002	MW-39	EPA 8260D	582948		
92507937003	MW-18	EPA 8260D	582948		
92507937004	MW-5R	EPA 8260D	582948		
92507937005	MW-40D	EPA 8260D	582948		
92507937006	MW-1D	EPA 8260D	582948		
92507937007	MW-23D	EPA 8260D	582948		
92507937008	Trip Blank	EPA 8260D	582948		
92507937009	MW-38R	EPA 8260D	583045		
92507937010	MW-21D	EPA 8260D	583045		
92507937011	MW-22D	EPA 8260D	583045		
92507937012	MW-20	EPA 8260D	583926		
92507937013	MW-4	EPA 8260D	583045		
92507937014	MW-9	EPA 8260D	583045		
92507937015	MW-16	EPA 8260D	584621		
92507937001	MW-43	EPA 8260D Mod.	582773		
92507937002	MW-39	EPA 8260D Mod.	582772		
92507937003	MW-18	EPA 8260D Mod.	582772		
92507937004	MW-5R	EPA 8260D Mod.	582772		
92507937005	MW-40D	EPA 8260D Mod.	582772		
92507937006	MW-1D	EPA 8260D Mod.	582772		
92507937007	MW-23D	EPA 8260D Mod.	582774		
92507937008	Trip Blank	EPA 8260D Mod.	582772		
92507937009	MW-38R	EPA 8260D Mod.	583085		
92507937010	MW-21D	EPA 8260D Mod.	583085		
92507937011	MW-22D	EPA 8260D Mod.	583085		
92507937012	MW-20	EPA 8260D Mod.	583085		
92507937013	MW-4	EPA 8260D Mod.	583589		
92507937014	MW-9	EPA 8260D Mod.	583085		
92507937015	MW-16	EPA 8260D Mod.	583085		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition
Upon Receipt

Client Name:
WSP

Project #: **WO# : 92507937**



Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 11/24/20 WSP

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen? Yes No N/A

Thermometer: IR Gun ID: 92T064 Type of Ice: Wet Blue None

Cooler Temp: 1.9, 1.7 Correction Factor: Add/Subtract (°C) -0.1

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 1.8, 1.6

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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10.
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Samples MW-38R, MW-21D, MW-22D, MW-20, MW-4, MW-9, MW-10 not present.

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

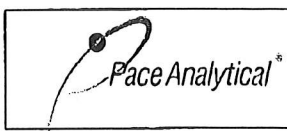
Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: AMB

Date: 11-24-2020

Project Manager SRF Review: AMB

Date: 11-24-2020



*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 bottles

Project # **WO# : 92507937**

PM: BV

Due Date: 12/03/20

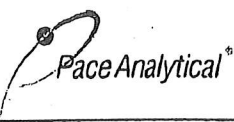
CLIENT: 92-WSP

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 Na2SO3 (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	/	/	/	/	/	/	/	/	/	/	/	/
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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).



Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: WSP

Project #:

WO#: 92507937
PM: BV Due Date: 12/03/20
CLIENT: 92-WSP

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 12/3/20

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Thermometer: IR Gun ID: 92T064 Type of Ice: Wet Blue None

Yes No N/A

Cooler Temp: 4.7 Correction Factor: Add/Subtract (°C) -0.1

Temp should be above freezing to 6°C

Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 4.6

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

Yes No

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10.
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Reed MW-38B, MW-21D, MW-22D, MW-29, MW-4, MW-8, MW-16

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____



*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Project # **W0# : 92507937**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

PM: BV Due Date: 12/03/20

**Bottom half of box is to list number of bottles

CLIENT: 92-WSP

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 Na2SO3 (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																												
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.

onsite

CHAIN-OF-CUSTODY RECORD

WSP USA Office Address 13530 Dulles Technology Dr. Ste 300 Herndon VA						Requested Analyses & Preservatives										No. 010009		WSP		
Project Name Loptlex			WSP USA Contact Name Molly Long			VOCs BALOOD 14-Dioxin BALOOD L+SIMS										Laboratory Name & Location Pace, NC				
Project Location Hanover, MD			WSP USA Contact E-mail Molly.Long@wsp.com													Laboratory Project Manager Bonnie V.				
Project Number & Task 31401545.010/3			WSP USA Contact Phone 5712325005													Requested Turn-Around-Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input type="checkbox"/> ___ HR 92507937				
Sampler(s) Name(s) Molly Long #Elliott Martynkiewicz			Sampler(s) Signature(s) <i>[Signature]</i>													Number of Containers				
Sample Identification		Matrix	Collection Start Date Time		Collection Stop Date Time		Number of Containers												Sample Comments	
C	MW-43	Air	11/21/2020	11 10	6	X	X											001		
C	MW-39			11 25	6	X	X											002		
C	MW-18			11 40	6	X	X											003		
C	MW-5R			12 50	6	X	X											004		
C	MW-40D			13 05	6	X	X											005		
B	MW-38R			13 20	6	X	X											009		
B	MW-21D			14 10	6	X	X											010		
C	MW-1D			15 05	6	X	X											006		
B	MW-22D			15 25	6	X	X											011		
B	MW-20			15 35	6	X	X											012		
B	MW-4			15 50	6	X	X											013		
B	MW-9			16 05	6	X	X											014		
C	MW-23D			16 55	6	X	X											007		
B	MW-16			17 10	6	X	X											015		
C	Tap Blank				2	X	X											008		
Relinquished By (Signature) <i>[Signature]</i>		Date	Time	Received By (Signature) <i>[Signature]</i>		Date	Time	Shipment Method FedEx		Tracking Number(s) 816045810202										
Relinquished By (Signature)		Date	Time	Received By (Signature)		Date	Time	Number of Packages 1		Custody Seal Number(s)										

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)

December 15, 2020

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

RE: Project: KopFlex
Pace Project No.: 92510474

Dear Eric Johnson:

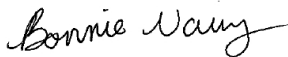
Enclosed are the analytical results for sample(s) received by the laboratory on December 09, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

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

Sincerely,



Bonnie Vang
bonnie.vang@pacelabs.com
(704)875-9092
Project Manager

Enclosures

cc: Molly Long, WSP
Pam Robertson, WSP USA



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: KopFlex
Pace Project No.: 92510474

Pace Analytical Services Charlotte

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: KopFlex
Pace Project No.: 92510474

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92510474001	DUP-120820	Water	12/08/20 12:00	12/09/20 11:07
92510474002	MW-45	Water	12/08/20 13:30	12/09/20 11:07
92510474003	MW-16D	Water	12/08/20 13:45	12/09/20 11:07
92510474004	Trip Blank	Water	12/08/20 00:00	12/09/20 11:07

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SAMPLE ANALYTE COUNT

Project: KopFlex
Pace Project No.: 92510474

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92510474001	DUP-120820	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92510474002	MW-45	EPA 8260D	GAW	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92510474003	MW-16D	EPA 8260D	GAW	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92510474004	Trip Blank	EPA 8260D	GAW	63	PASI-C

PASI-C = Pace Analytical Services - Charlotte

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ANALYTICAL RESULTS

Project: KopFlex
Pace Project No.: 92510474

Sample: DUP-120820	Lab ID: 92510474001	Collected: 12/08/20 12:00	Received: 12/09/20 11:07	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		12/14/20 14:19	67-64-1	
Benzene	ND	ug/L	1.0	1		12/14/20 14:19	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/14/20 14:19	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/14/20 14:19	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/14/20 14:19	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/14/20 14:19	75-25-2	
Bromomethane	ND	ug/L	2.0	1		12/14/20 14:19	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		12/14/20 14:19	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		12/14/20 14:19	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/14/20 14:19	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/14/20 14:19	75-00-3	
Chloroform	ND	ug/L	5.0	1		12/14/20 14:19	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/14/20 14:19	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		12/14/20 14:19	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		12/14/20 14:19	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		12/14/20 14:19	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		12/14/20 14:19	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/14/20 14:19	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		12/14/20 14:19	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/14/20 14:19	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/14/20 14:19	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/14/20 14:19	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/14/20 14:19	75-71-8	
1,1-Dichloroethane	24.4	ug/L	1.0	1		12/14/20 14:19	75-34-3	
1,2-Dichloroethane	1.7	ug/L	1.0	1		12/14/20 14:19	107-06-2	
1,1-Dichloroethene	108	ug/L	1.0	1		12/14/20 14:19	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/14/20 14:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/14/20 14:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/14/20 14:19	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/14/20 14:19	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/14/20 14:19	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/14/20 14:19	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/14/20 14:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/14/20 14:19	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		12/14/20 14:19	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		12/14/20 14:19	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		12/14/20 14:19	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		12/14/20 14:19	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/14/20 14:19	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		12/14/20 14:19	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/14/20 14:19	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/14/20 14:19	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		12/14/20 14:19	91-20-3	
Styrene	ND	ug/L	1.0	1		12/14/20 14:19	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/14/20 14:19	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/14/20 14:19	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: KopFlex
Pace Project No.: 92510474

Sample: DUP-120820	Lab ID: 92510474001	Collected: 12/08/20 12:00	Received: 12/09/20 11:07	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		12/14/20 14:19	127-18-4	
Toluene	ND	ug/L	1.0	1		12/14/20 14:19	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/14/20 14:19	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/14/20 14:19	120-82-1	
1,1,1-Trichloroethane	8.9	ug/L	1.0	1		12/14/20 14:19	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/14/20 14:19	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		12/14/20 14:19	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/14/20 14:19	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/14/20 14:19	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		12/14/20 14:19	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/14/20 14:19	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		12/14/20 14:19	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		12/14/20 14:19	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/14/20 14:19	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	1		12/14/20 14:19	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130	1		12/14/20 14:19	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		12/14/20 14:19	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	118	ug/L	5.0	2.5		12/10/20 15:39	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	70-130	2.5		12/10/20 15:39	17060-07-0	
Toluene-d8 (S)	89	%	66-133	2.5		12/10/20 15:39	2037-26-5	

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ANALYTICAL RESULTS

Project: KopFlex
Pace Project No.: 92510474

Sample: MW-45	Lab ID: 92510474002	Collected: 12/08/20 13:30	Received: 12/09/20 11:07	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		12/10/20 12:33	67-64-1	
Benzene	ND	ug/L	1.0	1		12/10/20 12:33	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/10/20 12:33	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/10/20 12:33	74-97-5	M1, R1
Bromodichloromethane	ND	ug/L	1.0	1		12/10/20 12:33	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/10/20 12:33	75-25-2	
Bromomethane	ND	ug/L	2.0	1		12/10/20 12:33	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		12/10/20 12:33	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		12/10/20 12:33	56-23-5	M1
Chlorobenzene	ND	ug/L	1.0	1		12/10/20 12:33	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/10/20 12:33	75-00-3	
Chloroform	ND	ug/L	5.0	1		12/10/20 12:33	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/10/20 12:33	74-87-3	v2
2-Chlorotoluene	ND	ug/L	1.0	1		12/10/20 12:33	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		12/10/20 12:33	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		12/10/20 12:33	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		12/10/20 12:33	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/10/20 12:33	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		12/10/20 12:33	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/10/20 12:33	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/10/20 12:33	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/10/20 12:33	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/10/20 12:33	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		12/10/20 12:33	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/10/20 12:33	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		12/10/20 12:33	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/10/20 12:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/10/20 12:33	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/10/20 12:33	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/10/20 12:33	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/10/20 12:33	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/10/20 12:33	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/10/20 12:33	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/10/20 12:33	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		12/10/20 12:33	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		12/10/20 12:33	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		12/10/20 12:33	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		12/10/20 12:33	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/10/20 12:33	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		12/10/20 12:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/10/20 12:33	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/10/20 12:33	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		12/10/20 12:33	91-20-3	
Styrene	ND	ug/L	1.0	1		12/10/20 12:33	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/10/20 12:33	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/10/20 12:33	79-34-5	

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ANALYTICAL RESULTS

Project: KopFlex
Pace Project No.: 92510474

Sample: MW-45	Lab ID: 92510474002	Collected: 12/08/20 13:30	Received: 12/09/20 11:07	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		12/10/20 12:33	127-18-4	
Toluene	ND	ug/L	1.0	1		12/10/20 12:33	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/10/20 12:33	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/10/20 12:33	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		12/10/20 12:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/10/20 12:33	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		12/10/20 12:33	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/10/20 12:33	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/10/20 12:33	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		12/10/20 12:33	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/10/20 12:33	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		12/10/20 12:33	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		12/10/20 12:33	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/10/20 12:33	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	97	%	70-130	1		12/10/20 12:33	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130	1		12/10/20 12:33	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		12/10/20 12:33	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		12/09/20 16:42	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	70-130	1		12/09/20 16:42	17060-07-0	
Toluene-d8 (S)	126	%	66-133	1		12/09/20 16:42	2037-26-5	

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ANALYTICAL RESULTS

Project: KopFlex
Pace Project No.: 92510474

Sample: MW-16D	Lab ID: 92510474003	Collected: 12/08/20 13:45	Received: 12/09/20 11:07	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		12/10/20 13:46	67-64-1	
Benzene	ND	ug/L	1.0	1		12/10/20 13:46	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/10/20 13:46	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/10/20 13:46	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/10/20 13:46	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/10/20 13:46	75-25-2	
Bromomethane	ND	ug/L	2.0	1		12/10/20 13:46	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		12/10/20 13:46	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		12/10/20 13:46	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/10/20 13:46	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/10/20 13:46	75-00-3	
Chloroform	ND	ug/L	5.0	1		12/10/20 13:46	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/10/20 13:46	74-87-3	v2
2-Chlorotoluene	ND	ug/L	1.0	1		12/10/20 13:46	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		12/10/20 13:46	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		12/10/20 13:46	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		12/10/20 13:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/10/20 13:46	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		12/10/20 13:46	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/10/20 13:46	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/10/20 13:46	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/10/20 13:46	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/10/20 13:46	75-71-8	
1,1-Dichloroethane	25.9	ug/L	1.0	1		12/10/20 13:46	75-34-3	
1,2-Dichloroethane	1.6	ug/L	1.0	1		12/10/20 13:46	107-06-2	
1,1-Dichloroethene	127	ug/L	1.0	1		12/10/20 13:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/10/20 13:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/10/20 13:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/10/20 13:46	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/10/20 13:46	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/10/20 13:46	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/10/20 13:46	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/10/20 13:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/10/20 13:46	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		12/10/20 13:46	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		12/10/20 13:46	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		12/10/20 13:46	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		12/10/20 13:46	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/10/20 13:46	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		12/10/20 13:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/10/20 13:46	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/10/20 13:46	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		12/10/20 13:46	91-20-3	
Styrene	ND	ug/L	1.0	1		12/10/20 13:46	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/10/20 13:46	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/10/20 13:46	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: KopFlex
Pace Project No.: 92510474

Sample: MW-16D	Lab ID: 92510474003	Collected: 12/08/20 13:45	Received: 12/09/20 11:07	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		12/10/20 13:46	127-18-4	
Toluene	ND	ug/L	1.0	1		12/10/20 13:46	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/10/20 13:46	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/10/20 13:46	120-82-1	
1,1,1-Trichloroethane	10.1	ug/L	1.0	1		12/10/20 13:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/10/20 13:46	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		12/10/20 13:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/10/20 13:46	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/10/20 13:46	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		12/10/20 13:46	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/10/20 13:46	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		12/10/20 13:46	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		12/10/20 13:46	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/10/20 13:46	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	1		12/10/20 13:46	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130	1		12/10/20 13:46	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1		12/10/20 13:46	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	105	ug/L	5.0	2.5		12/09/20 17:01	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	70-130	2.5		12/09/20 17:01	17060-07-0	
Toluene-d8 (S)	88	%	66-133	2.5		12/09/20 17:01	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: KopFlex
Pace Project No.: 92510474

Sample: Trip Blank	Lab ID: 92510474004	Collected: 12/08/20 00:00	Received: 12/09/20 11:07	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		12/10/20 11:20	67-64-1	
Benzene	ND	ug/L	1.0	1		12/10/20 11:20	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		12/10/20 11:20	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		12/10/20 11:20	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		12/10/20 11:20	75-27-4	
Bromoform	ND	ug/L	1.0	1		12/10/20 11:20	75-25-2	
Bromomethane	ND	ug/L	2.0	1		12/10/20 11:20	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		12/10/20 11:20	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		12/10/20 11:20	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		12/10/20 11:20	108-90-7	
Chloroethane	ND	ug/L	1.0	1		12/10/20 11:20	75-00-3	
Chloroform	ND	ug/L	5.0	1		12/10/20 11:20	67-66-3	
Chloromethane	ND	ug/L	1.0	1		12/10/20 11:20	74-87-3	v2
2-Chlorotoluene	ND	ug/L	1.0	1		12/10/20 11:20	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		12/10/20 11:20	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		12/10/20 11:20	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		12/10/20 11:20	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/10/20 11:20	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		12/10/20 11:20	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		12/10/20 11:20	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		12/10/20 11:20	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		12/10/20 11:20	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/10/20 11:20	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		12/10/20 11:20	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/10/20 11:20	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		12/10/20 11:20	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/10/20 11:20	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		12/10/20 11:20	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		12/10/20 11:20	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		12/10/20 11:20	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		12/10/20 11:20	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		12/10/20 11:20	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		12/10/20 11:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		12/10/20 11:20	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		12/10/20 11:20	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		12/10/20 11:20	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		12/10/20 11:20	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		12/10/20 11:20	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		12/10/20 11:20	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		12/10/20 11:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		12/10/20 11:20	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/10/20 11:20	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		12/10/20 11:20	91-20-3	
Styrene	ND	ug/L	1.0	1		12/10/20 11:20	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		12/10/20 11:20	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		12/10/20 11:20	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: KopFlex
Pace Project No.: 92510474

Sample: Trip Blank		Lab ID: 92510474004	Collected: 12/08/20 00:00	Received: 12/09/20 11:07	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Tetrachloroethene	ND	ug/L	1.0	1		12/10/20 11:20	127-18-4	
Toluene	ND	ug/L	1.0	1		12/10/20 11:20	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		12/10/20 11:20	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		12/10/20 11:20	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		12/10/20 11:20	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		12/10/20 11:20	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		12/10/20 11:20	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		12/10/20 11:20	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		12/10/20 11:20	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		12/10/20 11:20	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		12/10/20 11:20	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		12/10/20 11:20	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		12/10/20 11:20	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/10/20 11:20	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	1		12/10/20 11:20	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130	1		12/10/20 11:20	17060-07-0	
Toluene-d8 (S)	103	%	70-130	1		12/10/20 11:20	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: KopFlex
Pace Project No.: 92510474

QC Batch: 585820 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92510474002, 92510474003, 92510474004

METHOD BLANK: 3096653 Matrix: Water

Associated Lab Samples: 92510474002, 92510474003, 92510474004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	12/10/20 11:02	
1,1,1-Trichloroethane	ug/L	ND	1.0	12/10/20 11:02	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/10/20 11:02	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/10/20 11:02	
1,1-Dichloroethane	ug/L	ND	1.0	12/10/20 11:02	
1,1-Dichloroethene	ug/L	ND	1.0	12/10/20 11:02	
1,1-Dichloropropene	ug/L	ND	1.0	12/10/20 11:02	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	12/10/20 11:02	
1,2,3-Trichloropropane	ug/L	ND	1.0	12/10/20 11:02	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	12/10/20 11:02	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	12/10/20 11:02	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/10/20 11:02	
1,2-Dichlorobenzene	ug/L	ND	1.0	12/10/20 11:02	
1,2-Dichloroethane	ug/L	ND	1.0	12/10/20 11:02	
1,2-Dichloropropane	ug/L	ND	1.0	12/10/20 11:02	
1,3-Dichlorobenzene	ug/L	ND	1.0	12/10/20 11:02	
1,3-Dichloropropane	ug/L	ND	1.0	12/10/20 11:02	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/10/20 11:02	
2,2-Dichloropropane	ug/L	ND	1.0	12/10/20 11:02	
2-Butanone (MEK)	ug/L	ND	5.0	12/10/20 11:02	
2-Chlorotoluene	ug/L	ND	1.0	12/10/20 11:02	
2-Hexanone	ug/L	ND	5.0	12/10/20 11:02	
4-Chlorotoluene	ug/L	ND	1.0	12/10/20 11:02	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	12/10/20 11:02	
Acetone	ug/L	ND	25.0	12/10/20 11:02	
Benzene	ug/L	ND	1.0	12/10/20 11:02	
Bromobenzene	ug/L	ND	1.0	12/10/20 11:02	
Bromochloromethane	ug/L	ND	1.0	12/10/20 11:02	
Bromodichloromethane	ug/L	ND	1.0	12/10/20 11:02	
Bromoform	ug/L	ND	1.0	12/10/20 11:02	
Bromomethane	ug/L	ND	2.0	12/10/20 11:02	v2
Carbon tetrachloride	ug/L	ND	1.0	12/10/20 11:02	
Chlorobenzene	ug/L	ND	1.0	12/10/20 11:02	
Chloroethane	ug/L	ND	1.0	12/10/20 11:02	
Chloroform	ug/L	ND	5.0	12/10/20 11:02	
Chloromethane	ug/L	ND	1.0	12/10/20 11:02	v2
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/10/20 11:02	
cis-1,3-Dichloropropene	ug/L	ND	1.0	12/10/20 11:02	
Dibromochloromethane	ug/L	ND	1.0	12/10/20 11:02	
Dibromomethane	ug/L	ND	1.0	12/10/20 11:02	

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QUALITY CONTROL DATA

Project: KopFlex
Pace Project No.: 92510474

METHOD BLANK: 3096653 Matrix: Water
Associated Lab Samples: 92510474002, 92510474003, 92510474004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	12/10/20 11:02	
Diisopropyl ether	ug/L	ND	1.0	12/10/20 11:02	
Ethylbenzene	ug/L	ND	1.0	12/10/20 11:02	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	12/10/20 11:02	
m&p-Xylene	ug/L	ND	2.0	12/10/20 11:02	
Methyl-tert-butyl ether	ug/L	ND	1.0	12/10/20 11:02	
Methylene Chloride	ug/L	ND	5.0	12/10/20 11:02	
Naphthalene	ug/L	ND	1.0	12/10/20 11:02	
o-Xylene	ug/L	ND	1.0	12/10/20 11:02	
p-Isopropyltoluene	ug/L	ND	1.0	12/10/20 11:02	
Styrene	ug/L	ND	1.0	12/10/20 11:02	
Tetrachloroethene	ug/L	ND	1.0	12/10/20 11:02	
Toluene	ug/L	ND	1.0	12/10/20 11:02	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/10/20 11:02	
trans-1,3-Dichloropropene	ug/L	ND	1.0	12/10/20 11:02	
Trichloroethene	ug/L	ND	1.0	12/10/20 11:02	
Trichlorofluoromethane	ug/L	ND	1.0	12/10/20 11:02	
Vinyl acetate	ug/L	ND	2.0	12/10/20 11:02	
Vinyl chloride	ug/L	ND	1.0	12/10/20 11:02	
Xylene (Total)	ug/L	ND	1.0	12/10/20 11:02	
1,2-Dichloroethane-d4 (S)	%	97	70-130	12/10/20 11:02	
4-Bromofluorobenzene (S)	%	99	70-130	12/10/20 11:02	
Toluene-d8 (S)	%	101	70-130	12/10/20 11:02	

LABORATORY CONTROL SAMPLE: 3096654

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	51.8	104	70-130	
1,1,1-Trichloroethane	ug/L	50	47.6	95	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	50.4	101	70-130	
1,1,2-Trichloroethane	ug/L	50	50.4	101	70-130	
1,1-Dichloroethane	ug/L	50	44.8	90	70-130	
1,1-Dichloroethene	ug/L	50	47.3	95	70-132	
1,1-Dichloropropene	ug/L	50	45.3	91	70-131	
1,2,3-Trichlorobenzene	ug/L	50	52.6	105	70-134	
1,2,3-Trichloropropane	ug/L	50	48.1	96	70-130	
1,2,4-Trichlorobenzene	ug/L	50	51.8	104	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	51.2	102	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	52.4	105	70-130	
1,2-Dichlorobenzene	ug/L	50	50.3	101	70-130	
1,2-Dichloroethane	ug/L	50	47.0	94	70-130	
1,2-Dichloropropane	ug/L	50	48.0	96	70-130	
1,3-Dichlorobenzene	ug/L	50	51.2	102	70-130	
1,3-Dichloropropane	ug/L	50	51.4	103	70-130	

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QUALITY CONTROL DATA

Project: KopFlex
Pace Project No.: 92510474

LABORATORY CONTROL SAMPLE: 3096654

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	50.3	101	70-130	
2,2-Dichloropropane	ug/L	50	47.0	94	70-130	
2-Butanone (MEK)	ug/L	100	93.4	93	70-133	
2-Chlorotoluene	ug/L	50	50.9	102	70-130	
2-Hexanone	ug/L	100	102	102	70-130	
4-Chlorotoluene	ug/L	50	49.0	98	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	93.2	93	70-130	
Acetone	ug/L	100	99.6	100	70-144	
Benzene	ug/L	50	46.1	92	70-130	
Bromobenzene	ug/L	50	49.1	98	70-130	
Bromochloromethane	ug/L	50	46.6	93	70-130	
Bromodichloromethane	ug/L	50	47.5	95	70-130	
Bromoform	ug/L	50	45.7	91	70-131	
Bromomethane	ug/L	50	39.2	78	30-177 v3	
Carbon tetrachloride	ug/L	50	50.8	102	70-130	
Chlorobenzene	ug/L	50	50.5	101	70-130	
Chloroethane	ug/L	50	41.2	82	46-131	
Chloroform	ug/L	50	47.8	96	70-130	
Chloromethane	ug/L	50	29.3	59	49-130 v3	
cis-1,2-Dichloroethene	ug/L	50	44.0	88	70-130	
cis-1,3-Dichloropropene	ug/L	50	48.2	96	70-130	
Dibromochloromethane	ug/L	50	49.3	99	70-130	
Dibromomethane	ug/L	50	50.8	102	70-130	
Dichlorodifluoromethane	ug/L	50	41.1	82	52-134	
Diisopropyl ether	ug/L	50	42.0	84	70-131	
Ethylbenzene	ug/L	50	50.2	100	70-130	
Hexachloro-1,3-butadiene	ug/L	50	52.1	104	70-131	
m&p-Xylene	ug/L	100	101	101	70-130	
Methyl-tert-butyl ether	ug/L	50	46.3	93	70-130	
Methylene Chloride	ug/L	50	43.7	87	68-130	
Naphthalene	ug/L	50	54.7	109	70-133	
o-Xylene	ug/L	50	51.0	102	70-130	
p-Isopropyltoluene	ug/L	50	51.0	102	70-130	
Styrene	ug/L	50	51.3	103	70-130	
Tetrachloroethene	ug/L	50	50.8	102	70-130	
Toluene	ug/L	50	46.6	93	70-130	
trans-1,2-Dichloroethene	ug/L	50	46.4	93	70-130	
trans-1,3-Dichloropropene	ug/L	50	48.5	97	70-130	
Trichloroethene	ug/L	50	48.4	97	70-130	
Trichlorofluoromethane	ug/L	50	44.0	88	61-130	
Vinyl acetate	ug/L	100	103	103	70-140	
Vinyl chloride	ug/L	50	40.8	82	59-142	
Xylene (Total)	ug/L	150	152	101	70-130	
1,2-Dichloroethane-d4 (S)	%			91	70-130	
4-Bromofluorobenzene (S)	%			102	70-130	
Toluene-d8 (S)	%			98	70-130	

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QUALITY CONTROL DATA

Project: KopFlex
Pace Project No.: 92510474

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3096655 3096656													
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92510474002 Result	Spike Conc.	Spike Conc.	MS Conc.								
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	21.6	21.2	108	106	70-135	2	30		
1,1,1-Trichloroethane	ug/L	ND	20	20	20.1	21.1	100	105	70-148	5	30		
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	21.1	20.8	105	104	70-131	1	30		
1,1,2-Trichloroethane	ug/L	ND	20	20	21.4	21.9	107	109	70-136	2	30		
1,1-Dichloroethane	ug/L	ND	20	20	19.1	19.3	95	96	70-147	1	30		
1,1-Dichloroethene	ug/L	ND	20	20	20.5	20.9	102	104	70-158	2	30		
1,1-Dichloropropene	ug/L	ND	20	20	19.8	19.8	99	99	70-149	0	30		
1,2,3-Trichlorobenzene	ug/L	ND	20	20	21.1	22.1	105	111	68-140	5	30		
1,2,3-Trichloropropane	ug/L	ND	20	20	20.2	20.2	101	101	67-137	0	30		
1,2,4-Trichlorobenzene	ug/L	ND	20	20	21.1	22.8	106	114	70-139	8	30		
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	22.1	23.4	110	117	69-136	6	30		
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	21.0	22.0	105	110	70-137	4	30		
1,2-Dichlorobenzene	ug/L	ND	20	20	21.2	22.0	106	110	70-133	4	30		
1,2-Dichloroethane	ug/L	ND	20	20	18.7	19.3	94	97	67-138	3	30		
1,2-Dichloropropane	ug/L	ND	20	20	20.0	20.9	100	105	70-138	4	30		
1,3-Dichlorobenzene	ug/L	ND	20	20	21.7	22.1	109	110	70-133	2	30		
1,3-Dichloropropane	ug/L	ND	20	20	21.5	20.7	107	103	70-136	4	30		
1,4-Dichlorobenzene	ug/L	ND	20	20	21.2	21.8	106	109	70-133	3	30		
2,2-Dichloropropane	ug/L	ND	20	20	20.4	20.9	102	104	52-155	2	30		
2-Butanone (MEK)	ug/L	ND	40	40	42.0	39.6	105	99	61-147	6	30		
2-Chlorotoluene	ug/L	ND	20	20	22.0	22.4	110	112	70-141	2	30		
2-Hexanone	ug/L	ND	40	40	43.9	41.8	110	105	67-139	5	30		
4-Chlorotoluene	ug/L	ND	20	20	21.3	21.9	106	109	70-135	3	30		
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	38.9	38.4	97	96	67-136	1	30		
Acetone	ug/L	ND	40	40	42.1	40.7	105	102	55-159	3	30		
Benzene	ug/L	ND	20	20	20.1	20.2	100	101	67-150	1	30		
Bromobenzene	ug/L	ND	20	20	20.4	21.1	102	106	70-134	3	30		
Bromochloromethane	ug/L	ND	20	20	10.8	19.7	54	99	70-146	59	30	M1,R1,v3	
Bromodichloromethane	ug/L	ND	20	20	20.1	20.3	101	102	70-138	1	30		
Bromoform	ug/L	ND	20	20	21.7	22.8	109	114	57-138	5	30		
Bromomethane	ug/L	ND	20	20	15.9	17.2	79	86	10-200	8	30		
Carbon tetrachloride	ug/L	ND	20	20	13.2	11.4	66	57	70-147	15	30	M1	
Chlorobenzene	ug/L	ND	20	20	21.4	21.6	107	108	70-137	1	30		
Chloroethane	ug/L	ND	20	20	17.3	17.2	86	86	51-166	0	30		
Chloroform	ug/L	ND	20	20	19.8	19.8	99	99	70-144	0	30		
Chloromethane	ug/L	ND	20	20	13.1	16.5	66	82	24-161	23	30	v3	
cis-1,2-Dichloroethene	ug/L	ND	20	20	18.8	19.4	94	97	67-148	3	30		
cis-1,3-Dichloropropene	ug/L	ND	20	20	20.4	20.9	102	105	70-142	3	30		
Dibromochloromethane	ug/L	ND	20	20	21.4	22.1	107	111	68-138	3	30		
Dibromomethane	ug/L	ND	20	20	21.1	22.3	105	112	70-134	6	30		
Dichlorodifluoromethane	ug/L	ND	20	20	16.5	16.9	83	85	43-155	2	30		
Diisopropyl ether	ug/L	ND	20	20	16.5	17.2	83	86	65-146	4	30		
Ethylbenzene	ug/L	ND	20	20	21.2	21.8	106	109	68-143	3	30		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: KopFlex
Pace Project No.: 92510474

Parameter	Units	3096655		3096656		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92510474002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Hexachloro-1,3-butadiene	ug/L	ND	20	20	22.8	23.6	114	118	62-151	4	30	v1	
m&p-Xylene	ug/L	ND	40	40	42.7	42.8	107	107	53-157	0	30		
Methyl-tert-butyl ether	ug/L	ND	20	20	18.3	18.8	91	94	59-156	3	30		
Methylene Chloride	ug/L	ND	20	20	18.2	18.7	91	93	64-148	3	30		
Naphthalene	ug/L	ND	20	20	20.9	22.4	104	112	57-150	7	30		
o-Xylene	ug/L	ND	20	20	21.0	21.8	105	109	68-143	4	30		
p-Isopropyltoluene	ug/L	ND	20	20	22.3	22.9	111	114	70-141	3	30		
Styrene	ug/L	ND	20	20	21.5	21.9	108	109	70-136	2	30		
Tetrachloroethene	ug/L	ND	20	20	21.9	22.1	109	111	70-139	1	30		
Toluene	ug/L	ND	20	20	20.1	20.0	100	100	47-157	0	30		
trans-1,2-Dichloroethene	ug/L	ND	20	20	19.6	20.0	98	100	70-149	2	30		
trans-1,3-Dichloropropene	ug/L	ND	20	20	21.4	21.5	107	107	70-138	0	30		
Trichloroethene	ug/L	ND	20	20	20.9	20.9	104	105	70-149	0	30		
Trichlorofluoromethane	ug/L	ND	20	20	20.0	19.4	100	97	61-154	3	30		
Vinyl acetate	ug/L	ND	40	40	40.0	40.3	100	101	48-156	1	30		
Vinyl chloride	ug/L	ND	20	20	17.4	16.9	87	84	55-172	3	30		
Xylene (Total)	ug/L	ND	60	60	63.7	64.6	106	108	66-145	1	30		
1,2-Dichloroethane-d4 (S)	%						92	92	70-130				
4-Bromofluorobenzene (S)	%						102	101	70-130				
Toluene-d8 (S)	%						99	98	70-130				

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QUALITY CONTROL DATA

Project: KopFlex
Pace Project No.: 92510474

QC Batch: 586572	Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D	Analysis Description: 8260D MSV Low Level
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92510474001

METHOD BLANK: 3100422 Matrix: Water

Associated Lab Samples: 92510474001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	12/14/20 12:11	
1,1,1-Trichloroethane	ug/L	ND	1.0	12/14/20 12:11	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/14/20 12:11	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/14/20 12:11	
1,1-Dichloroethane	ug/L	ND	1.0	12/14/20 12:11	
1,1-Dichloroethene	ug/L	ND	1.0	12/14/20 12:11	
1,1-Dichloropropene	ug/L	ND	1.0	12/14/20 12:11	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	12/14/20 12:11	
1,2,3-Trichloropropane	ug/L	ND	1.0	12/14/20 12:11	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	12/14/20 12:11	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	12/14/20 12:11	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/14/20 12:11	
1,2-Dichlorobenzene	ug/L	ND	1.0	12/14/20 12:11	
1,2-Dichloroethane	ug/L	ND	1.0	12/14/20 12:11	
1,2-Dichloropropane	ug/L	ND	1.0	12/14/20 12:11	
1,3-Dichlorobenzene	ug/L	ND	1.0	12/14/20 12:11	
1,3-Dichloropropane	ug/L	ND	1.0	12/14/20 12:11	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/14/20 12:11	
2,2-Dichloropropane	ug/L	ND	1.0	12/14/20 12:11	
2-Butanone (MEK)	ug/L	ND	5.0	12/14/20 12:11	
2-Chlorotoluene	ug/L	ND	1.0	12/14/20 12:11	
2-Hexanone	ug/L	ND	5.0	12/14/20 12:11	
4-Chlorotoluene	ug/L	ND	1.0	12/14/20 12:11	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	12/14/20 12:11	
Acetone	ug/L	ND	25.0	12/14/20 12:11	
Benzene	ug/L	ND	1.0	12/14/20 12:11	
Bromobenzene	ug/L	ND	1.0	12/14/20 12:11	
Bromochloromethane	ug/L	ND	1.0	12/14/20 12:11	
Bromodichloromethane	ug/L	ND	1.0	12/14/20 12:11	
Bromoform	ug/L	ND	1.0	12/14/20 12:11	
Bromomethane	ug/L	ND	2.0	12/14/20 12:11	
Carbon tetrachloride	ug/L	ND	1.0	12/14/20 12:11	
Chlorobenzene	ug/L	ND	1.0	12/14/20 12:11	
Chloroethane	ug/L	ND	1.0	12/14/20 12:11	
Chloroform	ug/L	ND	5.0	12/14/20 12:11	
Chloromethane	ug/L	ND	1.0	12/14/20 12:11	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/14/20 12:11	
cis-1,3-Dichloropropene	ug/L	ND	1.0	12/14/20 12:11	
Dibromochloromethane	ug/L	ND	1.0	12/14/20 12:11	
Dibromomethane	ug/L	ND	1.0	12/14/20 12:11	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: KopFlex
Pace Project No.: 92510474

METHOD BLANK: 3100422 Matrix: Water
Associated Lab Samples: 92510474001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	12/14/20 12:11	
Diisopropyl ether	ug/L	ND	1.0	12/14/20 12:11	
Ethylbenzene	ug/L	ND	1.0	12/14/20 12:11	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	12/14/20 12:11	
m&p-Xylene	ug/L	ND	2.0	12/14/20 12:11	
Methyl-tert-butyl ether	ug/L	ND	1.0	12/14/20 12:11	
Methylene Chloride	ug/L	ND	5.0	12/14/20 12:11	
Naphthalene	ug/L	ND	1.0	12/14/20 12:11	
o-Xylene	ug/L	ND	1.0	12/14/20 12:11	
p-Isopropyltoluene	ug/L	ND	1.0	12/14/20 12:11	
Styrene	ug/L	ND	1.0	12/14/20 12:11	
Tetrachloroethene	ug/L	ND	1.0	12/14/20 12:11	
Toluene	ug/L	ND	1.0	12/14/20 12:11	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/14/20 12:11	
trans-1,3-Dichloropropene	ug/L	ND	1.0	12/14/20 12:11	
Trichloroethene	ug/L	ND	1.0	12/14/20 12:11	
Trichlorofluoromethane	ug/L	ND	1.0	12/14/20 12:11	
Vinyl acetate	ug/L	ND	2.0	12/14/20 12:11	
Vinyl chloride	ug/L	ND	1.0	12/14/20 12:11	
Xylene (Total)	ug/L	ND	1.0	12/14/20 12:11	
1,2-Dichloroethane-d4 (S)	%	99	70-130	12/14/20 12:11	
4-Bromofluorobenzene (S)	%	100	70-130	12/14/20 12:11	
Toluene-d8 (S)	%	102	70-130	12/14/20 12:11	

LABORATORY CONTROL SAMPLE: 3100423

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	49.1	98	70-130	
1,1,1-Trichloroethane	ug/L	50	44.9	90	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	49.7	99	70-130	
1,1,2-Trichloroethane	ug/L	50	47.6	95	70-130	
1,1-Dichloroethane	ug/L	50	42.3	85	70-130	
1,1-Dichloroethene	ug/L	50	45.8	92	70-132	
1,1-Dichloropropene	ug/L	50	43.0	86	70-131	
1,2,3-Trichlorobenzene	ug/L	50	53.1	106	70-134	
1,2,3-Trichloropropane	ug/L	50	47.3	95	70-130	
1,2,4-Trichlorobenzene	ug/L	50	52.7	105	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	50.4	101	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	51.0	102	70-130	
1,2-Dichlorobenzene	ug/L	50	47.3	95	70-130	
1,2-Dichloroethane	ug/L	50	43.9	88	70-130	
1,2-Dichloropropane	ug/L	50	43.7	87	70-130	
1,3-Dichlorobenzene	ug/L	50	47.5	95	70-130	
1,3-Dichloropropane	ug/L	50	49.6	99	70-130	

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QUALITY CONTROL DATA

Project: KopFlex
Pace Project No.: 92510474

LABORATORY CONTROL SAMPLE: 3100423

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	46.0	92	70-130	
2,2-Dichloropropane	ug/L	50	43.7	87	70-130	
2-Butanone (MEK)	ug/L	100	96.2	96	70-133	
2-Chlorotoluene	ug/L	50	46.8	94	70-130	
2-Hexanone	ug/L	100	103	103	70-130	
4-Chlorotoluene	ug/L	50	44.9	90	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	89.7	90	70-130	
Acetone	ug/L	100	105	105	70-144	
Benzene	ug/L	50	44.0	88	70-130	
Bromobenzene	ug/L	50	45.1	90	70-130	
Bromochloromethane	ug/L	50	43.3	87	70-130	
Bromodichloromethane	ug/L	50	45.6	91	70-130	
Bromoform	ug/L	50	52.5	105	70-131	
Bromomethane	ug/L	50	40.7	81	30-177	
Carbon tetrachloride	ug/L	50	46.5	93	70-130	
Chlorobenzene	ug/L	50	48.3	97	70-130	
Chloroethane	ug/L	50	40.1	80	46-131	
Chloroform	ug/L	50	45.5	91	70-130	
Chloromethane	ug/L	50	33.3	67	49-130	
cis-1,2-Dichloroethene	ug/L	50	41.4	83	70-130	
cis-1,3-Dichloropropene	ug/L	50	47.8	96	70-130	
Dibromochloromethane	ug/L	50	49.6	99	70-130	
Dibromomethane	ug/L	50	48.9	98	70-130	
Dichlorodifluoromethane	ug/L	50	37.9	76	52-134	
Diisopropyl ether	ug/L	50	39.6	79	70-131	
Ethylbenzene	ug/L	50	47.5	95	70-130	
Hexachloro-1,3-butadiene	ug/L	50	53.1	106	70-131	
m&p-Xylene	ug/L	100	96.1	96	70-130	
Methyl-tert-butyl ether	ug/L	50	45.6	91	70-130	
Methylene Chloride	ug/L	50	43.0	86	68-130	
Naphthalene	ug/L	50	52.8	106	70-133	
o-Xylene	ug/L	50	48.5	97	70-130	
p-Isopropyltoluene	ug/L	50	47.4	95	70-130	
Styrene	ug/L	50	48.8	98	70-130	
Tetrachloroethene	ug/L	50	49.0	98	70-130	
Toluene	ug/L	50	44.4	89	70-130	
trans-1,2-Dichloroethene	ug/L	50	45.0	90	70-130	
trans-1,3-Dichloropropene	ug/L	50	49.6	99	70-130	
Trichloroethene	ug/L	50	45.0	90	70-130	
Trichlorofluoromethane	ug/L	50	41.9	84	61-130	
Vinyl acetate	ug/L	100	96.3	96	70-140	
Vinyl chloride	ug/L	50	37.2	74	59-142	
Xylene (Total)	ug/L	150	145	96	70-130	
1,2-Dichloroethane-d4 (S)	%			94	70-130	
4-Bromofluorobenzene (S)	%			102	70-130	
Toluene-d8 (S)	%			98	70-130	

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QUALITY CONTROL DATA

Project: KopFlex
Pace Project No.: 92510474

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3100424		3100425							
Parameter	Units	92510407021	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	25.0	19.1	125	96	70-135	26	30
1,1,1-Trichloroethane	ug/L	ND	20	20	24.4	19.6	122	98	70-148	22	30
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	23.7	19.1	118	96	70-131	21	30
1,1,2-Trichloroethane	ug/L	ND	20	20	23.5	18.3	117	91	70-136	25	30
1,1-Dichloroethane	ug/L	ND	20	20	24.2	19.3	121	97	70-147	22	30
1,1-Dichloroethene	ug/L	ND	20	20	26.2	20.6	131	103	70-158	24	30
1,1-Dichloropropene	ug/L	ND	20	20	25.1	19.2	126	96	70-149	27	30
1,2,3-Trichlorobenzene	ug/L	ND	20	20	23.2	18.2	116	91	68-140	24	30
1,2,3-Trichloropropane	ug/L	ND	20	20	23.8	19.2	119	96	67-137	22	30
1,2,4-Trichlorobenzene	ug/L	ND	20	20	24.0	19.2	120	96	70-139	22	30
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	24.6	19.3	123	97	69-136	24	30
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	24.2	19.2	121	96	70-137	23	30
1,2-Dichlorobenzene	ug/L	ND	20	20	24.5	18.6	122	93	70-133	27	30
1,2-Dichloroethane	ug/L	ND	20	20	23.3	17.9	117	90	67-138	26	30
1,2-Dichloropropane	ug/L	ND	20	20	25.5	20.0	128	100	70-138	24	30
1,3-Dichlorobenzene	ug/L	ND	20	20	24.4	18.8	122	94	70-133	26	30
1,3-Dichloropropane	ug/L	ND	20	20	24.0	18.6	120	93	70-136	25	30
1,4-Dichlorobenzene	ug/L	ND	20	20	23.2	18.8	116	94	70-133	21	30
2,2-Dichloropropane	ug/L	ND	20	20	29.3	23.2	147	116	52-155	23	30
2-Butanone (MEK)	ug/L	ND	40	40	48.2	36.6	120	92	61-147	27	30
2-Chlorotoluene	ug/L	ND	20	20	25.4	21.0	127	105	70-141	19	30
2-Hexanone	ug/L	ND	40	40	49.9	38.8	125	97	67-139	25	30
4-Chlorotoluene	ug/L	ND	20	20	24.3	19.4	121	97	70-135	22	30
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	48.5	37.1	121	93	67-136	27	30
Acetone	ug/L	ND	40	40	50.6	37.5	127	94	55-159	30	30
Benzene	ug/L	ND	20	20	24.1	19.0	121	95	67-150	24	30
Bromobenzene	ug/L	ND	20	20	23.7	18.8	119	94	70-134	23	30
Bromochloromethane	ug/L	ND	20	20	26.0	21.0	130	105	70-146	21	30
Bromodichloromethane	ug/L	ND	20	20	23.2	18.0	116	90	70-138	26	30
Bromoform	ug/L	ND	20	20	22.4	17.3	112	86	57-138	26	30
Bromomethane	ug/L	ND	20	20	28.3	22.2	141	111	10-200	24	30 IK
Carbon tetrachloride	ug/L	ND	20	20	25.1	19.9	125	100	70-147	23	30
Chlorobenzene	ug/L	ND	20	20	24.3	19.7	121	98	70-137	21	30
Chloroethane	ug/L	ND	20	20	22.2	17.1	111	85	51-166	26	30
Chloroform	ug/L	ND	20	20	24.7	20.0	124	100	70-144	21	30
Chloromethane	ug/L	ND	20	20	24.7	19.6	123	98	24-161	23	30
cis-1,2-Dichloroethene	ug/L	ND	20	20	23.7	18.7	118	93	67-148	24	30
cis-1,3-Dichloropropene	ug/L	ND	20	20	25.2	19.2	126	96	70-142	27	30
Dibromochloromethane	ug/L	ND	20	20	24.4	19.5	122	98	68-138	22	30
Dibromomethane	ug/L	ND	20	20	24.4	18.7	122	94	70-134	26	30
Dichlorodifluoromethane	ug/L	ND	20	20	20.6	16.7	103	84	43-155	21	30
Diisopropyl ether	ug/L	ND	20	20	22.6	18.1	113	90	65-146	22	30
Ethylbenzene	ug/L	ND	20	20	23.9	18.8	119	94	68-143	24	30
Hexachloro-1,3-butadiene	ug/L	ND	20	20	24.8	20.2	124	101	62-151	20	30

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: KopFlex
Pace Project No.: 92510474

Parameter	Units	3100424		3100425		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92510407021 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
m&p-Xylene	ug/L	ND	40	40	48.2	38.6	120	97	53-157	22	30		
Methyl-tert-butyl ether	ug/L	ND	20	20	22.7	18.0	113	90	59-156	23	30		
Methylene Chloride	ug/L	ND	20	20	23.0	19.2	115	96	64-148	18	30		
Naphthalene	ug/L	ND	20	20	23.6	18.7	118	93	57-150	23	30		
o-Xylene	ug/L	ND	20	20	23.6	18.8	118	94	68-143	23	30		
p-Isopropyltoluene	ug/L	ND	20	20	24.9	19.6	125	98	70-141	24	30		
Styrene	ug/L	ND	20	20	23.4	17.9	117	89	70-136	27	30		
Tetrachloroethene	ug/L	1.4	20	20	24.7	20.7	116	96	70-139	18	30		
Toluene	ug/L	ND	20	20	24.4	19.3	122	97	47-157	23	30		
trans-1,2-Dichloroethene	ug/L	ND	20	20	24.5	19.0	122	95	70-149	25	30		
trans-1,3-Dichloropropene	ug/L	ND	20	20	25.6	19.5	128	97	70-138	27	30		
Trichloroethene	ug/L	ND	20	20	24.0	18.8	120	94	70-149	25	30		
Trichlorofluoromethane	ug/L	ND	20	20	23.3	18.6	117	93	61-154	22	30		
Vinyl acetate	ug/L	ND	40	40	52.7	41.1	132	103	48-156	25	30		
Vinyl chloride	ug/L	ND	20	20	22.4	17.7	112	89	55-172	23	30		
Xylene (Total)	ug/L	ND	60	60	71.8	57.4	120	96	66-145	22	30		
1,2-Dichloroethane-d4 (S)	%							98	70-130				
4-Bromofluorobenzene (S)	%							102	70-130				
Toluene-d8 (S)	%							100	70-130				

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QUALITY CONTROL DATA

Project: KopFlex
Pace Project No.: 92510474

QC Batch: 585780	Analysis Method: EPA 8260D Mod.
QC Batch Method: EPA 8260D Mod.	Analysis Description: 8260D MSV SIM
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92510474002, 92510474003

METHOD BLANK: 3096253 Matrix: Water

Associated Lab Samples: 92510474002, 92510474003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	12/09/20 15:24	
1,2-Dichloroethane-d4 (S)	%	99	70-130	12/09/20 15:24	
Toluene-d8 (S)	%	77	66-133	12/09/20 15:24	

LABORATORY CONTROL SAMPLE: 3096254

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	21.7	108	70-130	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
Toluene-d8 (S)	%			122	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3097528 3097529

Parameter	Units	92510474002 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	20.1	20.6	99	101	64-141	2	30	
1,2-Dichloroethane-d4 (S)	%						96	98	70-130		30	
Toluene-d8 (S)	%						97	73	66-133		30	

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QUALITY CONTROL DATA

Project: KopFlex
Pace Project No.: 92510474

QC Batch: 586140	Analysis Method: EPA 8260D Mod.
QC Batch Method: EPA 8260D Mod.	Analysis Description: 8260D MSV SIM
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92510474001

METHOD BLANK: 3098144 Matrix: Water

Associated Lab Samples: 92510474001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	12/10/20 15:20	
1,2-Dichloroethane-d4 (S)	%	99	70-130	12/10/20 15:20	
Toluene-d8 (S)	%	100	66-133	12/10/20 15:20	

LABORATORY CONTROL SAMPLE: 3098145

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	19.9	100	70-130	
1,2-Dichloroethane-d4 (S)	%			94	70-130	
Toluene-d8 (S)	%			75	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3098146 3098147

Parameter	Units	92510474001 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	118	50	50	182	173	129	111	64-141	5	30	
1,2-Dichloroethane-d4 (S)	%						96	98	70-130		30	
Toluene-d8 (S)	%						74	111	66-133		30	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: KopFlex
Pace Project No.: 92510474

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.

ANALYTE QUALIFIERS

- | | |
|----|---|
| IK | The recalculated concentration of the calibration standard(s) did not meet method acceptance criteria; this result should be considered an estimated value. |
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |
| R1 | RPD value was outside control limits. |
| v1 | The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias. |
| v2 | The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard. |
| v3 | The continuing calibration verification was below the method acceptance limit. Any detection for the analyte in the associated samples may have low bias. |

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: KopFlex
Pace Project No.: 92510474

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92510474001	DUP-120820	EPA 8260D	586572		
92510474002	MW-45	EPA 8260D	585820		
92510474003	MW-16D	EPA 8260D	585820		
92510474004	Trip Blank	EPA 8260D	585820		
92510474001	DUP-120820	EPA 8260D Mod.	586140		
92510474002	MW-45	EPA 8260D Mod.	585780		
92510474003	MW-16D	EPA 8260D Mod.	585780		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

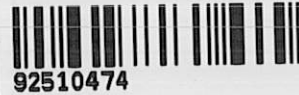
Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name:

KopFlex

Project #: **WO#: 92510474**



Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 2T
12/9/20
 Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap Bubble Bags None Other
 Thermometer: IR Gun ID: 92T064 Type of Ice: Wet Blue None

Cooler Temp: 0.9 Correction Factor: Add/Subtract (°C) -0.1

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 0.8

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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Includes Date/Time/ID/Analysis Matrix: <u>WT</u>	9.
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10.
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____



* 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 bottles

Project #

WO# : 92510474

PM: BV

Due Date: 12/16/20

CLIENT : 92-WSP

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/Gaš 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	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	5	/	/	/	/	/	/	/	/	/	/	/	/	/
2	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	6	/	/	/	/	/	/	/	/	/	/	/	/	
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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).

MS/PC

CHAIN-OF-CUSTODY RECORD

WSP USA Office Address
1330 DULLES TECH VALLEY DRIVE # 300 HERNDON VA 20171

Project Name
KOPFLEX

Project Location
HANDOVER, MD

Project Number & Task
31401545.010/3

Sampler(s) Name(s)
MOLLY LONG

Sampler(s) Signature(s)
ML

WSP USA Contact Name
MOLLY LONG

WSP USA Contact E-mail
MOLLY.LONG@wsp.com

WSP USA Contact Phone
703 709 6500

Matrix

Collection Start Date

Collection Stop Date

Number of Containers

Requested Analyses & Preservatives

Sample Identification

Matrix

Collection Start Date

Collection Stop Date

Number of Containers

No. 10577

Laboratory Name & Location
PACE, NC

Laboratory Project Manager
BONNIEV.

Requested Turnaround Time
 Standard
 48 HR
 72 HR
 24 HR

Sample Comments
92510474

Tracking Number(s)
81278179 5199

Custody Seal Number(s)

Requested Turnaround Time

Sample Comments

Tracking Number(s)

Custody Seal Number(s)

Requested Turnaround Time

Sample Comments

Tracking Number(s)

Custody Seal Number(s)

Requested Turnaround Time

Requested Analyses & Preservatives

VOC (8260D)
8260-1,4-Dioxane with SIMS

Sample Identification	Matrix	Collection Start Date	Collection Stop Date	Number of Containers	Requested Analyses & Preservatives
DUP-120820	AQ	12/8/20	12 00	2	X
MN-45	AQ	12/8/20	13 30	6	X
MN-16D	AQ	12/8/20	13 45	6	X
TRIP BLANK	---	LAB PROVIDED		2	X

Sample Identification	Matrix	Collection Start Date	Collection Stop Date	Number of Containers	Requested Analyses & Preservatives
DUP-120820	AQ	12/8/20	12 00	2	X
MN-45	AQ	12/8/20	13 30	6	X
MN-16D	AQ	12/8/20	13 45	6	X
TRIP BLANK	---	LAB PROVIDED		2	X

Date	Time	Received By (Signature)	Date	Time	Shipment Method
12/8/20	1700	ML	12/9/20	1107	Fedex

Relinquished By (Signature)	Date	Time	Received By (Signature)	Date	Time	Shipment Method
ML	12/8/20	1700	ML	12/9/20	1107	Fedex

*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)

January 11, 2021

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

RE: Project: Kop Flex
Pace Project No.: 92515248

Dear Eric Johnson:

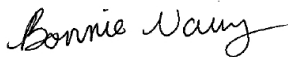
Enclosed are the analytical results for sample(s) received by the laboratory on January 07, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

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

Sincerely,



Bonnie Vang
bonnie.vang@pacelabs.com
(704)875-9092
Project Manager

Enclosures

cc: Molly Long, WSP
Pam Robertson, WSP USA



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Kop Flex

Pace Project No.: 92515248

Pace Analytical Services Charlotte

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Kop Flex
Pace Project No.: 92515248

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92515248001	MW-42	Water	01/06/21 11:45	01/07/21 10:52
92515248002	Trip Blank	Water	01/06/21 00:00	01/07/21 10:52

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Kop Flex
Pace Project No.: 92515248

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92515248001	MW-42	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92515248002	Trip Blank	EPA 8260D	CL	63	PASI-C

PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92515248

Sample: MW-42	Lab ID: 92515248001	Collected: 01/06/21 11:45	Received: 01/07/21 10:52	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		01/08/21 01:59	67-64-1	
Benzene	ND	ug/L	1.0	1		01/08/21 01:59	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		01/08/21 01:59	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		01/08/21 01:59	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		01/08/21 01:59	75-27-4	
Bromoform	ND	ug/L	1.0	1		01/08/21 01:59	75-25-2	
Bromomethane	ND	ug/L	2.0	1		01/08/21 01:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		01/08/21 01:59	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		01/08/21 01:59	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		01/08/21 01:59	108-90-7	
Chloroethane	ND	ug/L	1.0	1		01/08/21 01:59	75-00-3	IL
Chloroform	ND	ug/L	5.0	1		01/08/21 01:59	67-66-3	
Chloromethane	ND	ug/L	1.0	1		01/08/21 01:59	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		01/08/21 01:59	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		01/08/21 01:59	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		01/08/21 01:59	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		01/08/21 01:59	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/08/21 01:59	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		01/08/21 01:59	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		01/08/21 01:59	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		01/08/21 01:59	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		01/08/21 01:59	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/08/21 01:59	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		01/08/21 01:59	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		01/08/21 01:59	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		01/08/21 01:59	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/08/21 01:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		01/08/21 01:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		01/08/21 01:59	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		01/08/21 01:59	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		01/08/21 01:59	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		01/08/21 01:59	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		01/08/21 01:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		01/08/21 01:59	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		01/08/21 01:59	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		01/08/21 01:59	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		01/08/21 01:59	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		01/08/21 01:59	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		01/08/21 01:59	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		01/08/21 01:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		01/08/21 01:59	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		01/08/21 01:59	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		01/08/21 01:59	91-20-3	
Styrene	ND	ug/L	1.0	1		01/08/21 01:59	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		01/08/21 01:59	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		01/08/21 01:59	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92515248

Sample: MW-42	Lab ID: 92515248001	Collected: 01/06/21 11:45	Received: 01/07/21 10:52	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		01/08/21 01:59	127-18-4	
Toluene	ND	ug/L	1.0	1		01/08/21 01:59	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		01/08/21 01:59	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		01/08/21 01:59	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		01/08/21 01:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		01/08/21 01:59	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		01/08/21 01:59	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		01/08/21 01:59	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		01/08/21 01:59	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		01/08/21 01:59	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		01/08/21 01:59	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		01/08/21 01:59	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		01/08/21 01:59	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/08/21 01:59	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	96	%	70-130	1		01/08/21 01:59	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130	1		01/08/21 01:59	17060-07-0	
Toluene-d8 (S)	98	%	70-130	1		01/08/21 01:59	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	13.2	ug/L	2.0	1		01/07/21 17:51	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%	70-130	1		01/07/21 17:51	17060-07-0	
Toluene-d8 (S)	104	%	66-133	1		01/07/21 17:51	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex

Pace Project No.: 92515248

Sample: Trip Blank	Lab ID: 92515248002	Collected: 01/06/21 00:00	Received: 01/07/21 10:52	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D						
		Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		01/08/21 01:05	67-64-1	
Benzene	ND	ug/L	1.0	1		01/08/21 01:05	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		01/08/21 01:05	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		01/08/21 01:05	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		01/08/21 01:05	75-27-4	
Bromoform	ND	ug/L	1.0	1		01/08/21 01:05	75-25-2	
Bromomethane	ND	ug/L	2.0	1		01/08/21 01:05	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		01/08/21 01:05	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		01/08/21 01:05	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		01/08/21 01:05	108-90-7	
Chloroethane	ND	ug/L	1.0	1		01/08/21 01:05	75-00-3	IL
Chloroform	ND	ug/L	5.0	1		01/08/21 01:05	67-66-3	
Chloromethane	ND	ug/L	1.0	1		01/08/21 01:05	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		01/08/21 01:05	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		01/08/21 01:05	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		01/08/21 01:05	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		01/08/21 01:05	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/08/21 01:05	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		01/08/21 01:05	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		01/08/21 01:05	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		01/08/21 01:05	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		01/08/21 01:05	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/08/21 01:05	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		01/08/21 01:05	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		01/08/21 01:05	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		01/08/21 01:05	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/08/21 01:05	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		01/08/21 01:05	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		01/08/21 01:05	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		01/08/21 01:05	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		01/08/21 01:05	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		01/08/21 01:05	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		01/08/21 01:05	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		01/08/21 01:05	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		01/08/21 01:05	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		01/08/21 01:05	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		01/08/21 01:05	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		01/08/21 01:05	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		01/08/21 01:05	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		01/08/21 01:05	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		01/08/21 01:05	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		01/08/21 01:05	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		01/08/21 01:05	91-20-3	
Styrene	ND	ug/L	1.0	1		01/08/21 01:05	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		01/08/21 01:05	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		01/08/21 01:05	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92515248

Sample: Trip Blank		Lab ID: 92515248002	Collected: 01/06/21 00:00	Received: 01/07/21 10:52	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Tetrachloroethene	ND	ug/L	1.0	1		01/08/21 01:05	127-18-4	
Toluene	ND	ug/L	1.0	1		01/08/21 01:05	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		01/08/21 01:05	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		01/08/21 01:05	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		01/08/21 01:05	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		01/08/21 01:05	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		01/08/21 01:05	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		01/08/21 01:05	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		01/08/21 01:05	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		01/08/21 01:05	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		01/08/21 01:05	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		01/08/21 01:05	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		01/08/21 01:05	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/08/21 01:05	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	1		01/08/21 01:05	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130	1		01/08/21 01:05	17060-07-0	
Toluene-d8 (S)	97	%	70-130	1		01/08/21 01:05	2037-26-5	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92515248

QC Batch: 591349 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92515248001, 92515248002

METHOD BLANK: 3121997 Matrix: Water
Associated Lab Samples: 92515248001, 92515248002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	01/08/21 00:46	
1,1,1-Trichloroethane	ug/L	ND	1.0	01/08/21 00:46	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	01/08/21 00:46	
1,1,2-Trichloroethane	ug/L	ND	1.0	01/08/21 00:46	
1,1-Dichloroethane	ug/L	ND	1.0	01/08/21 00:46	
1,1-Dichloroethene	ug/L	ND	1.0	01/08/21 00:46	
1,1-Dichloropropene	ug/L	ND	1.0	01/08/21 00:46	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	01/08/21 00:46	
1,2,3-Trichloropropane	ug/L	ND	1.0	01/08/21 00:46	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	01/08/21 00:46	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	01/08/21 00:46	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/08/21 00:46	
1,2-Dichlorobenzene	ug/L	ND	1.0	01/08/21 00:46	
1,2-Dichloroethane	ug/L	ND	1.0	01/08/21 00:46	
1,2-Dichloropropane	ug/L	ND	1.0	01/08/21 00:46	
1,3-Dichlorobenzene	ug/L	ND	1.0	01/08/21 00:46	
1,3-Dichloropropane	ug/L	ND	1.0	01/08/21 00:46	
1,4-Dichlorobenzene	ug/L	ND	1.0	01/08/21 00:46	
2,2-Dichloropropane	ug/L	ND	1.0	01/08/21 00:46	
2-Butanone (MEK)	ug/L	ND	5.0	01/08/21 00:46	
2-Chlorotoluene	ug/L	ND	1.0	01/08/21 00:46	
2-Hexanone	ug/L	ND	5.0	01/08/21 00:46	
4-Chlorotoluene	ug/L	ND	1.0	01/08/21 00:46	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	01/08/21 00:46	
Acetone	ug/L	ND	25.0	01/08/21 00:46	
Benzene	ug/L	ND	1.0	01/08/21 00:46	
Bromobenzene	ug/L	ND	1.0	01/08/21 00:46	
Bromochloromethane	ug/L	ND	1.0	01/08/21 00:46	
Bromodichloromethane	ug/L	ND	1.0	01/08/21 00:46	
Bromoform	ug/L	ND	1.0	01/08/21 00:46	
Bromomethane	ug/L	ND	2.0	01/08/21 00:46	
Carbon tetrachloride	ug/L	ND	1.0	01/08/21 00:46	
Chlorobenzene	ug/L	ND	1.0	01/08/21 00:46	
Chloroethane	ug/L	ND	1.0	01/08/21 00:46	IL
Chloroform	ug/L	ND	5.0	01/08/21 00:46	
Chloromethane	ug/L	ND	1.0	01/08/21 00:46	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/08/21 00:46	
cis-1,3-Dichloropropene	ug/L	ND	1.0	01/08/21 00:46	
Dibromochloromethane	ug/L	ND	1.0	01/08/21 00:46	
Dibromomethane	ug/L	ND	1.0	01/08/21 00:46	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92515248

METHOD BLANK: 3121997 Matrix: Water

Associated Lab Samples: 92515248001, 92515248002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	01/08/21 00:46	
Diisopropyl ether	ug/L	ND	1.0	01/08/21 00:46	
Ethylbenzene	ug/L	ND	1.0	01/08/21 00:46	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	01/08/21 00:46	
m&p-Xylene	ug/L	ND	2.0	01/08/21 00:46	
Methyl-tert-butyl ether	ug/L	ND	1.0	01/08/21 00:46	
Methylene Chloride	ug/L	ND	5.0	01/08/21 00:46	
Naphthalene	ug/L	ND	1.0	01/08/21 00:46	
o-Xylene	ug/L	ND	1.0	01/08/21 00:46	
p-Isopropyltoluene	ug/L	ND	1.0	01/08/21 00:46	
Styrene	ug/L	ND	1.0	01/08/21 00:46	
Tetrachloroethene	ug/L	ND	1.0	01/08/21 00:46	
Toluene	ug/L	ND	1.0	01/08/21 00:46	
trans-1,2-Dichloroethene	ug/L	ND	1.0	01/08/21 00:46	
trans-1,3-Dichloropropene	ug/L	ND	1.0	01/08/21 00:46	
Trichloroethene	ug/L	ND	1.0	01/08/21 00:46	
Trichlorofluoromethane	ug/L	ND	1.0	01/08/21 00:46	
Vinyl acetate	ug/L	ND	2.0	01/08/21 00:46	
Vinyl chloride	ug/L	ND	1.0	01/08/21 00:46	
Xylene (Total)	ug/L	ND	1.0	01/08/21 00:46	
1,2-Dichloroethane-d4 (S)	%	99	70-130	01/08/21 00:46	
4-Bromofluorobenzene (S)	%	97	70-130	01/08/21 00:46	
Toluene-d8 (S)	%	97	70-130	01/08/21 00:46	

LABORATORY CONTROL SAMPLE: 3121998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	49.4	99	70-130	
1,1,1-Trichloroethane	ug/L	50	47.3	95	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	51.4	103	70-130	
1,1,2-Trichloroethane	ug/L	50	48.8	98	70-130	
1,1-Dichloroethane	ug/L	50	48.0	96	70-130	
1,1-Dichloroethene	ug/L	50	50.0	100	70-132	
1,1-Dichloropropene	ug/L	50	47.1	94	70-131	
1,2,3-Trichlorobenzene	ug/L	50	51.0	102	70-134	
1,2,3-Trichloropropane	ug/L	50	51.0	102	70-130	
1,2,4-Trichlorobenzene	ug/L	50	50.3	101	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	50.2	100	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	49.6	99	70-130	
1,2-Dichlorobenzene	ug/L	50	50.8	102	70-130	
1,2-Dichloroethane	ug/L	50	49.0	98	70-130	
1,2-Dichloropropane	ug/L	50	48.3	97	70-130	
1,3-Dichlorobenzene	ug/L	50	49.8	100	70-130	
1,3-Dichloropropane	ug/L	50	50.0	100	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92515248

LABORATORY CONTROL SAMPLE: 3121998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	49.5	99	70-130	
2,2-Dichloropropane	ug/L	50	46.1	92	70-130	
2-Butanone (MEK)	ug/L	100	90.5	91	70-133	
2-Chlorotoluene	ug/L	50	49.9	100	70-130	
2-Hexanone	ug/L	100	93.0	93	70-130	
4-Chlorotoluene	ug/L	50	48.2	96	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	92.3	92	70-130	
Acetone	ug/L	100	92.9	93	70-144	
Benzene	ug/L	50	47.6	95	70-130	
Bromobenzene	ug/L	50	47.9	96	70-130	
Bromochloromethane	ug/L	50	47.5	95	70-130	
Bromodichloromethane	ug/L	50	44.5	89	70-130	
Bromoform	ug/L	50	51.8	104	70-131	
Bromomethane	ug/L	50	37.6	75	30-177	
Carbon tetrachloride	ug/L	50	47.8	96	70-130	
Chlorobenzene	ug/L	50	49.6	99	70-130	
Chloroethane	ug/L	50	28.0	56	46-131	IL
Chloroform	ug/L	50	46.9	94	70-130	
Chloromethane	ug/L	50	38.0	76	49-130	
cis-1,2-Dichloroethene	ug/L	50	48.1	96	70-130	
cis-1,3-Dichloropropene	ug/L	50	49.9	100	70-130	
Dibromochloromethane	ug/L	50	48.8	98	70-130	
Dibromomethane	ug/L	50	50.5	101	70-130	
Dichlorodifluoromethane	ug/L	50	40.1	80	52-134	
Diisopropyl ether	ug/L	50	44.0	88	70-131	
Ethylbenzene	ug/L	50	48.0	96	70-130	
Hexachloro-1,3-butadiene	ug/L	50	49.0	98	70-131	
m&p-Xylene	ug/L	100	97.7	98	70-130	
Methyl-tert-butyl ether	ug/L	50	45.4	91	70-130	
Methylene Chloride	ug/L	50	46.3	93	68-130	
Naphthalene	ug/L	50	50.6	101	70-133	
o-Xylene	ug/L	50	48.8	98	70-130	
p-Isopropyltoluene	ug/L	50	47.9	96	70-130	
Styrene	ug/L	50	50.7	101	70-130	
Tetrachloroethene	ug/L	50	47.7	95	70-130	
Toluene	ug/L	50	47.4	95	70-130	
trans-1,2-Dichloroethene	ug/L	50	48.2	96	70-130	
trans-1,3-Dichloropropene	ug/L	50	48.9	98	70-130	
Trichloroethene	ug/L	50	49.2	98	70-130	
Trichlorofluoromethane	ug/L	50	41.1	82	61-130	
Vinyl acetate	ug/L	100	97.6	98	70-140	
Vinyl chloride	ug/L	50	41.4	83	59-142	
Xylene (Total)	ug/L	150	147	98	70-130	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			104	70-130	
Toluene-d8 (S)	%			99	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex

Pace Project No.: 92515248

Parameter	Units	3121999		3122000		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92515069001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
1,1,1,2-Tetrachloroethane	ug/L	ND	800	800	862	868	108	109	70-135	1	30		
1,1,1-Trichloroethane	ug/L	ND	800	800	890	877	111	110	70-148	1	30		
1,1,2,2-Tetrachloroethane	ug/L	ND	800	800	860	833	107	104	70-131	3	30		
1,1,2-Trichloroethane	ug/L	76.6	800	800	928	906	106	104	70-136	2	30		
1,1-Dichloroethane	ug/L	ND	800	800	883	877	110	110	70-147	1	30		
1,1-Dichloroethene	ug/L	ND	800	800	923	903	115	113	70-158	2	30		
1,1-Dichloropropene	ug/L	ND	800	800	877	856	110	107	70-149	2	30		
1,2,3-Trichlorobenzene	ug/L	ND	800	800	908	881	113	110	68-140	3	30		
1,2,3-Trichloropropane	ug/L	ND	800	800	934	890	117	111	67-137	5	30		
1,2,4-Trichlorobenzene	ug/L	ND	800	800	911	886	114	111	70-139	3	30		
1,2-Dibromo-3-chloropropane	ug/L	ND	800	800	1100	1020	112	103	69-136	7	30		
1,2-Dibromoethane (EDB)	ug/L	249	800	800	1120	1100	109	107	70-137	1	30		
1,2-Dichlorobenzene	ug/L	ND	800	800	906	880	113	110	70-133	3	30		
1,2-Dichloroethane	ug/L	ND	800	800	892	872	108	106	67-138	2	30		
1,2-Dichloropropane	ug/L	1130	800	800	2000	1990	109	108	70-138	0	30		
1,3-Dichlorobenzene	ug/L	ND	800	800	873	861	109	108	70-133	1	30		
1,3-Dichloropropane	ug/L	ND	800	800	891	854	111	107	70-136	4	30		
1,4-Dichlorobenzene	ug/L	ND	800	800	906	876	113	110	70-133	3	30		
2,2-Dichloropropane	ug/L	ND	800	800	878	838	110	105	52-155	5	30		
2-Butanone (MEK)	ug/L	ND	1600	1600	1740	1570	109	98	61-147	10	30		
2-Chlorotoluene	ug/L	ND	800	800	879	858	110	107	70-141	2	30		
2-Hexanone	ug/L	ND	1600	1600	1740	1590	109	100	67-139	9	30		
4-Chlorotoluene	ug/L	ND	800	800	854	835	107	104	70-135	2	30		
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1600	1600	1720	1600	107	100	67-136	7	30		
Acetone	ug/L	ND	1600	1600	1780	1640	111	102	55-159	8	30		
Benzene	ug/L	ND	800	800	885	876	109	107	67-150	1	30		
Bromobenzene	ug/L	ND	800	800	865	853	108	107	70-134	1	30		
Bromochloromethane	ug/L	ND	800	800	863	829	108	104	70-146	4	30		
Bromodichloromethane	ug/L	ND	800	800	818	805	98	97	70-138	2	30		
Bromoform	ug/L	ND	800	800	835	822	104	103	57-138	2	30		
Bromomethane	ug/L	ND	800	800	578	663	72	83	10-200	14	30		
Carbon tetrachloride	ug/L	112	800	800	1030	997	115	111	70-147	3	30		
Chlorobenzene	ug/L	ND	800	800	887	877	111	110	70-137	1	30		
Chloroethane	ug/L	ND	800	800	689	697	86	87	51-166	1	30	IL	
Chloroform	ug/L	4920	800	800	5800	5550	110	79	70-144	4	30		
Chloromethane	ug/L	ND	800	800	683	667	85	83	24-161	2	30		
cis-1,2-Dichloroethene	ug/L	ND	800	800	878	862	110	108	67-148	2	30		
cis-1,3-Dichloropropene	ug/L	ND	800	800	881	880	110	110	70-142	0	30		
Dibromochloromethane	ug/L	ND	800	800	849	832	106	104	68-138	2	30		
Dibromomethane	ug/L	ND	800	800	890	883	111	110	70-134	1	30		
Dichlorodifluoromethane	ug/L	ND	800	800	717	682	90	85	43-155	5	30		
Diisopropyl ether	ug/L	ND	800	800	830	807	104	101	65-146	3	30		
Ethylbenzene	ug/L	ND	800	800	864	867	108	108	68-143	0	30		
Hexachloro-1,3-butadiene	ug/L	ND	800	800	873	876	109	110	62-151	0	30		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex

Pace Project No.: 92515248

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3121999 3122000												
Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		92515069001 Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec				
m&p-Xylene	ug/L	ND	1600	1600	1770	1740	111	109	53-157	1	30	
Methyl-tert-butyl ether	ug/L	ND	800	800	851	824	106	103	59-156	3	30	
Methylene Chloride	ug/L	325	800	800	1180	1150	107	103	64-148	3	30	
Naphthalene	ug/L	ND	800	800	924	890	116	111	57-150	4	30	
o-Xylene	ug/L	ND	800	800	861	854	108	107	68-143	1	30	
p-Isopropyltoluene	ug/L	ND	800	800	884	874	110	109	70-141	1	30	
Styrene	ug/L	ND	800	800	879	868	110	109	70-136	1	30	
Tetrachloroethene	ug/L	53.3	800	800	963	927	114	109	70-139	4	30	
Toluene	ug/L	ND	800	800	861	854	108	107	47-157	1	30	
trans-1,2-Dichloroethene	ug/L	ND	800	800	907	875	113	109	70-149	4	30	
trans-1,3-Dichloropropene	ug/L	ND	800	800	842	829	105	104	70-138	1	30	
Trichloroethene	ug/L	135	800	800	1030	1030	111	111	70-149	0	30	
Trichlorofluoromethane	ug/L	ND	800	800	837	832	105	104	61-154	1	30	
Vinyl acetate	ug/L	ND	1600	1600	1870	1780	117	111	48-156	5	30	
Vinyl chloride	ug/L	ND	800	800	727	709	91	89	55-172	3	30	
Xylene (Total)	ug/L	ND	2400	2400	2630	2600	110	108	66-145	1	30	
1,2-Dichloroethane-d4 (S)	%						100	99	70-130			
4-Bromofluorobenzene (S)	%						99	99	70-130			
Toluene-d8 (S)	%						100	99	70-130			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92515248

QC Batch: 591357	Analysis Method: EPA 8260D Mod.
QC Batch Method: EPA 8260D Mod.	Analysis Description: 8260D MSV SIM
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92515248001

METHOD BLANK: 3122052 Matrix: Water

Associated Lab Samples: 92515248001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	01/07/21 16:33	
1,2-Dichloroethane-d4 (S)	%	107	70-130	01/07/21 16:33	
Toluene-d8 (S)	%	106	66-133	01/07/21 16:33	

LABORATORY CONTROL SAMPLE: 3122053

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	21.8	109	70-130	
1,2-Dichloroethane-d4 (S)	%			106	70-130	
Toluene-d8 (S)	%			107	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3122054 3122055

Parameter	Units	92515248001 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	13.2	20	20	37.4	36.8	121	118	64-141	2	30	
1,2-Dichloroethane-d4 (S)	%						101	103	70-130		30	
Toluene-d8 (S)	%						102	102	66-133		30	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Kop Flex
Pace Project No.: 92515248

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.

ANALYTE QUALIFIERS

IL This analyte exceeded secondary source verification criteria low for the initial calibration. The reported results should be considered an estimated value.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Kop Flex
Pace Project No.: 92515248

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92515248001	MW-42	EPA 8260D	591349		
92515248002	Trip Blank	EPA 8260D	591349		
92515248001	MW-42	EPA 8260D Mod.	591357		

REPORT OF LABORATORY ANALYSIS

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Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: WSP USA

Project #: **WO# : 92515248**



Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: VS 1/7/2021

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Thermometer: IR Gun ID: 92T064 Type of Ice: Wet Blue None

Yes No N/A

Cooler Temp: 11 Correction Factor: Add/Subtract (°C) -0.1

Temp should be above freezing to 6°C

Cooler Temp Corrected (°C): 1.0

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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Includes Date/Time/ID/Analysis Matrix: <u>WT</u>	9.
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10.
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____ Date: _____

Project Manager SRF Review: _____ Date: _____



* Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Project #

WO# : 92515248

PM: BV Due Date: 01/14/21
CLIENT: 92-WSP

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottles

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 Na2SO3 (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																													
2																													
3																													
4																													
5																													
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.

December 03, 2020

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

RE: Project: Kop Flex
Pace Project No.: 92507929

Dear Eric Johnson:

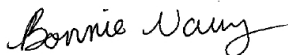
Enclosed are the analytical results for sample(s) received by the laboratory on November 24, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Charlotte

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

Sincerely,



Bonnie Vang
bonnie.vang@pacelabs.com
(704)875-9092
Project Manager

Enclosures

cc: Molly Long, WSP
Pam Robertson, WSP USA



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Kop Flex
Pace Project No.: 92507929

Pace Analytical Services Charlotte

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

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Kop Flex
Pace Project No.: 92507929

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92507929001	RW-1S	Water	11/22/20 13:35	11/24/20 11:00
92507929002	RW-2S	Water	11/22/20 13:40	11/24/20 11:00
92507929003	RW-3S	Water	11/22/20 13:50	11/24/20 11:00
92507929004	RW-1D	Water	11/22/20 14:20	11/24/20 11:00
92507929005	RW-2D	Water	11/22/20 14:50	11/24/20 11:00
92507929006	Trip Blank A	Water	11/22/20 00:00	11/24/20 11:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Kop Flex
Pace Project No.: 92507929

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92507929001	RW-1S	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92507929002	RW-2S	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	CL	3	PASI-C
92507929003	RW-3S	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C
92507929004	RW-1D	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	CL	3	PASI-C
92507929005	RW-2D	EPA 8260D	CL	63	PASI-C
		EPA 8260D Mod.	CL	3	PASI-C
92507929006	Trip Blank A	EPA 8260D	SAS	63	PASI-C
		EPA 8260D Mod.	LMB	3	PASI-C

PASI-C = Pace Analytical Services - Charlotte

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507929

Sample: RW-1S	Lab ID: 92507929001	Collected: 11/22/20 13:35	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	62.5	2.5		11/25/20 20:43	67-64-1	
Benzene	ND	ug/L	2.5	2.5		11/25/20 20:43	71-43-2	
Bromobenzene	ND	ug/L	2.5	2.5		11/25/20 20:43	108-86-1	
Bromochloromethane	ND	ug/L	2.5	2.5		11/25/20 20:43	74-97-5	
Bromodichloromethane	ND	ug/L	2.5	2.5		11/25/20 20:43	75-27-4	
Bromoform	ND	ug/L	2.5	2.5		11/25/20 20:43	75-25-2	
Bromomethane	ND	ug/L	5.0	2.5		11/25/20 20:43	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	12.5	2.5		11/25/20 20:43	78-93-3	
Carbon tetrachloride	ND	ug/L	2.5	2.5		11/25/20 20:43	56-23-5	
Chlorobenzene	ND	ug/L	2.5	2.5		11/25/20 20:43	108-90-7	
Chloroethane	12.8	ug/L	2.5	2.5		11/25/20 20:43	75-00-3	
Chloroform	ND	ug/L	12.5	2.5		11/25/20 20:43	67-66-3	
Chloromethane	ND	ug/L	2.5	2.5		11/25/20 20:43	74-87-3	v2
2-Chlorotoluene	ND	ug/L	2.5	2.5		11/25/20 20:43	95-49-8	L1
4-Chlorotoluene	ND	ug/L	2.5	2.5		11/25/20 20:43	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	12.5	2.5		11/25/20 20:43	96-12-8	
Dibromochloromethane	ND	ug/L	2.5	2.5		11/25/20 20:43	124-48-1	L1
1,2-Dibromoethane (EDB)	ND	ug/L	2.5	2.5		11/25/20 20:43	106-93-4	
Dibromomethane	ND	ug/L	2.5	2.5		11/25/20 20:43	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.5	2.5		11/25/20 20:43	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.5	2.5		11/25/20 20:43	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.5	2.5		11/25/20 20:43	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.5	2.5		11/25/20 20:43	75-71-8	
1,1-Dichloroethane	81.2	ug/L	2.5	2.5		11/25/20 20:43	75-34-3	M1
1,2-Dichloroethane	ND	ug/L	2.5	2.5		11/25/20 20:43	107-06-2	
1,1-Dichloroethene	344	ug/L	2.5	2.5		11/25/20 20:43	75-35-4	M1,R1
cis-1,2-Dichloroethene	ND	ug/L	2.5	2.5		11/25/20 20:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.5	2.5		11/25/20 20:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.5	2.5		11/25/20 20:43	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.5	2.5		11/25/20 20:43	142-28-9	L1
2,2-Dichloropropane	ND	ug/L	2.5	2.5		11/25/20 20:43	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.5	2.5		11/25/20 20:43	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.5	2.5		11/25/20 20:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.5	2.5		11/25/20 20:43	10061-02-6	
Diisopropyl ether	ND	ug/L	2.5	2.5		11/25/20 20:43	108-20-3	
Ethylbenzene	ND	ug/L	2.5	2.5		11/25/20 20:43	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.5	2.5		11/25/20 20:43	87-68-3	
2-Hexanone	ND	ug/L	12.5	2.5		11/25/20 20:43	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.5	2.5		11/25/20 20:43	99-87-6	
Methylene Chloride	ND	ug/L	12.5	2.5		11/25/20 20:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	12.5	2.5		11/25/20 20:43	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	2.5	2.5		11/25/20 20:43	1634-04-4	
Naphthalene	ND	ug/L	2.5	2.5		11/25/20 20:43	91-20-3	
Styrene	ND	ug/L	2.5	2.5		11/25/20 20:43	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.5	2.5		11/25/20 20:43	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2.5	2.5		11/25/20 20:43	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507929

Sample: RW-1S	Lab ID: 92507929001	Collected: 11/22/20 13:35	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Tetrachloroethene	ND	ug/L	2.5	2.5		11/25/20 20:43	127-18-4	
Toluene	ND	ug/L	2.5	2.5		11/25/20 20:43	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.5	2.5		11/25/20 20:43	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.5	2.5		11/25/20 20:43	120-82-1	
1,1,1-Trichloroethane	65.4	ug/L	2.5	2.5		11/25/20 20:43	71-55-6	M1
1,1,2-Trichloroethane	ND	ug/L	2.5	2.5		11/25/20 20:43	79-00-5	
Trichloroethene	ND	ug/L	2.5	2.5		11/25/20 20:43	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.5	2.5		11/25/20 20:43	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	2.5		11/25/20 20:43	96-18-4	
Vinyl acetate	ND	ug/L	5.0	2.5		11/25/20 20:43	108-05-4	
Vinyl chloride	3.4	ug/L	2.5	2.5		11/25/20 20:43	75-01-4	
Xylene (Total)	ND	ug/L	2.5	2.5		11/25/20 20:43	1330-20-7	
m&p-Xylene	ND	ug/L	5.0	2.5		11/25/20 20:43	179601-23-1	
o-Xylene	ND	ug/L	2.5	2.5		11/25/20 20:43	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	2.5		11/25/20 20:43	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130	2.5		11/25/20 20:43	17060-07-0	
Toluene-d8 (S)	104	%	70-130	2.5		11/25/20 20:43	2037-26-5	
8260D MSV SIM		Analytical Method: EPA 8260D Mod. Pace Analytical Services - Charlotte						
1,4-Dioxane (p-Dioxane)	351	ug/L	10.0	5		11/25/20 07:11	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	70-130	5		11/25/20 07:11	17060-07-0	
Toluene-d8 (S)	91	%	66-133	5		11/25/20 07:11	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507929

Sample: RW-2S	Lab ID: 92507929002	Collected: 11/22/20 13:40	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/26/20 05:34	67-64-1	
Benzene	ND	ug/L	1.0	1		11/26/20 05:34	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/26/20 05:34	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/26/20 05:34	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/26/20 05:34	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/26/20 05:34	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/26/20 05:34	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		11/26/20 05:34	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/26/20 05:34	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/26/20 05:34	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/26/20 05:34	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/26/20 05:34	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/26/20 05:34	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/26/20 05:34	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/26/20 05:34	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/26/20 05:34	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/26/20 05:34	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/26/20 05:34	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/26/20 05:34	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 05:34	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 05:34	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 05:34	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/26/20 05:34	75-71-8	
1,1-Dichloroethane	18.6	ug/L	1.0	1		11/26/20 05:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/26/20 05:34	107-06-2	
1,1-Dichloroethene	129	ug/L	1.0	1		11/26/20 05:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/26/20 05:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/26/20 05:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/26/20 05:34	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/26/20 05:34	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/26/20 05:34	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/26/20 05:34	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/26/20 05:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/26/20 05:34	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/26/20 05:34	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/26/20 05:34	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/26/20 05:34	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/26/20 05:34	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/26/20 05:34	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/26/20 05:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/26/20 05:34	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/26/20 05:34	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/26/20 05:34	91-20-3	
Styrene	ND	ug/L	1.0	1		11/26/20 05:34	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/26/20 05:34	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/26/20 05:34	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507929

Sample: RW-2S	Lab ID: 92507929002	Collected: 11/22/20 13:40	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		11/26/20 05:34	127-18-4	
Toluene	ND	ug/L	1.0	1		11/26/20 05:34	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/26/20 05:34	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/26/20 05:34	120-82-1	
1,1,1-Trichloroethane	191	ug/L	1.0	1		11/26/20 05:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/26/20 05:34	79-00-5	
Trichloroethene	1.4	ug/L	1.0	1		11/26/20 05:34	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/26/20 05:34	75-69-4	v1
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/26/20 05:34	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/26/20 05:34	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/26/20 05:34	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/26/20 05:34	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/26/20 05:34	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/26/20 05:34	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		11/26/20 05:34	460-00-4	
1,2-Dichloroethane-d4 (S)	120	%	70-130	1		11/26/20 05:34	17060-07-0	
Toluene-d8 (S)	102	%	70-130	1		11/26/20 05:34	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	97.0	ug/L	2.0	1		11/25/20 22:29	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%	70-130	1		11/25/20 22:29	17060-07-0	
Toluene-d8 (S)	94	%	66-133	1		11/25/20 22:29	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507929

Sample: RW-3S	Lab ID: 92507929003	Collected: 11/22/20 13:50	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/25/20 18:23	67-64-1	
Benzene	ND	ug/L	1.0	1		11/25/20 18:23	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/25/20 18:23	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/25/20 18:23	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/25/20 18:23	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/25/20 18:23	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/25/20 18:23	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		11/25/20 18:23	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/25/20 18:23	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/25/20 18:23	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/25/20 18:23	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/25/20 18:23	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/25/20 18:23	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 18:23	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 18:23	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/25/20 18:23	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/25/20 18:23	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/25/20 18:23	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/25/20 18:23	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 18:23	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 18:23	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 18:23	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/25/20 18:23	75-71-8	
1,1-Dichloroethane	2.8	ug/L	1.0	1		11/25/20 18:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/25/20 18:23	107-06-2	
1,1-Dichloroethene	4.2	ug/L	1.0	1		11/25/20 18:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 18:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 18:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 18:23	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/25/20 18:23	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 18:23	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/25/20 18:23	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 18:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 18:23	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/25/20 18:23	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/25/20 18:23	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/25/20 18:23	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/25/20 18:23	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/25/20 18:23	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/25/20 18:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/25/20 18:23	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/25/20 18:23	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/25/20 18:23	91-20-3	
Styrene	ND	ug/L	1.0	1		11/25/20 18:23	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 18:23	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 18:23	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507929

Sample: RW-3S	Lab ID: 92507929003	Collected: 11/22/20 13:50	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		11/25/20 18:23	127-18-4	
Toluene	ND	ug/L	1.0	1		11/25/20 18:23	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 18:23	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 18:23	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/25/20 18:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/25/20 18:23	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/25/20 18:23	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/25/20 18:23	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/25/20 18:23	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/25/20 18:23	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/25/20 18:23	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/25/20 18:23	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/25/20 18:23	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/25/20 18:23	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		11/25/20 18:23	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130	1		11/25/20 18:23	17060-07-0	
Toluene-d8 (S)	99	%	70-130	1		11/25/20 18:23	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	13.8	ug/L	2.0	1		11/25/20 00:24	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	70-130	1		11/25/20 00:24	17060-07-0	
Toluene-d8 (S)	92	%	66-133	1		11/25/20 00:24	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507929

Sample: RW-1D	Lab ID: 92507929004	Collected: 11/22/20 14:20	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	50.0	2		12/02/20 22:50	67-64-1	
Benzene	ND	ug/L	2.0	2		12/02/20 22:50	71-43-2	
Bromobenzene	ND	ug/L	2.0	2		12/02/20 22:50	108-86-1	
Bromochloromethane	ND	ug/L	2.0	2		12/02/20 22:50	74-97-5	
Bromodichloromethane	ND	ug/L	2.0	2		12/02/20 22:50	75-27-4	
Bromoform	ND	ug/L	2.0	2		12/02/20 22:50	75-25-2	
Bromomethane	ND	ug/L	4.0	2		12/02/20 22:50	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	10.0	2		12/02/20 22:50	78-93-3	
Carbon tetrachloride	ND	ug/L	2.0	2		12/02/20 22:50	56-23-5	
Chlorobenzene	ND	ug/L	2.0	2		12/02/20 22:50	108-90-7	
Chloroethane	4.0	ug/L	2.0	2		12/02/20 22:50	75-00-3	v3
Chloroform	ND	ug/L	10.0	2		12/02/20 22:50	67-66-3	
Chloromethane	ND	ug/L	2.0	2		12/02/20 22:50	74-87-3	
2-Chlorotoluene	ND	ug/L	2.0	2		12/02/20 22:50	95-49-8	
4-Chlorotoluene	ND	ug/L	2.0	2		12/02/20 22:50	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	10.0	2		12/02/20 22:50	96-12-8	
Dibromochloromethane	ND	ug/L	2.0	2		12/02/20 22:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2.0	2		12/02/20 22:50	106-93-4	
Dibromomethane	ND	ug/L	2.0	2		12/02/20 22:50	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2.0	2		12/02/20 22:50	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2.0	2		12/02/20 22:50	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2.0	2		12/02/20 22:50	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2.0	2		12/02/20 22:50	75-71-8	
1,1-Dichloroethane	42.0	ug/L	2.0	2		12/02/20 22:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	2.0	2		12/02/20 22:50	107-06-2	
1,1-Dichloroethene	179	ug/L	2.0	2		12/02/20 22:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2.0	2		12/02/20 22:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2.0	2		12/02/20 22:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	2.0	2		12/02/20 22:50	78-87-5	
1,3-Dichloropropane	ND	ug/L	2.0	2		12/02/20 22:50	142-28-9	
2,2-Dichloropropane	ND	ug/L	2.0	2		12/02/20 22:50	594-20-7	
1,1-Dichloropropene	ND	ug/L	2.0	2		12/02/20 22:50	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2.0	2		12/02/20 22:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2.0	2		12/02/20 22:50	10061-02-6	
Diisopropyl ether	ND	ug/L	2.0	2		12/02/20 22:50	108-20-3	
Ethylbenzene	ND	ug/L	2.0	2		12/02/20 22:50	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	2		12/02/20 22:50	87-68-3	
2-Hexanone	ND	ug/L	10.0	2		12/02/20 22:50	591-78-6	
p-Isopropyltoluene	ND	ug/L	2.0	2		12/02/20 22:50	99-87-6	
Methylene Chloride	ND	ug/L	10.0	2		12/02/20 22:50	75-09-2	v2
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	2		12/02/20 22:50	108-10-1	v2
Methyl-tert-butyl ether	ND	ug/L	2.0	2		12/02/20 22:50	1634-04-4	
Naphthalene	ND	ug/L	2.0	2		12/02/20 22:50	91-20-3	
Styrene	ND	ug/L	2.0	2		12/02/20 22:50	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2.0	2		12/02/20 22:50	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	2.0	2		12/02/20 22:50	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507929

Sample: RW-1D	Lab ID: 92507929004	Collected: 11/22/20 14:20	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	2.0	2		12/02/20 22:50	127-18-4	
Toluene	ND	ug/L	2.0	2		12/02/20 22:50	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	2		12/02/20 22:50	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	2		12/02/20 22:50	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	2.0	2		12/02/20 22:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.0	2		12/02/20 22:50	79-00-5	
Trichloroethene	ND	ug/L	2.0	2		12/02/20 22:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	2.0	2		12/02/20 22:50	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.0	2		12/02/20 22:50	96-18-4	
Vinyl acetate	ND	ug/L	4.0	2		12/02/20 22:50	108-05-4	
Vinyl chloride	ND	ug/L	2.0	2		12/02/20 22:50	75-01-4	
Xylene (Total)	ND	ug/L	2.0	2		12/02/20 22:50	1330-20-7	
m&p-Xylene	ND	ug/L	4.0	2		12/02/20 22:50	179601-23-1	
o-Xylene	ND	ug/L	2.0	2		12/02/20 22:50	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	2		12/02/20 22:50	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130	2		12/02/20 22:50	17060-07-0	
Toluene-d8 (S)	101	%	70-130	2		12/02/20 22:50	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	90.9	ug/L	2.0	1		11/25/20 20:52	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%	70-130	1		11/25/20 20:52	17060-07-0	
Toluene-d8 (S)	94	%	66-133	1		11/25/20 20:52	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507929

Sample: RW-2D	Lab ID: 92507929005	Collected: 11/22/20 14:50	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/26/20 04:39	67-64-1	
Benzene	ND	ug/L	1.0	1		11/26/20 04:39	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/26/20 04:39	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/26/20 04:39	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/26/20 04:39	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/26/20 04:39	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/26/20 04:39	74-83-9	v2
2-Butanone (MEK)	ND	ug/L	5.0	1		11/26/20 04:39	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/26/20 04:39	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/26/20 04:39	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/26/20 04:39	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/26/20 04:39	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/26/20 04:39	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/26/20 04:39	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/26/20 04:39	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/26/20 04:39	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/26/20 04:39	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/26/20 04:39	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/26/20 04:39	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 04:39	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 04:39	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/26/20 04:39	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/26/20 04:39	75-71-8	
1,1-Dichloroethane	17.9	ug/L	1.0	1		11/26/20 04:39	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/26/20 04:39	107-06-2	
1,1-Dichloroethene	131	ug/L	1.0	1		11/26/20 04:39	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/26/20 04:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/26/20 04:39	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/26/20 04:39	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/26/20 04:39	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/26/20 04:39	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/26/20 04:39	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/26/20 04:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/26/20 04:39	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/26/20 04:39	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/26/20 04:39	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/26/20 04:39	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/26/20 04:39	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/26/20 04:39	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/26/20 04:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/26/20 04:39	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/26/20 04:39	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/26/20 04:39	91-20-3	
Styrene	ND	ug/L	1.0	1		11/26/20 04:39	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/26/20 04:39	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/26/20 04:39	79-34-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507929

Sample: RW-2D	Lab ID: 92507929005	Collected: 11/22/20 14:50	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		11/26/20 04:39	127-18-4	
Toluene	ND	ug/L	1.0	1		11/26/20 04:39	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/26/20 04:39	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/26/20 04:39	120-82-1	
1,1,1-Trichloroethane	5.5	ug/L	1.0	1		11/26/20 04:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/26/20 04:39	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/26/20 04:39	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/26/20 04:39	75-69-4	v1
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/26/20 04:39	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/26/20 04:39	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/26/20 04:39	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/26/20 04:39	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/26/20 04:39	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/26/20 04:39	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		11/26/20 04:39	460-00-4	
1,2-Dichloroethane-d4 (S)	119	%	70-130	1		11/26/20 04:39	17060-07-0	
Toluene-d8 (S)	100	%	70-130	1		11/26/20 04:39	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	74.5	ug/L	2.0	1		11/25/20 21:11	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	92	%	70-130	1		11/25/20 21:11	17060-07-0	
Toluene-d8 (S)	94	%	66-133	1		11/25/20 21:11	2037-26-5	

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507929

Sample: Trip Blank A	Lab ID: 92507929006	Collected: 11/22/20 00:00	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level		Analytical Method: EPA 8260D Pace Analytical Services - Charlotte						
Acetone	ND	ug/L	25.0	1		11/25/20 12:45	67-64-1	
Benzene	ND	ug/L	1.0	1		11/25/20 12:45	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		11/25/20 12:45	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		11/25/20 12:45	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		11/25/20 12:45	75-27-4	
Bromoform	ND	ug/L	1.0	1		11/25/20 12:45	75-25-2	
Bromomethane	ND	ug/L	2.0	1		11/25/20 12:45	74-83-9	IK
2-Butanone (MEK)	ND	ug/L	5.0	1		11/25/20 12:45	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		11/25/20 12:45	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		11/25/20 12:45	108-90-7	
Chloroethane	ND	ug/L	1.0	1		11/25/20 12:45	75-00-3	
Chloroform	ND	ug/L	5.0	1		11/25/20 12:45	67-66-3	
Chloromethane	ND	ug/L	1.0	1		11/25/20 12:45	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 12:45	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		11/25/20 12:45	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	1		11/25/20 12:45	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		11/25/20 12:45	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		11/25/20 12:45	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		11/25/20 12:45	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 12:45	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 12:45	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		11/25/20 12:45	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		11/25/20 12:45	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		11/25/20 12:45	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		11/25/20 12:45	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		11/25/20 12:45	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 12:45	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		11/25/20 12:45	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 12:45	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		11/25/20 12:45	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		11/25/20 12:45	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		11/25/20 12:45	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 12:45	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		11/25/20 12:45	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		11/25/20 12:45	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		11/25/20 12:45	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		11/25/20 12:45	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		11/25/20 12:45	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		11/25/20 12:45	99-87-6	
Methylene Chloride	ND	ug/L	5.0	1		11/25/20 12:45	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		11/25/20 12:45	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		11/25/20 12:45	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		11/25/20 12:45	91-20-3	
Styrene	ND	ug/L	1.0	1		11/25/20 12:45	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 12:45	630-20-6	
1,1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		11/25/20 12:45	79-34-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Kop Flex
Pace Project No.: 92507929

Sample: Trip Blank A	Lab ID: 92507929006	Collected: 11/22/20 00:00	Received: 11/24/20 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260D MSV Low Level								
Analytical Method: EPA 8260D								
Pace Analytical Services - Charlotte								
Tetrachloroethene	ND	ug/L	1.0	1		11/25/20 12:45	127-18-4	
Toluene	ND	ug/L	1.0	1		11/25/20 12:45	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 12:45	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		11/25/20 12:45	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		11/25/20 12:45	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		11/25/20 12:45	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		11/25/20 12:45	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		11/25/20 12:45	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		11/25/20 12:45	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		11/25/20 12:45	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		11/25/20 12:45	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		11/25/20 12:45	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		11/25/20 12:45	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		11/25/20 12:45	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		11/25/20 12:45	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130	1		11/25/20 12:45	17060-07-0	
Toluene-d8 (S)	98	%	70-130	1		11/25/20 12:45	2037-26-5	
8260D MSV SIM								
Analytical Method: EPA 8260D Mod.								
Pace Analytical Services - Charlotte								
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		11/24/20 16:39	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	95	%	70-130	1		11/24/20 16:39	17060-07-0	
Toluene-d8 (S)	92	%	66-133	1		11/24/20 16:39	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

QC Batch: 582948 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92507929003, 92507929006

METHOD BLANK: 3082529 Matrix: Water

Associated Lab Samples: 92507929003, 92507929006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	11/25/20 12:10	
1,1,1-Trichloroethane	ug/L	ND	1.0	11/25/20 12:10	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	11/25/20 12:10	
1,1,2-Trichloroethane	ug/L	ND	1.0	11/25/20 12:10	
1,1-Dichloroethane	ug/L	ND	1.0	11/25/20 12:10	
1,1-Dichloroethene	ug/L	ND	1.0	11/25/20 12:10	
1,1-Dichloropropene	ug/L	ND	1.0	11/25/20 12:10	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	11/25/20 12:10	
1,2,3-Trichloropropane	ug/L	ND	1.0	11/25/20 12:10	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	11/25/20 12:10	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	11/25/20 12:10	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	11/25/20 12:10	
1,2-Dichlorobenzene	ug/L	ND	1.0	11/25/20 12:10	
1,2-Dichloroethane	ug/L	ND	1.0	11/25/20 12:10	
1,2-Dichloropropane	ug/L	ND	1.0	11/25/20 12:10	
1,3-Dichlorobenzene	ug/L	ND	1.0	11/25/20 12:10	
1,3-Dichloropropane	ug/L	ND	1.0	11/25/20 12:10	
1,4-Dichlorobenzene	ug/L	ND	1.0	11/25/20 12:10	
2,2-Dichloropropane	ug/L	ND	1.0	11/25/20 12:10	
2-Butanone (MEK)	ug/L	ND	5.0	11/25/20 12:10	
2-Chlorotoluene	ug/L	ND	1.0	11/25/20 12:10	
2-Hexanone	ug/L	ND	5.0	11/25/20 12:10	
4-Chlorotoluene	ug/L	ND	1.0	11/25/20 12:10	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	11/25/20 12:10	
Acetone	ug/L	ND	25.0	11/25/20 12:10	
Benzene	ug/L	ND	1.0	11/25/20 12:10	
Bromobenzene	ug/L	ND	1.0	11/25/20 12:10	
Bromochloromethane	ug/L	ND	1.0	11/25/20 12:10	
Bromodichloromethane	ug/L	ND	1.0	11/25/20 12:10	
Bromoform	ug/L	ND	1.0	11/25/20 12:10	
Bromomethane	ug/L	ND	2.0	11/25/20 12:10	IK
Carbon tetrachloride	ug/L	ND	1.0	11/25/20 12:10	
Chlorobenzene	ug/L	ND	1.0	11/25/20 12:10	
Chloroethane	ug/L	ND	1.0	11/25/20 12:10	
Chloroform	ug/L	ND	5.0	11/25/20 12:10	
Chloromethane	ug/L	ND	1.0	11/25/20 12:10	
cis-1,2-Dichloroethene	ug/L	ND	1.0	11/25/20 12:10	
cis-1,3-Dichloropropene	ug/L	ND	1.0	11/25/20 12:10	
Dibromochloromethane	ug/L	ND	1.0	11/25/20 12:10	
Dibromomethane	ug/L	ND	1.0	11/25/20 12:10	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

METHOD BLANK: 3082529 Matrix: Water
Associated Lab Samples: 92507929003, 92507929006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	11/25/20 12:10	
Diisopropyl ether	ug/L	ND	1.0	11/25/20 12:10	
Ethylbenzene	ug/L	ND	1.0	11/25/20 12:10	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	11/25/20 12:10	
m&p-Xylene	ug/L	ND	2.0	11/25/20 12:10	
Methyl-tert-butyl ether	ug/L	ND	1.0	11/25/20 12:10	
Methylene Chloride	ug/L	ND	5.0	11/25/20 12:10	
Naphthalene	ug/L	ND	1.0	11/25/20 12:10	
o-Xylene	ug/L	ND	1.0	11/25/20 12:10	
p-Isopropyltoluene	ug/L	ND	1.0	11/25/20 12:10	
Styrene	ug/L	ND	1.0	11/25/20 12:10	
Tetrachloroethene	ug/L	ND	1.0	11/25/20 12:10	
Toluene	ug/L	ND	1.0	11/25/20 12:10	
trans-1,2-Dichloroethene	ug/L	ND	1.0	11/25/20 12:10	
trans-1,3-Dichloropropene	ug/L	ND	1.0	11/25/20 12:10	
Trichloroethene	ug/L	ND	1.0	11/25/20 12:10	
Trichlorofluoromethane	ug/L	ND	1.0	11/25/20 12:10	
Vinyl acetate	ug/L	ND	2.0	11/25/20 12:10	
Vinyl chloride	ug/L	ND	1.0	11/25/20 12:10	
Xylene (Total)	ug/L	ND	1.0	11/25/20 12:10	
1,2-Dichloroethane-d4 (S)	%	96	70-130	11/25/20 12:10	
4-Bromofluorobenzene (S)	%	101	70-130	11/25/20 12:10	
Toluene-d8 (S)	%	100	70-130	11/25/20 12:10	

LABORATORY CONTROL SAMPLE: 3082530

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	48.0	96	70-130	
1,1,1-Trichloroethane	ug/L	50	47.8	96	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	46.5	93	70-130	
1,1,2-Trichloroethane	ug/L	50	43.6	87	70-130	
1,1-Dichloroethane	ug/L	50	48.5	97	70-130	
1,1-Dichloroethene	ug/L	50	50.9	102	70-132	
1,1-Dichloropropene	ug/L	50	49.9	100	70-131	
1,2,3-Trichlorobenzene	ug/L	50	48.9	98	70-134	
1,2,3-Trichloropropane	ug/L	50	47.8	96	70-130	
1,2,4-Trichlorobenzene	ug/L	50	50.9	102	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	48.0	96	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	48.0	96	70-130	
1,2-Dichlorobenzene	ug/L	50	49.6	99	70-130	
1,2-Dichloroethane	ug/L	50	45.5	91	70-130	
1,2-Dichloropropane	ug/L	50	48.1	96	70-130	
1,3-Dichlorobenzene	ug/L	50	46.7	93	70-130	
1,3-Dichloropropane	ug/L	50	50.9	102	70-130	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

LABORATORY CONTROL SAMPLE: 3082530

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	48.2	96	70-130	
2,2-Dichloropropane	ug/L	50	55.4	111	70-130	
2-Butanone (MEK)	ug/L	100	93.4	93	70-133	
2-Chlorotoluene	ug/L	50	47.6	95	70-130	
2-Hexanone	ug/L	100	88.1	88	70-130	
4-Chlorotoluene	ug/L	50	46.8	94	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	87.8	88	70-130	
Acetone	ug/L	100	94.7	95	70-144	
Benzene	ug/L	50	47.6	95	70-130	
Bromobenzene	ug/L	50	47.5	95	70-130	
Bromochloromethane	ug/L	50	48.1	96	70-130	
Bromodichloromethane	ug/L	50	43.6	87	70-130	
Bromoform	ug/L	50	49.1	98	70-131	
Bromomethane	ug/L	50	54.5	109	30-177	IK
Carbon tetrachloride	ug/L	50	48.3	97	70-130	
Chlorobenzene	ug/L	50	47.2	94	70-130	
Chloroethane	ug/L	50	42.9	86	46-131	
Chloroform	ug/L	50	48.9	98	70-130	
Chloromethane	ug/L	50	50.2	100	49-130	
cis-1,2-Dichloroethene	ug/L	50	47.5	95	70-130	
cis-1,3-Dichloropropene	ug/L	50	49.5	99	70-130	
Dibromochloromethane	ug/L	50	51.3	103	70-130	
Dibromomethane	ug/L	50	46.5	93	70-130	
Dichlorodifluoromethane	ug/L	50	48.0	96	52-134	
Diisopropyl ether	ug/L	50	45.3	91	70-131	
Ethylbenzene	ug/L	50	47.2	94	70-130	
Hexachloro-1,3-butadiene	ug/L	50	50.6	101	70-131	
m&p-Xylene	ug/L	100	93.8	94	70-130	
Methyl-tert-butyl ether	ug/L	50	46.4	93	70-130	
Methylene Chloride	ug/L	50	45.9	92	68-130	
Naphthalene	ug/L	50	48.3	97	70-133	
o-Xylene	ug/L	50	47.1	94	70-130	
p-Isopropyltoluene	ug/L	50	48.8	98	70-130	
Styrene	ug/L	50	46.6	93	70-130	
Tetrachloroethene	ug/L	50	47.2	94	70-130	
Toluene	ug/L	50	45.9	92	70-130	
trans-1,2-Dichloroethene	ug/L	50	50.0	100	70-130	
trans-1,3-Dichloropropene	ug/L	50	50.6	101	70-130	
Trichloroethene	ug/L	50	49.0	98	70-130	
Trichlorofluoromethane	ug/L	50	48.2	96	61-130	
Vinyl acetate	ug/L	100	119	119	70-140	
Vinyl chloride	ug/L	50	48.0	96	59-142	
Xylene (Total)	ug/L	150	141	94	70-130	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			98	70-130	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082531 3082532												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92507532001 Result	Spike Conc.	Spike Conc.	MS Result							
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	20.8	24.1	104	120	70-135	14	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	21.0	25.4	105	127	70-148	19	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.8	24.3	104	122	70-131	16	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	20.1	24.3	100	122	70-136	19	30	
1,1-Dichloroethane	ug/L	ND	20	20	22.9	26.7	114	134	70-147	16	30	
1,1-Dichloroethene	ug/L	ND	20	20	23.1	26.7	116	134	70-158	14	30	
1,1-Dichloropropene	ug/L	ND	20	20	23.1	27.2	115	136	70-149	16	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	20.8	22.6	104	113	68-140	9	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	20.5	25.5	102	128	67-137	22	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	22.0	24.2	110	121	70-139	10	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	19.6	23.6	98	118	69-136	18	30	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	21.5	26.1	108	130	70-137	19	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	21.3	23.7	106	118	70-133	11	30	
1,2-Dichloroethane	ug/L	ND	20	20	20.8	24.6	104	123	67-138	17	30	
1,2-Dichloropropane	ug/L	ND	20	20	22.3	26.9	112	135	70-138	19	30	
1,3-Dichlorobenzene	ug/L	ND	20	20	20.4	22.2	102	111	70-133	8	30	
1,3-Dichloropropane	ug/L	ND	20	20	24.0	27.9	120	139	70-136	15	30	M1
1,4-Dichlorobenzene	ug/L	ND	20	20	20.8	22.9	104	115	70-133	10	30	
2,2-Dichloropropane	ug/L	ND	20	20	23.8	28.5	119	143	52-155	18	30	
2-Butanone (MEK)	ug/L	ND	40	40	39.9	44.6	100	112	61-147	11	30	
2-Chlorotoluene	ug/L	ND	20	20	21.2	22.3	106	111	70-141	5	30	
2-Hexanone	ug/L	ND	40	40	37.6	43.9	94	110	67-139	15	30	
4-Chlorotoluene	ug/L	ND	20	20	20.5	22.2	103	111	70-135	8	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	38.9	44.2	97	111	67-136	13	30	
Acetone	ug/L	ND	40	40	42.6	41.4	106	103	55-159	3	30	
Benzene	ug/L	ND	20	20	23.2	26.3	116	132	67-150	13	30	
Bromobenzene	ug/L	ND	20	20	20.8	22.4	104	112	70-134	7	30	
Bromochloromethane	ug/L	ND	20	20	23.1	26.5	115	133	70-146	14	30	
Bromodichloromethane	ug/L	ND	20	20	20.2	23.2	101	116	70-138	14	30	
Bromoform	ug/L	ND	20	20	19.5	24.6	97	123	57-138	23	30	
Bromomethane	ug/L	ND	20	20	29.5	35.1	147	176	10-200	17	30	IK
Carbon tetrachloride	ug/L	ND	20	20	21.4	26.0	107	130	70-147	20	30	
Chlorobenzene	ug/L	ND	20	20	21.4	24.8	107	124	70-137	15	30	
Chloroethane	ug/L	ND	20	20	22.8	36.2	114	181	51-166	45	30	M1,R1
Chloroform	ug/L	ND	20	20	22.2	26.2	111	131	70-144	16	30	
Chloromethane	ug/L	ND	20	20	22.6	337	113	1680	24-161	175	30	E,M1,R1
cis-1,2-Dichloroethene	ug/L	ND	20	20	22.3	25.5	112	128	67-148	13	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	23.4	21.5	117	108	70-142	9	30	
Dibromochloromethane	ug/L	ND	20	20	21.9	27.0	109	135	68-138	21	30	
Dibromomethane	ug/L	ND	20	20	21.4	25.1	107	126	70-134	16	30	
Dichlorodifluoromethane	ug/L	ND	20	20	20.9	25.8	104	129	43-155	21	30	
Diisopropyl ether	ug/L	ND	20	20	20.4	23.3	102	116	65-146	13	30	
Ethylbenzene	ug/L	ND	20	20	20.8	24.2	104	121	68-143	15	30	

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QUALITY CONTROL DATA

Project: Kop Flex

Pace Project No.: 92507929

Parameter	Units	3082531		3082532		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92507532001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Hexachloro-1,3-butadiene	ug/L	ND	20	20	21.2	23.7	106	119	62-151	11	30		
m&p-Xylene	ug/L	ND	40	40	41.1	47.3	103	118	53-157	14	30		
Methyl-tert-butyl ether	ug/L	ND	20	20	20.9	24.1	104	121	59-156	15	30		
Methylene Chloride	ug/L	ND	20	20	21.5	24.7	107	124	64-148	14	30		
Naphthalene	ug/L	ND	20	20	20.9	22.5	104	112	57-150	7	30		
o-Xylene	ug/L	ND	20	20	20.7	23.8	103	119	68-143	14	30		
p-Isopropyltoluene	ug/L	ND	20	20	20.4	23.6	102	118	70-141	14	30		
Styrene	ug/L	ND	20	20	21.2	24.3	106	122	70-136	13	30		
Tetrachloroethene	ug/L	ND	20	20	20.0	23.4	100	117	70-139	16	30		
Toluene	ug/L	ND	20	20	21.6	24.5	108	122	47-157	12	30		
trans-1,2-Dichloroethene	ug/L	ND	20	20	22.7	26.7	114	133	70-149	16	30		
trans-1,3-Dichloropropene	ug/L	ND	20	20	22.3	24.5	111	123	70-138	10	30		
Trichloroethene	ug/L	ND	20	20	22.0	25.7	110	128	70-149	15	30		
Trichlorofluoromethane	ug/L	ND	20	20	21.4	24.4	107	122	61-154	13	30		
Vinyl acetate	ug/L	ND	40	40	52.6	62.3	132	156	48-156	17	30		
Vinyl chloride	ug/L	ND	20	20	20.7	23.8	103	119	55-172	14	30		
Xylene (Total)	ug/L	ND	60	60	61.8	71.1	103	119	66-145	14	30		
1,2-Dichloroethane-d4 (S)	%						96	99	70-130				
4-Bromofluorobenzene (S)	%						100	101	70-130				
Toluene-d8 (S)	%						100	99	70-130				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

QC Batch: 582949	Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D	Analysis Description: 8260D MSV Low Level
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92507929001

METHOD BLANK: 3082534 Matrix: Water

Associated Lab Samples: 92507929001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	11/25/20 12:48	
1,1,1-Trichloroethane	ug/L	ND	1.0	11/25/20 12:48	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	11/25/20 12:48	
1,1,2-Trichloroethane	ug/L	ND	1.0	11/25/20 12:48	
1,1-Dichloroethane	ug/L	ND	1.0	11/25/20 12:48	
1,1-Dichloroethene	ug/L	ND	1.0	11/25/20 12:48	
1,1-Dichloropropene	ug/L	ND	1.0	11/25/20 12:48	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	11/25/20 12:48	
1,2,3-Trichloropropane	ug/L	ND	1.0	11/25/20 12:48	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	11/25/20 12:48	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	11/25/20 12:48	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	11/25/20 12:48	
1,2-Dichlorobenzene	ug/L	ND	1.0	11/25/20 12:48	
1,2-Dichloroethane	ug/L	ND	1.0	11/25/20 12:48	
1,2-Dichloropropane	ug/L	ND	1.0	11/25/20 12:48	
1,3-Dichlorobenzene	ug/L	ND	1.0	11/25/20 12:48	
1,3-Dichloropropane	ug/L	ND	1.0	11/25/20 12:48	
1,4-Dichlorobenzene	ug/L	ND	1.0	11/25/20 12:48	
2,2-Dichloropropane	ug/L	ND	1.0	11/25/20 12:48	
2-Butanone (MEK)	ug/L	ND	5.0	11/25/20 12:48	
2-Chlorotoluene	ug/L	ND	1.0	11/25/20 12:48	
2-Hexanone	ug/L	ND	5.0	11/25/20 12:48	
4-Chlorotoluene	ug/L	ND	1.0	11/25/20 12:48	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	11/25/20 12:48	
Acetone	ug/L	ND	25.0	11/25/20 12:48	
Benzene	ug/L	ND	1.0	11/25/20 12:48	
Bromobenzene	ug/L	ND	1.0	11/25/20 12:48	
Bromochloromethane	ug/L	ND	1.0	11/25/20 12:48	
Bromodichloromethane	ug/L	ND	1.0	11/25/20 12:48	
Bromoform	ug/L	ND	1.0	11/25/20 12:48	
Bromomethane	ug/L	ND	2.0	11/25/20 12:48	v2
Carbon tetrachloride	ug/L	ND	1.0	11/25/20 12:48	
Chlorobenzene	ug/L	ND	1.0	11/25/20 12:48	
Chloroethane	ug/L	ND	1.0	11/25/20 12:48	
Chloroform	ug/L	ND	5.0	11/25/20 12:48	
Chloromethane	ug/L	ND	1.0	11/25/20 12:48	v2
cis-1,2-Dichloroethene	ug/L	ND	1.0	11/25/20 12:48	
cis-1,3-Dichloropropene	ug/L	ND	1.0	11/25/20 12:48	
Dibromochloromethane	ug/L	ND	1.0	11/25/20 12:48	
Dibromomethane	ug/L	ND	1.0	11/25/20 12:48	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

METHOD BLANK: 3082534 Matrix: Water
Associated Lab Samples: 92507929001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	11/25/20 12:48	
Diisopropyl ether	ug/L	ND	1.0	11/25/20 12:48	
Ethylbenzene	ug/L	ND	1.0	11/25/20 12:48	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	11/25/20 12:48	
m&p-Xylene	ug/L	ND	2.0	11/25/20 12:48	
Methyl-tert-butyl ether	ug/L	ND	1.0	11/25/20 12:48	
Methylene Chloride	ug/L	ND	5.0	11/25/20 12:48	
Naphthalene	ug/L	ND	1.0	11/25/20 12:48	
o-Xylene	ug/L	ND	1.0	11/25/20 12:48	
p-Isopropyltoluene	ug/L	ND	1.0	11/25/20 12:48	
Styrene	ug/L	ND	1.0	11/25/20 12:48	
Tetrachloroethene	ug/L	ND	1.0	11/25/20 12:48	
Toluene	ug/L	ND	1.0	11/25/20 12:48	
trans-1,2-Dichloroethene	ug/L	ND	1.0	11/25/20 12:48	
trans-1,3-Dichloropropene	ug/L	ND	1.0	11/25/20 12:48	
Trichloroethene	ug/L	ND	1.0	11/25/20 12:48	
Trichlorofluoromethane	ug/L	ND	1.0	11/25/20 12:48	
Vinyl acetate	ug/L	ND	2.0	11/25/20 12:48	
Vinyl chloride	ug/L	ND	1.0	11/25/20 12:48	
Xylene (Total)	ug/L	ND	1.0	11/25/20 12:48	
1,2-Dichloroethane-d4 (S)	%	97	70-130	11/25/20 12:48	
4-Bromofluorobenzene (S)	%	98	70-130	11/25/20 12:48	
Toluene-d8 (S)	%	101	70-130	11/25/20 12:48	

LABORATORY CONTROL SAMPLE: 3082535

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	63.8	128	70-130	
1,1,1-Trichloroethane	ug/L	50	46.9	94	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	63.3	127	70-130	
1,1,2-Trichloroethane	ug/L	50	51.2	102	70-130	
1,1-Dichloroethane	ug/L	50	46.3	93	70-130	
1,1-Dichloroethene	ug/L	50	47.2	94	70-132	
1,1-Dichloropropene	ug/L	50	49.6	99	70-131	
1,2,3-Trichlorobenzene	ug/L	50	63.6	127	70-134	
1,2,3-Trichloropropane	ug/L	50	61.7	123	70-130	
1,2,4-Trichlorobenzene	ug/L	50	64.2	128	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	65.0	130	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	64.6	129	70-130	
1,2-Dichlorobenzene	ug/L	50	63.9	128	70-130	
1,2-Dichloroethane	ug/L	50	45.3	91	70-130	
1,2-Dichloropropane	ug/L	50	51.7	103	70-130	
1,3-Dichlorobenzene	ug/L	50	64.4	129	70-130	
1,3-Dichloropropane	ug/L	50	65.6	131	70-130 L1	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

LABORATORY CONTROL SAMPLE: 3082535

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	64.3	129	70-130	
2,2-Dichloropropane	ug/L	50	47.4	95	70-130	
2-Butanone (MEK)	ug/L	100	93.7	94	70-133	
2-Chlorotoluene	ug/L	50	71.5	143	70-130	L1
2-Hexanone	ug/L	100	119	119	70-130	
4-Chlorotoluene	ug/L	50	64.3	129	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	95.3	95	70-130	
Acetone	ug/L	100	97.0	97	70-144	
Benzene	ug/L	50	50.0	100	70-130	
Bromobenzene	ug/L	50	64.7	129	70-130	
Bromochloromethane	ug/L	50	46.2	92	70-130	
Bromodichloromethane	ug/L	50	47.7	95	70-130	
Bromoform	ug/L	50	61.5	123	70-131	
Bromomethane	ug/L	50	43.1	86	30-177	v3
Carbon tetrachloride	ug/L	50	48.4	97	70-130	
Chlorobenzene	ug/L	50	60.7	121	70-130	
Chloroethane	ug/L	50	41.4	83	46-131	
Chloroform	ug/L	50	47.1	94	70-130	
Chloromethane	ug/L	50	43.2	86	49-130	v3
cis-1,2-Dichloroethene	ug/L	50	45.2	90	70-130	
cis-1,3-Dichloropropene	ug/L	50	54.8	110	70-130	
Dibromochloromethane	ug/L	50	66.3	133	70-130	L1
Dibromomethane	ug/L	50	48.7	97	70-130	
Dichlorodifluoromethane	ug/L	50	42.7	85	52-134	
Diisopropyl ether	ug/L	50	47.7	95	70-131	
Ethylbenzene	ug/L	50	58.9	118	70-130	
Hexachloro-1,3-butadiene	ug/L	50	62.2	124	70-131	
m&p-Xylene	ug/L	100	120	120	70-130	
Methyl-tert-butyl ether	ug/L	50	48.1	96	70-130	
Methylene Chloride	ug/L	50	44.0	88	68-130	
Naphthalene	ug/L	50	64.1	128	70-133	
o-Xylene	ug/L	50	61.1	122	70-130	
p-Isopropyltoluene	ug/L	50	64.3	129	70-130	
Styrene	ug/L	50	61.8	124	70-130	
Tetrachloroethene	ug/L	50	59.6	119	70-130	
Toluene	ug/L	50	47.7	95	70-130	
trans-1,2-Dichloroethene	ug/L	50	46.2	92	70-130	
trans-1,3-Dichloropropene	ug/L	50	53.5	107	70-130	
Trichloroethene	ug/L	50	51.2	102	70-130	
Trichlorofluoromethane	ug/L	50	46.2	92	61-130	
Vinyl acetate	ug/L	100	119	119	70-140	
Vinyl chloride	ug/L	50	42.7	85	59-142	
Xylene (Total)	ug/L	150	181	121	70-130	
1,2-Dichloroethane-d4 (S)	%			94	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			93	70-130	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3082536 3082537												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92507929001 Result	Spike Conc.	Spike Conc.	MS Result							
1,1,1,2-Tetrachloroethane	ug/L	ND	50	50	54.5	52.9	109	106	70-135	3	30	
1,1,1-Trichloroethane	ug/L	65.4	50	50	115	142	100	152	70-148	20	30	M1
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	53.1	49.7	106	99	70-131	7	30	
1,1,2-Trichloroethane	ug/L	ND	50	50	43.8	51.8	88	104	70-136	17	30	
1,1-Dichloroethane	ug/L	81.2	50	50	138	156	114	150	70-147	12	30	M1
1,1-Dichloroethene	ug/L	344	50	50	263	419	-162	150	70-158	46	30	M1,R1
1,1-Dichloropropene	ug/L	ND	50	50	61.4	63.8	123	128	70-149	4	30	
1,2,3-Trichlorobenzene	ug/L	ND	50	50	47.9	42.8	96	86	68-140	11	30	
1,2,3-Trichloropropane	ug/L	ND	50	50	50.7	49.2	101	98	67-137	3	30	
1,2,4-Trichlorobenzene	ug/L	ND	50	50	48.3	44.2	97	88	70-139	9	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	52.8	51.7	106	103	69-136	2	30	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	51.5	52.2	103	104	70-137	1	30	
1,2-Dichlorobenzene	ug/L	ND	50	50	50.9	50.5	102	101	70-133	1	30	
1,2-Dichloroethane	ug/L	ND	50	50	54.4	55.6	105	108	67-138	2	30	
1,2-Dichloropropane	ug/L	ND	50	50	48.0	56.4	96	113	70-138	16	30	
1,3-Dichlorobenzene	ug/L	ND	50	50	52.5	50.8	105	102	70-133	3	30	
1,3-Dichloropropane	ug/L	ND	50	50	51.0	52.6	102	105	70-136	3	30	
1,4-Dichlorobenzene	ug/L	ND	50	50	52.4	51.2	105	102	70-133	2	30	
2,2-Dichloropropane	ug/L	ND	50	50	57.9	60.0	116	120	52-155	3	30	
2-Butanone (MEK)	ug/L	ND	100	100	110	112	110	112	61-147	2	30	
2-Chlorotoluene	ug/L	ND	50	50	53.9	53.9	108	108	70-141	0	30	
2-Hexanone	ug/L	ND	100	100	98.3	99.5	98	100	67-139	1	30	
4-Chlorotoluene	ug/L	ND	50	50	58.3	52.6	117	105	70-135	10	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	100	81.6	96.8	82	97	67-136	17	30	
Acetone	ug/L	ND	100	100	118	112	118	112	55-159	5	30	
Benzene	ug/L	ND	50	50	55.2	53.6	108	105	67-150	3	30	
Bromobenzene	ug/L	ND	50	50	59.6	53.1	119	106	70-134	12	30	
Bromochloromethane	ug/L	ND	50	50	58.9	59.5	118	119	70-146	1	30	
Bromodichloromethane	ug/L	ND	50	50	44.8	51.5	90	103	70-138	14	30	
Bromoform	ug/L	ND	50	50	59.4	49.1	119	98	57-138	19	30	
Bromomethane	ug/L	ND	50	50	71.5	69.5	143	139	10-200	3	30	
Carbon tetrachloride	ug/L	ND	50	50	56.2	56.3	112	113	70-147	0	30	
Chlorobenzene	ug/L	ND	50	50	51.5	53.2	103	106	70-137	3	30	
Chloroethane	ug/L	12.8	50	50	69.0	74.0	112	122	51-166	7	30	
Chloroform	ug/L	ND	50	50	57.8	58.2	116	116	70-144	1	30	
Chloromethane	ug/L	ND	50	50	54.5	57.1	109	114	24-161	5	30	
cis-1,2-Dichloroethene	ug/L	ND	50	50	58.2	60.9	113	118	67-148	5	30	
cis-1,3-Dichloropropene	ug/L	ND	50	50	45.3	53.9	91	108	70-142	17	30	
Dibromochloromethane	ug/L	ND	50	50	56.6	54.9	113	110	68-138	3	30	
Dibromomethane	ug/L	ND	50	50	48.6	51.7	97	103	70-134	6	30	
Dichlorodifluoromethane	ug/L	ND	50	50	51.8	51.7	104	103	43-155	0	30	
Diisopropyl ether	ug/L	ND	50	50	55.1	56.7	110	113	65-146	3	30	
Ethylbenzene	ug/L	ND	50	50	56.0	53.3	112	107	68-143	5	30	
Hexachloro-1,3-butadiene	ug/L	ND	50	50	54.9	50.4	110	101	62-151	8	30	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

Parameter	Units	3082536		3082537		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92507929001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
m&p-Xylene	ug/L	ND	100	100	109	105	109	105	53-157	4	30	
Methyl-tert-butyl ether	ug/L	ND	50	50	56.8	57.5	114	115	59-156	1	30	
Methylene Chloride	ug/L	ND	50	50	58.9	59.4	118	119	64-148	1	30	
Naphthalene	ug/L	ND	50	50	47.7	41.4	95	83	57-150	14	30	
o-Xylene	ug/L	ND	50	50	52.3	53.2	105	106	68-143	2	30	
p-Isopropyltoluene	ug/L	ND	50	50	53.5	54.8	107	110	70-141	2	30	
Styrene	ug/L	ND	50	50	58.6	51.8	117	104	70-136	12	30	
Tetrachloroethene	ug/L	ND	50	50	52.7	51.4	105	103	70-139	2	30	
Toluene	ug/L	ND	50	50	45.6	53.1	87	102	47-157	15	30	
trans-1,2-Dichloroethene	ug/L	ND	50	50	63.0	61.4	126	123	70-149	3	30	
trans-1,3-Dichloropropene	ug/L	ND	50	50	43.4	50.3	87	101	70-138	15	30	
Trichloroethene	ug/L	ND	50	50	57.2	57.7	111	112	70-149	1	30	
Trichlorofluoromethane	ug/L	ND	50	50	59.6	60.6	119	121	61-154	2	30	
Vinyl acetate	ug/L	ND	100	100	127	129	127	129	48-156	2	30	
Vinyl chloride	ug/L	3.4	50	50	62.6	63.3	118	120	55-172	1	30	
Xylene (Total)	ug/L	ND	150	150	162	158	108	106	66-145	2	30	
1,2-Dichloroethane-d4 (S)	%						103	104	70-130			
4-Bromofluorobenzene (S)	%						103	96	70-130			
Toluene-d8 (S)	%						84	98	70-130			

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

QC Batch: 583045 Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D Analysis Description: 8260D MSV Low Level
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92507929002, 92507929005

METHOD BLANK: 3083148 Matrix: Water

Associated Lab Samples: 92507929002, 92507929005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	11/26/20 00:23	
1,1,1-Trichloroethane	ug/L	ND	1.0	11/26/20 00:23	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	11/26/20 00:23	
1,1,2-Trichloroethane	ug/L	ND	1.0	11/26/20 00:23	
1,1-Dichloroethane	ug/L	ND	1.0	11/26/20 00:23	
1,1-Dichloroethene	ug/L	ND	1.0	11/26/20 00:23	
1,1-Dichloropropene	ug/L	ND	1.0	11/26/20 00:23	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	11/26/20 00:23	
1,2,3-Trichloropropane	ug/L	ND	1.0	11/26/20 00:23	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	11/26/20 00:23	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	11/26/20 00:23	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	11/26/20 00:23	
1,2-Dichlorobenzene	ug/L	ND	1.0	11/26/20 00:23	
1,2-Dichloroethane	ug/L	ND	1.0	11/26/20 00:23	
1,2-Dichloropropane	ug/L	ND	1.0	11/26/20 00:23	
1,3-Dichlorobenzene	ug/L	ND	1.0	11/26/20 00:23	
1,3-Dichloropropane	ug/L	ND	1.0	11/26/20 00:23	
1,4-Dichlorobenzene	ug/L	ND	1.0	11/26/20 00:23	
2,2-Dichloropropane	ug/L	ND	1.0	11/26/20 00:23	
2-Butanone (MEK)	ug/L	ND	5.0	11/26/20 00:23	
2-Chlorotoluene	ug/L	ND	1.0	11/26/20 00:23	
2-Hexanone	ug/L	ND	5.0	11/26/20 00:23	
4-Chlorotoluene	ug/L	ND	1.0	11/26/20 00:23	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	11/26/20 00:23	
Acetone	ug/L	ND	25.0	11/26/20 00:23	
Benzene	ug/L	ND	1.0	11/26/20 00:23	
Bromobenzene	ug/L	ND	1.0	11/26/20 00:23	
Bromochloromethane	ug/L	ND	1.0	11/26/20 00:23	
Bromodichloromethane	ug/L	ND	1.0	11/26/20 00:23	
Bromoform	ug/L	ND	1.0	11/26/20 00:23	
Bromomethane	ug/L	ND	2.0	11/26/20 00:23	v2
Carbon tetrachloride	ug/L	ND	1.0	11/26/20 00:23	
Chlorobenzene	ug/L	ND	1.0	11/26/20 00:23	
Chloroethane	ug/L	ND	1.0	11/26/20 00:23	
Chloroform	ug/L	ND	5.0	11/26/20 00:23	
Chloromethane	ug/L	ND	1.0	11/26/20 00:23	
cis-1,2-Dichloroethene	ug/L	ND	1.0	11/26/20 00:23	
cis-1,3-Dichloropropene	ug/L	ND	1.0	11/26/20 00:23	
Dibromochloromethane	ug/L	ND	1.0	11/26/20 00:23	
Dibromomethane	ug/L	ND	1.0	11/26/20 00:23	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

METHOD BLANK: 3083148 Matrix: Water
Associated Lab Samples: 92507929002, 92507929005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	11/26/20 00:23	
Diisopropyl ether	ug/L	ND	1.0	11/26/20 00:23	
Ethylbenzene	ug/L	ND	1.0	11/26/20 00:23	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	11/26/20 00:23	
m&p-Xylene	ug/L	ND	2.0	11/26/20 00:23	
Methyl-tert-butyl ether	ug/L	ND	1.0	11/26/20 00:23	
Methylene Chloride	ug/L	ND	5.0	11/26/20 00:23	
Naphthalene	ug/L	ND	1.0	11/26/20 00:23	
o-Xylene	ug/L	ND	1.0	11/26/20 00:23	
p-Isopropyltoluene	ug/L	ND	1.0	11/26/20 00:23	
Styrene	ug/L	ND	1.0	11/26/20 00:23	
Tetrachloroethene	ug/L	ND	1.0	11/26/20 00:23	
Toluene	ug/L	ND	1.0	11/26/20 00:23	
trans-1,2-Dichloroethene	ug/L	ND	1.0	11/26/20 00:23	
trans-1,3-Dichloropropene	ug/L	ND	1.0	11/26/20 00:23	
Trichloroethene	ug/L	ND	1.0	11/26/20 00:23	
Trichlorofluoromethane	ug/L	ND	1.0	11/26/20 00:23	v1
Vinyl acetate	ug/L	ND	2.0	11/26/20 00:23	
Vinyl chloride	ug/L	ND	1.0	11/26/20 00:23	
Xylene (Total)	ug/L	ND	1.0	11/26/20 00:23	
1,2-Dichloroethane-d4 (S)	%	118	70-130	11/26/20 00:23	
4-Bromofluorobenzene (S)	%	100	70-130	11/26/20 00:23	
Toluene-d8 (S)	%	103	70-130	11/26/20 00:23	

LABORATORY CONTROL SAMPLE: 3083149

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	55.9	112	70-130	
1,1,1-Trichloroethane	ug/L	50	60.4	121	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	51.8	104	70-130	
1,1,2-Trichloroethane	ug/L	50	53.9	108	70-130	
1,1-Dichloroethane	ug/L	50	54.5	109	70-130	
1,1-Dichloroethene	ug/L	50	62.3	125	70-132	
1,1-Dichloropropene	ug/L	50	53.4	107	70-131	
1,2,3-Trichlorobenzene	ug/L	50	57.4	115	70-134	
1,2,3-Trichloropropane	ug/L	50	53.8	108	70-130	
1,2,4-Trichlorobenzene	ug/L	50	56.7	113	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	55.9	112	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	53.9	108	70-130	
1,2-Dichlorobenzene	ug/L	50	51.1	102	70-130	
1,2-Dichloroethane	ug/L	50	59.8	120	70-130	
1,2-Dichloropropane	ug/L	50	49.8	100	70-130	
1,3-Dichlorobenzene	ug/L	50	50.5	101	70-130	
1,3-Dichloropropane	ug/L	50	51.7	103	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

LABORATORY CONTROL SAMPLE: 3083149

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	50.2	100	70-130	
2,2-Dichloropropane	ug/L	50	59.1	118	70-130	
2-Butanone (MEK)	ug/L	100	115	115	70-133	
2-Chlorotoluene	ug/L	50	50.2	100	70-130	
2-Hexanone	ug/L	100	116	116	70-130	
4-Chlorotoluene	ug/L	50	48.6	97	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	112	112	70-130	
Acetone	ug/L	100	130	130	70-144	
Benzene	ug/L	50	50.5	101	70-130	
Bromobenzene	ug/L	50	50.7	101	70-130	
Bromochloromethane	ug/L	50	51.6	103	70-130	
Bromodichloromethane	ug/L	50	51.7	103	70-130	
Bromoform	ug/L	50	54.6	109	70-131	
Bromomethane	ug/L	50	47.4	95	30-177 v3	
Carbon tetrachloride	ug/L	50	62.9	126	70-130	
Chlorobenzene	ug/L	50	50.6	101	70-130	
Chloroethane	ug/L	50	54.3	109	46-131	
Chloroform	ug/L	50	52.3	105	70-130	
Chloromethane	ug/L	50	42.7	85	49-130	
cis-1,2-Dichloroethene	ug/L	50	53.4	107	70-130	
cis-1,3-Dichloropropene	ug/L	50	55.0	110	70-130	
Dibromochloromethane	ug/L	50	56.2	112	70-130	
Dibromomethane	ug/L	50	55.6	111	70-130	
Dichlorodifluoromethane	ug/L	50	56.0	112	52-134	
Diisopropyl ether	ug/L	50	50.1	100	70-131	
Ethylbenzene	ug/L	50	50.7	101	70-130	
Hexachloro-1,3-butadiene	ug/L	50	57.7	115	70-131	
m&p-Xylene	ug/L	100	105	105	70-130	
Methyl-tert-butyl ether	ug/L	50	54.1	108	70-130	
Methylene Chloride	ug/L	50	51.7	103	68-130	
Naphthalene	ug/L	50	56.7	113	70-133	
o-Xylene	ug/L	50	50.2	100	70-130	
p-Isopropyltoluene	ug/L	50	49.9	100	70-130	
Styrene	ug/L	50	51.8	104	70-130	
Tetrachloroethene	ug/L	50	52.6	105	70-130	
Toluene	ug/L	50	51.6	103	70-130	
trans-1,2-Dichloroethene	ug/L	50	56.0	112	70-130	
trans-1,3-Dichloropropene	ug/L	50	55.8	112	70-130	
Trichloroethene	ug/L	50	56.1	112	70-130	
Trichlorofluoromethane	ug/L	50	61.5	123	61-130 v1	
Vinyl acetate	ug/L	100	123	123	70-140	
Vinyl chloride	ug/L	50	49.8	100	59-142	
Xylene (Total)	ug/L	150	155	103	70-130	
1,2-Dichloroethane-d4 (S)	%			116	70-130	
4-Bromofluorobenzene (S)	%			104	70-130	
Toluene-d8 (S)	%			100	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083150 3083151												
Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		92507939009	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
1,1,1,2-Tetrachloroethane	ug/L		20	20	19.7	20.9	98	105	70-135	6	30	
1,1,1-Trichloroethane	ug/L		20	20	22.5	22.6	113	113	70-148	0	30	
1,1,2,2-Tetrachloroethane	ug/L		20	20	15.7	27.0	78	135	70-131	53	30	M1,R1
1,1,2-Trichloroethane	ug/L		20	20	26.7	21.5	134	107	70-136	22	30	
1,1-Dichloroethane	ug/L		20	20	21.3	21.4	107	107	70-147	1	30	
1,1-Dichloroethene	ug/L		20	20	21.0	21.3	105	107	70-158	1	30	
1,1-Dichloropropene	ug/L		20	20	21.3	21.7	107	109	70-149	2	30	
1,2,3-Trichlorobenzene	ug/L		20	20	18.1	17.7	90	89	68-140	2	30	
1,2,3-Trichloropropane	ug/L		20	20	15.7	26.3	78	132	67-137	51	30	R1
1,2,4-Trichlorobenzene	ug/L		20	20	17.9	17.5	89	88	70-139	2	30	
1,2-Dibromo-3-chloropropane	ug/L		20	20	22.4	21.1	112	105	69-136	6	30	
1,2-Dibromoethane (EDB)	ug/L		20	20	21.1	21.8	106	109	70-137	3	30	
1,2-Dichlorobenzene	ug/L		20	20	20.0	19.2	100	96	70-133	4	30	
1,2-Dichloroethane	ug/L		20	20	20.3	21.2	102	106	67-138	4	30	
1,2-Dichloropropane	ug/L		20	20	26.4	20.9	132	105	70-138	23	30	
1,3-Dichlorobenzene	ug/L		20	20	19.5	21.4	97	107	70-133	9	30	
1,3-Dichloropropane	ug/L		20	20	21.4	21.7	107	109	70-136	1	30	
1,4-Dichlorobenzene	ug/L		20	20	19.8	21.2	99	106	70-133	7	30	
2,2-Dichloropropane	ug/L		20	20	14.6	15.1	73	75	52-155	3	30	
2-Butanone (MEK)	ug/L		40	40	44.6	44.3	111	111	61-147	1	30	
2-Chlorotoluene	ug/L		20	20	20.7	26.5	104	132	70-141	24	30	
2-Hexanone	ug/L		40	40	40.7	40.6	102	101	67-139	0	30	
4-Chlorotoluene	ug/L		20	20	19.6	23.8	98	119	70-135	19	30	
4-Methyl-2-pentanone (MIBK)	ug/L		40	40	51.2	41.4	128	103	67-136	21	30	
Acetone	ug/L		40	40	46.4	46.0	116	115	55-159	1	30	
Benzene	ug/L		20	20	20.9	22.4	105	112	67-150	7	30	
Bromobenzene	ug/L		20	20	21.8	25.6	109	128	70-134	16	30	
Bromochloromethane	ug/L		20	20	22.4	22.4	112	112	70-146	0	30	
Bromodichloromethane	ug/L		20	20	23.7	20.3	118	102	70-138	15	30	
Bromoform	ug/L		20	20	18.5	19.6	92	98	57-138	6	30	
Bromomethane	ug/L		20	20	23.7	23.8	119	119	10-200	0	30	
Carbon tetrachloride	ug/L		20	20	21.8	24.2	109	121	70-147	11	30	
Chlorobenzene	ug/L		20	20	21.1	21.3	106	107	70-137	1	30	
Chloroethane	ug/L		20	20	20.0	21.0	100	105	51-166	5	30	IK,v3
Chloroform	ug/L		20	20	22.4	23.2	112	116	70-144	3	30	
Chloromethane	ug/L		20	20	19.4	19.8	97	99	24-161	2	30	
cis-1,2-Dichloroethene	ug/L		20	20	21.2	22.2	106	111	67-148	5	30	
cis-1,3-Dichloropropene	ug/L		20	20	23.7	20.1	119	100	70-142	17	30	
Dibromochloromethane	ug/L		20	20	21.5	22.8	107	114	68-138	6	30	
Dibromomethane	ug/L		20	20	23.7	20.0	118	100	70-134	17	30	
Dichlorodifluoromethane	ug/L		20	20	14.7	15.2	74	76	43-155	3	30	
Diisopropyl ether	ug/L		20	20	19.8	19.9	99	100	65-146	1	30	
Ethylbenzene	ug/L		20	20	20.0	20.7	100	103	68-143	3	30	
Hexachloro-1,3-butadiene	ug/L		20	20	17.2	16.3	86	81	62-151	6	30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Kop Flex

Pace Project No.: 92507929

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083150												3083151	
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92507939009 Result	Spike Conc.	Spike Conc.	MS Result								
m&p-Xylene	ug/L		40	40	40.4	42.0	101	105	53-157		4	30	
Methyl-tert-butyl ether	ug/L		20	20	19.6	19.8	98	99	59-156		1	30	
Methylene Chloride	ug/L		20	20	20.6	20.3	103	102	64-148		1	30	
Naphthalene	ug/L		20	20	20.2	19.7	101	98	57-150		2	30	
o-Xylene	ug/L		20	20	21.5	22.0	107	110	68-143		2	30	
p-Isopropyltoluene	ug/L		20	20	19.2	21.5	96	107	70-141		11	30	
Styrene	ug/L		20	20	20.8	21.4	104	107	70-136		3	30	
Tetrachloroethene	ug/L		20	20	19.0	19.7	95	98	70-139		4	30	
Toluene	ug/L		20	20	26.5	21.8	132	109	47-157		19	30	
trans-1,2-Dichloroethene	ug/L		20	20	19.8	20.5	99	102	70-149		3	30	
trans-1,3-Dichloropropene	ug/L		20	20	24.5	21.0	123	105	70-138		15	30	
Trichloroethene	ug/L		20	20	20.8	22.2	104	111	70-149		7	30	
Trichlorofluoromethane	ug/L		20	20	20.3	20.3	101	102	61-154		0	30	
Vinyl acetate	ug/L		40	40	28.1	27.6	70	69	48-156		2	30	
Vinyl chloride	ug/L		20	20	19.4	19.4	97	97	55-172		0	30	
Xylene (Total)	ug/L		60	60	61.9	63.9	103	107	66-145		3	30	
1,2-Dichloroethane-d4 (S)	%							102	103	70-130			
4-Bromofluorobenzene (S)	%							87	107	70-130			
Toluene-d8 (S)	%							125	101	70-130			

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

QC Batch: 583926	Analysis Method: EPA 8260D
QC Batch Method: EPA 8260D	Analysis Description: 8260D MSV Low Level
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92507929004

METHOD BLANK: 3086935 Matrix: Water

Associated Lab Samples: 92507929004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	12/02/20 21:57	
1,1,1-Trichloroethane	ug/L	ND	1.0	12/02/20 21:57	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	12/02/20 21:57	
1,1,2-Trichloroethane	ug/L	ND	1.0	12/02/20 21:57	
1,1-Dichloroethane	ug/L	ND	1.0	12/02/20 21:57	
1,1-Dichloroethene	ug/L	ND	1.0	12/02/20 21:57	
1,1-Dichloropropene	ug/L	ND	1.0	12/02/20 21:57	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	12/02/20 21:57	
1,2,3-Trichloropropane	ug/L	ND	1.0	12/02/20 21:57	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	12/02/20 21:57	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	12/02/20 21:57	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/02/20 21:57	
1,2-Dichlorobenzene	ug/L	ND	1.0	12/02/20 21:57	
1,2-Dichloroethane	ug/L	ND	1.0	12/02/20 21:57	
1,2-Dichloropropane	ug/L	ND	1.0	12/02/20 21:57	
1,3-Dichlorobenzene	ug/L	ND	1.0	12/02/20 21:57	
1,3-Dichloropropane	ug/L	ND	1.0	12/02/20 21:57	
1,4-Dichlorobenzene	ug/L	ND	1.0	12/02/20 21:57	
2,2-Dichloropropane	ug/L	ND	1.0	12/02/20 21:57	
2-Butanone (MEK)	ug/L	ND	5.0	12/02/20 21:57	
2-Chlorotoluene	ug/L	ND	1.0	12/02/20 21:57	
2-Hexanone	ug/L	ND	5.0	12/02/20 21:57	
4-Chlorotoluene	ug/L	ND	1.0	12/02/20 21:57	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	12/02/20 21:57	v2
Acetone	ug/L	ND	25.0	12/02/20 21:57	
Benzene	ug/L	ND	1.0	12/02/20 21:57	
Bromobenzene	ug/L	ND	1.0	12/02/20 21:57	
Bromochloromethane	ug/L	ND	1.0	12/02/20 21:57	
Bromodichloromethane	ug/L	ND	1.0	12/02/20 21:57	
Bromoform	ug/L	ND	1.0	12/02/20 21:57	
Bromomethane	ug/L	ND	2.0	12/02/20 21:57	v2
Carbon tetrachloride	ug/L	ND	1.0	12/02/20 21:57	
Chlorobenzene	ug/L	ND	1.0	12/02/20 21:57	
Chloroethane	ug/L	ND	1.0	12/02/20 21:57	v2
Chloroform	ug/L	ND	5.0	12/02/20 21:57	
Chloromethane	ug/L	ND	1.0	12/02/20 21:57	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/02/20 21:57	
cis-1,3-Dichloropropene	ug/L	ND	1.0	12/02/20 21:57	
Dibromochloromethane	ug/L	ND	1.0	12/02/20 21:57	
Dibromomethane	ug/L	ND	1.0	12/02/20 21:57	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

METHOD BLANK: 3086935
Associated Lab Samples: 92507929004

Matrix: Water

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	12/02/20 21:57	
Diisopropyl ether	ug/L	ND	1.0	12/02/20 21:57	
Ethylbenzene	ug/L	ND	1.0	12/02/20 21:57	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	12/02/20 21:57	
m&p-Xylene	ug/L	ND	2.0	12/02/20 21:57	
Methyl-tert-butyl ether	ug/L	ND	1.0	12/02/20 21:57	
Methylene Chloride	ug/L	ND	5.0	12/02/20 21:57	v2
Naphthalene	ug/L	ND	1.0	12/02/20 21:57	
o-Xylene	ug/L	ND	1.0	12/02/20 21:57	
p-Isopropyltoluene	ug/L	ND	1.0	12/02/20 21:57	
Styrene	ug/L	ND	1.0	12/02/20 21:57	
Tetrachloroethene	ug/L	ND	1.0	12/02/20 21:57	
Toluene	ug/L	ND	1.0	12/02/20 21:57	
trans-1,2-Dichloroethene	ug/L	ND	1.0	12/02/20 21:57	
trans-1,3-Dichloropropene	ug/L	ND	1.0	12/02/20 21:57	
Trichloroethene	ug/L	ND	1.0	12/02/20 21:57	
Trichlorofluoromethane	ug/L	ND	1.0	12/02/20 21:57	
Vinyl acetate	ug/L	ND	2.0	12/02/20 21:57	
Vinyl chloride	ug/L	ND	1.0	12/02/20 21:57	
Xylene (Total)	ug/L	ND	1.0	12/02/20 21:57	
1,2-Dichloroethane-d4 (S)	%	93	70-130	12/02/20 21:57	
4-Bromofluorobenzene (S)	%	100	70-130	12/02/20 21:57	
Toluene-d8 (S)	%	104	70-130	12/02/20 21:57	

LABORATORY CONTROL SAMPLE: 3086936

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	53.8	108	70-130	
1,1,1-Trichloroethane	ug/L	50	43.1	86	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	50.9	102	70-130	
1,1,2-Trichloroethane	ug/L	50	45.3	91	70-130	
1,1-Dichloroethane	ug/L	50	42.5	85	70-130	
1,1-Dichloroethene	ug/L	50	44.0	88	70-132	
1,1-Dichloropropene	ug/L	50	45.7	91	70-131	
1,2,3-Trichlorobenzene	ug/L	50	52.1	104	70-134	
1,2,3-Trichloropropane	ug/L	50	53.1	106	70-130	
1,2,4-Trichlorobenzene	ug/L	50	53.0	106	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	51.6	103	70-132	
1,2-Dibromoethane (EDB)	ug/L	50	55.6	111	70-130	
1,2-Dichlorobenzene	ug/L	50	53.0	106	70-130	
1,2-Dichloroethane	ug/L	50	40.6	81	70-130	
1,2-Dichloropropane	ug/L	50	46.2	92	70-130	
1,3-Dichlorobenzene	ug/L	50	54.2	108	70-130	
1,3-Dichloropropane	ug/L	50	55.7	111	70-130	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

LABORATORY CONTROL SAMPLE: 3086936

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	53.4	107	70-130	
2,2-Dichloropropane	ug/L	50	42.9	86	70-130	
2-Butanone (MEK)	ug/L	100	83.8	84	70-133	
2-Chlorotoluene	ug/L	50	53.0	106	70-130	
2-Hexanone	ug/L	100	92.3	92	70-130	
4-Chlorotoluene	ug/L	50	52.1	104	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	78.0	78	70-130	v3
Acetone	ug/L	100	86.7	87	70-144	
Benzene	ug/L	50	45.5	91	70-130	
Bromobenzene	ug/L	50	52.9	106	70-130	
Bromochloromethane	ug/L	50	44.6	89	70-130	
Bromodichloromethane	ug/L	50	43.0	86	70-130	
Bromoform	ug/L	50	50.5	101	70-131	
Bromomethane	ug/L	50	37.0	74	30-177	v3
Carbon tetrachloride	ug/L	50	44.5	89	70-130	
Chlorobenzene	ug/L	50	51.6	103	70-130	
Chloroethane	ug/L	50	39.4	79	46-131	v3
Chloroform	ug/L	50	43.2	86	70-130	
Chloromethane	ug/L	50	40.2	80	49-130	
cis-1,2-Dichloroethene	ug/L	50	40.8	82	70-130	
cis-1,3-Dichloropropene	ug/L	50	48.6	97	70-130	
Dibromochloromethane	ug/L	50	56.9	114	70-130	
Dibromomethane	ug/L	50	45.3	91	70-130	
Dichlorodifluoromethane	ug/L	50	43.1	86	52-134	
Diisopropyl ether	ug/L	50	42.1	84	70-131	
Ethylbenzene	ug/L	50	50.4	101	70-130	
Hexachloro-1,3-butadiene	ug/L	50	51.6	103	70-131	
m&p-Xylene	ug/L	100	104	104	70-130	
Methyl-tert-butyl ether	ug/L	50	44.6	89	70-130	
Methylene Chloride	ug/L	50	39.5	79	68-130	v3
Naphthalene	ug/L	50	52.5	105	70-133	
o-Xylene	ug/L	50	53.7	107	70-130	
p-Isopropyltoluene	ug/L	50	53.5	107	70-130	
Styrene	ug/L	50	52.9	106	70-130	
Tetrachloroethene	ug/L	50	51.5	103	70-130	
Toluene	ug/L	50	42.3	85	70-130	
trans-1,2-Dichloroethene	ug/L	50	42.1	84	70-130	
trans-1,3-Dichloropropene	ug/L	50	46.2	92	70-130	
Trichloroethene	ug/L	50	47.4	95	70-130	
Trichlorofluoromethane	ug/L	50	41.6	83	61-130	
Vinyl acetate	ug/L	100	106	106	70-140	
Vinyl chloride	ug/L	50	40.0	80	59-142	
Xylene (Total)	ug/L	150	158	105	70-130	
1,2-Dichloroethane-d4 (S)	%			93	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			93	70-130	

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3086937 3086938												
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		92508563001 Result	Spike Conc.	Spike Conc.	MS Result							
1,1,1,2-Tetrachloroethane	ug/L	ND	4000	4000	4170	4230	104	106	70-135	1	30	
1,1,1-Trichloroethane	ug/L	ND	4000	4000	3930	3980	98	100	70-148	1	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	4000	4000	4060	4090	102	102	70-131	1	30	
1,1,2-Trichloroethane	ug/L	ND	4000	4000	3640	3690	91	92	70-136	2	30	
1,1-Dichloroethane	ug/L	ND	4000	4000	3880	3880	97	97	70-147	0	30	
1,1-Dichloroethene	ug/L	ND	4000	4000	4130	4040	103	101	70-158	2	30	
1,1-Dichloropropene	ug/L	ND	4000	4000	4040	4160	101	104	70-149	3	30	
1,2,3-Trichlorobenzene	ug/L	ND	4000	4000	4140	4500	103	112	68-140	8	30	
1,2,3-Trichloropropane	ug/L	ND	4000	4000	3800	3790	95	95	67-137	0	30	
1,2,4-Trichlorobenzene	ug/L	ND	4000	4000	4200	4530	105	113	70-139	8	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	4000	4000	4160	4260	104	107	69-136	3	30	
1,2-Dibromoethane (EDB)	ug/L	ND	4000	4000	4300	4400	107	110	70-137	2	30	
1,2-Dichlorobenzene	ug/L	ND	4000	4000	4450	4650	111	116	70-133	5	30	
1,2-Dichloroethane	ug/L	ND	4000	4000	3560	3610	89	90	67-138	1	30	
1,2-Dichloropropane	ug/L	ND	4000	4000	4060	4120	102	103	70-138	1	30	
1,3-Dichlorobenzene	ug/L	ND	4000	4000	4540	4630	113	116	70-133	2	30	
1,3-Dichloropropane	ug/L	ND	4000	4000	4480	4460	112	111	70-136	0	30	
1,4-Dichlorobenzene	ug/L	ND	4000	4000	4470	4570	112	114	70-133	2	30	
2,2-Dichloropropane	ug/L	ND	4000	4000	3260	3260	82	81	52-155	0	30	
2-Butanone (MEK)	ug/L	ND	8000	8000	7080	6810	89	85	61-147	4	30	
2-Chlorotoluene	ug/L	ND	4000	4000	4480	4560	112	114	70-141	2	30	
2-Hexanone	ug/L	ND	8000	8000	7690	7680	96	96	67-139	0	30	
4-Chlorotoluene	ug/L	ND	4000	4000	4460	4600	112	115	70-135	3	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	8000	8000	6280	6420	79	80	67-136	2	30	v3
Acetone	ug/L	ND	8000	8000	7840	7690	98	96	55-159	2	30	
Benzene	ug/L	ND	4000	4000	4070	4050	102	101	67-150	0	30	
Bromobenzene	ug/L	ND	4000	4000	4400	4600	110	115	70-134	4	30	
Bromochloromethane	ug/L	ND	4000	4000	4020	4160	100	104	70-146	4	30	
Bromodichloromethane	ug/L	ND	4000	4000	3750	3820	94	95	70-138	2	30	
Bromoform	ug/L	ND	4000	4000	3710	3760	93	94	57-138	1	30	
Bromomethane	ug/L	ND	4000	4000	3050	3540	76	88	10-200	15	30	v3
Carbon tetrachloride	ug/L	ND	4000	4000	4090	4160	102	104	70-147	2	30	
Chlorobenzene	ug/L	ND	4000	4000	4460	4490	111	112	70-137	1	30	
Chloroethane	ug/L	ND	4000	4000	4090	3950	102	99	51-166	3	30	v3
Chloroform	ug/L	ND	4000	4000	3500	3690	87	92	70-144	5	30	
Chloromethane	ug/L	ND	4000	4000	3730	3800	93	95	24-161	2	30	
cis-1,2-Dichloroethene	ug/L	3240	4000	4000	6690	6720	86	87	67-148	1	30	
cis-1,3-Dichloropropene	ug/L	ND	4000	4000	3860	3960	96	99	70-142	3	30	
Dibromochloromethane	ug/L	ND	4000	4000	4400	4470	110	112	68-138	2	30	
Dibromomethane	ug/L	ND	4000	4000	4010	4090	100	102	70-134	2	30	
Dichlorodifluoromethane	ug/L	ND	4000	4000	3710	3710	93	93	43-155	0	30	
Diisopropyl ether	ug/L	ND	4000	4000	3370	3420	84	86	65-146	1	30	
Ethylbenzene	ug/L	ND	4000	4000	4440	4450	111	111	68-143	0	30	
Hexachloro-1,3-butadiene	ug/L	ND	4000	4000	4160	4250	104	106	62-151	2	30	

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QUALITY CONTROL DATA

Project: Kop Flex

Pace Project No.: 92507929

Parameter	Units	3086937		3086938		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92508563001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
m&p-Xylene	ug/L	ND	8000	8000	9260	9220	116	115	53-157	0	30		
Methyl-tert-butyl ether	ug/L	ND	4000	4000	3680	3730	92	93	59-156	1	30		
Methylene Chloride	ug/L	ND	4000	4000	3700	3780	92	94	64-148	2	30	v3	
Naphthalene	ug/L	ND	4000	4000	4200	4540	105	114	57-150	8	30		
o-Xylene	ug/L	ND	4000	4000	4660	4600	116	115	68-143	1	30		
p-Isopropyltoluene	ug/L	ND	4000	4000	4380	4620	109	116	70-141	5	30		
Styrene	ug/L	ND	4000	4000	4600	4620	115	116	70-136	0	30		
Tetrachloroethene	ug/L	ND	4000	4000	4430	4380	111	109	70-139	1	30		
Toluene	ug/L	ND	4000	4000	3860	3930	94	96	47-157	2	30		
trans-1,2-Dichloroethene	ug/L	ND	4000	4000	3920	3990	98	100	70-149	2	30		
trans-1,3-Dichloropropene	ug/L	ND	4000	4000	3530	3590	88	90	70-138	2	30		
Trichloroethene	ug/L	19800	4000	4000	24700	24700	123	124	70-149	0	30		
Trichlorofluoromethane	ug/L	ND	4000	4000	4140	3860	104	97	61-154	7	30		
Vinyl acetate	ug/L	ND	8000	8000	8360	8520	105	106	48-156	2	30		
Vinyl chloride	ug/L	477	4000	4000	4140	4210	92	93	55-172	2	30		
Xylene (Total)	ug/L	ND	12000	12000	13900	13800	116	115	66-145	1	30		
1,2-Dichloroethane-d4 (S)	%						96	101	70-130				
4-Bromofluorobenzene (S)	%						100	99	70-130				
Toluene-d8 (S)	%						95	95	70-130				

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

QC Batch: 582772	Analysis Method: EPA 8260D Mod.
QC Batch Method: EPA 8260D Mod.	Analysis Description: 8260D MSV SIM
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92507929006

METHOD BLANK: 3081850 Matrix: Water

Associated Lab Samples: 92507929006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	11/24/20 16:00	
1,2-Dichloroethane-d4 (S)	%	97	70-130	11/24/20 16:00	
Toluene-d8 (S)	%	92	66-133	11/24/20 16:00	

LABORATORY CONTROL SAMPLE: 3081851

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	18.8	94	70-130	
1,2-Dichloroethane-d4 (S)	%			99	70-130	
Toluene-d8 (S)	%			92	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3081852 3081853

Parameter	Units	92507939007		3081852		3081853		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
1,4-Dioxane (p-Dioxane)	ug/L	ND	20	20	18.4	19.6	92	98	64-141	6	30		
1,2-Dichloroethane-d4 (S)	%						102	100	70-130		30		
Toluene-d8 (S)	%						92	91	66-133		30		

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

QC Batch: 582773	Analysis Method: EPA 8260D Mod.
QC Batch Method: EPA 8260D Mod.	Analysis Description: 8260D MSV SIM
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92507929003

METHOD BLANK: 3081855 Matrix: Water

Associated Lab Samples: 92507929003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	11/24/20 16:19	
1,2-Dichloroethane-d4 (S)	%	96	70-130	11/24/20 16:19	
Toluene-d8 (S)	%	92	66-133	11/24/20 16:19	

LABORATORY CONTROL SAMPLE: 3081856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	20.5	102	70-130	
1,2-Dichloroethane-d4 (S)	%			96	70-130	
Toluene-d8 (S)	%			92	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3081857 3081858

Parameter	Units	92507939013		3081857		3081858		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result				
1,4-Dioxane (p-Dioxane)	ug/L	41.5	20	20	64.4	62.3	115	104	64-141	3	30
1,2-Dichloroethane-d4 (S)	%						103	98	70-130		30
Toluene-d8 (S)	%						93	91	66-133		30

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

QC Batch: 582774	Analysis Method: EPA 8260D Mod.
QC Batch Method: EPA 8260D Mod.	Analysis Description: 8260D MSV SIM
	Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92507929001

METHOD BLANK: 3081862 Matrix: Water

Associated Lab Samples: 92507929001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	11/25/20 04:16	
1,2-Dichloroethane-d4 (S)	%	99	70-130	11/25/20 04:16	
Toluene-d8 (S)	%	91	66-133	11/25/20 04:16	

LABORATORY CONTROL SAMPLE: 3081863

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	20.2	101	70-130	
1,2-Dichloroethane-d4 (S)	%			100	70-130	
Toluene-d8 (S)	%			93	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3081864 3081865

Parameter	Units	92507748001		3081865		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MSD Result								
1,4-Dioxane (p-Dioxane)	ug/L	ND	20	20	20.1	20.6	99	101	64-141	2	30		
1,2-Dichloroethane-d4 (S)	%						98	101	70-130		30		
Toluene-d8 (S)	%						93	92	66-133		30		

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QUALITY CONTROL DATA

Project: Kop Flex
Pace Project No.: 92507929

QC Batch: 583085 Analysis Method: EPA 8260D Mod.
QC Batch Method: EPA 8260D Mod. Analysis Description: 8260D MSV SIM
Laboratory: Pace Analytical Services - Charlotte

Associated Lab Samples: 92507929002, 92507929004, 92507929005

METHOD BLANK: 3083365 Matrix: Water

Associated Lab Samples: 92507929002, 92507929004, 92507929005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	11/25/20 15:42	
1,2-Dichloroethane-d4 (S)	%	100	70-130	11/25/20 15:42	
Toluene-d8 (S)	%	89	66-133	11/25/20 15:42	

LABORATORY CONTROL SAMPLE: 3083366

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	22.9	115	70-130	
1,2-Dichloroethane-d4 (S)	%			100	70-130	
Toluene-d8 (S)	%			92	66-133	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3083367 3083368

Parameter	Units	92508101002 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	187	80	80	289	296	128	137	64-141	2	30	
1,2-Dichloroethane-d4 (S)	%						97	96	70-130		30	
Toluene-d8 (S)	%						93	93	66-133		30	

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QUALIFIERS

Project: Kop Flex
Pace Project No.: 92507929

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.

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
IK	The recalculated concentration of the calibration standard(s) did not meet method acceptance criteria; this result should be considered an estimated value.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.
v1	The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.
v2	The continuing calibration verification was below the method acceptance limit. The analyte was not detected in the associated samples and the sensitivity of the instrument was verified with a reporting limit check standard.
v3	The continuing calibration verification was below the method acceptance limit. Any detection for the analyte in the associated samples may have low bias.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Kop Flex

Pace Project No.: 92507929

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92507929001	RW-1S	EPA 8260D	582949		
92507929002	RW-2S	EPA 8260D	583045		
92507929003	RW-3S	EPA 8260D	582948		
92507929004	RW-1D	EPA 8260D	583926		
92507929005	RW-2D	EPA 8260D	583045		
92507929006	Trip Blank A	EPA 8260D	582948		
92507929001	RW-1S	EPA 8260D Mod.	582774		
92507929002	RW-2S	EPA 8260D Mod.	583085		
92507929003	RW-3S	EPA 8260D Mod.	582773		
92507929004	RW-1D	EPA 8260D Mod.	583085		
92507929005	RW-2D	EPA 8260D Mod.	583085		
92507929006	Trip Blank A	EPA 8260D Mod.	582772		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name: WSP

Project #: **WO# : 92507929**



Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 11/24/20
WSP

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen? Yes No N/A

Thermometer: HR Gun ID: 92T064 Type of Ice: Wet Blue None

Cooler Temp: 1.9, 1.7 Correction Factor: Add/Subtract (°C) -0.1

Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 1.8, 1.6

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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	8.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10.
Trip Blank Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Samples RW-2S, RW-ID, RW-2D not present.

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

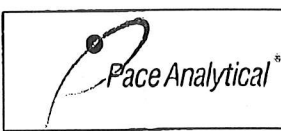
Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: BV

Date: 11/30/20

Project Manager SRF Review: BV

Date: 11/30/20



*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Project # **WO# : 92507929**

samples.

PM: BV

Due Date: 12/03/20

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

CLIENT: 92-WSP

**Bottom half of box is to list number of bottles

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)	
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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.



Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville Atlanta Kernersville

Sample Condition Upon Receipt

Client Name:

WSP

Project #:

WO# : 92507929

PM: BV

Due Date: 12/03/20

CLIENT: 92-WSP

Courier: Fed Ex UPS USPS Client
 Commercial Pace Other: _____

Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: mg/11-25-20

Packing Material: Bubble Wrap Bubble Bags None Other

Biological Tissue Frozen?

Yes No N/A

Thermometer: IR Gun ID: 92T064 Type of Ice: Wet Blue None

Cooler Temp: 4.7 Correction Factor: Add/Subtract (°C) -0.1

Temp should be above freezing to 6°C

Samples out of temp criteria. Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 4.6

USDA Regulated Soil (N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

Yes No

	Comments/Discrepancy:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Samples Arrived within Hold Time? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2.
Short Hold Time Analysis (<72 hr.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Correct Containers Used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
-Pace Containers Used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7.
Dissolved analysis: Samples Field Filtered? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8.
Sample Labels Match COC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Includes Date/Time/ID/Analysis Matrix: <u>WSP</u>	
Headspace in VOA Vials (>5-6mm)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10.
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	

COMMENTS/SAMPLE DISCREPANCY

Rec'd BW-25, BW-1D, BW-2D

Field Data Required? Yes No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: _____

Date: _____

Project Manager SRF Review: _____

Date: _____



***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Project #

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

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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 Na2SO3 (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)	
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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.

System

CHAIN-OF-CUSTODY RECORD

WSP USA Office Address 13530 Dulles Technology Dr. Ste 300 Herndon VA				Requested Analyses & Preservatives										No. 010005		WSP				
Project Name Kop flex		WSP USA Contact Name Molly Long		VOC by 02607 8260-1,4-Dioxane WITH SIMS										Laboratory Name & Location Face, NC						
Project Location Hanover MD		WSP USA Contact E-mail molly.long@wsp.com												Laboratory Project Manager Bonnie V						
Project Number & Task 31401545.010/4		WSP USA Contact Phone 703 210 571 232 5045												Requested Turn Around Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input type="checkbox"/> ___ HR						
Sampler(s) Name(s) Molly Long Elliott Martynkiewicz		Sampler(s) Signature(s) ML												92507929						
Sample Identification		Matrix	Collection Start Date	Collection Start Time	Collection Step Date	Collection Step Time	Number of Containers											Sample Comments		
C	RW-1S	AQ	11/22/2020	13 35	6	6	6	X	X											001
B	RW-2S		11/22/2020	13 40	6	6	6	X	X											002
C	RW-3S		11/22/2020	13 50	6	6	6	X	X											003
B	RW-1D		11/22/2020	14 20	6	6	6	X	X											004
B	RW-2D		11/22/2020	14 50	6	6	6	X	X											005
A	Trip Blank A	—	Lab provided		6	6	6	X	X											006
Relinquished By (Signature) ML		Date	Time	Received By (Signature)		Date	Time	Shipment Method FedEx		Tracking Number(s) 8160 4581 0293										
Relinquished By (Signature)		Date	Time	Received By (Signature) LDH FACE HVC		Date	Time	Number of Packages		Custody Seal Number(s)										

*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)