2022 ANNUAL MONITORING/INSPECTION REPORT

SNPE-VDM CREEK BANK CORRECTIVE ACTIONS ORDER ON CONSENT R9-20080205-5

SNPE, INC.
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PROJECT NO.: 21452459
DATE: MARCH 2023

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1 INTRODUCTION

WSP USA INC. (WSP) (formerly Golder Associates Inc. [Golder]) under contract to SNPE Inc. (SNPE) and in close cooperation with VanDeMark Chemical Inc. (VDM), the Site owner, has prepared this annual monitoring and inspection summary report for 2022, in support of the Operations and Maintenance Plan (OMP) that was prepared for the VDM Lockport facility by Golder Associates Inc. (Golder, revised June 2022). This summary report describes the activities that were undertaken during 2022 to maintain and monitor the effectiveness of the remedial system that was implemented at the VDM site along a portion of VDM's property adjacent to the north bank of Eighteen Mile Creek Bank (hereafter referred to as the "Creek Bank Area") and associated groundwater/DNAPL impacts at VDM's manufacturing facility in Lockport, New York. The VDM facility is located in the north central sector of the City of Lockport city limits, as shown on Figure 1.

The purpose of the constructed remedial system was twofold: create a barrier to restrict and contain the migration of dense non-aqueous phase liquid (DNAPL) consisting of coal tar residuals that have been exiting the fractured bedrock formation at, or near, the toe of the Creek Bank Area slope; and promote the collection of the DNAPL in a defined permeable trench for subsequent mechanical removal, if required. This annual monitoring/inspection report documents the extent to which these objectives are being met based on the following primary activities that were conducted throughout the 2022 monitoring period:

- Two visual inspections for presence of DNAPL in the passive upgradient permeable collection trench installed along the grout cut-off wall alignment including: inspection of the four observation sumps and temporary test pits placed in the collection trench permeable stone media;
- Two visual inspections for presence of DNAPL along the Eighteen Mile Creek bank areas where coal tar residuals have previously been observed;
- Annual groundwater sampling of the four piezometers installed upgradient and downgradient of the grout cut-off wall;
- Annual sampling of the water discharge from the collection trench Filter Sump overflow chamber;
- Annual groundwater sampling of two representative monitoring wells located within the VDM Plant at the top of the Niagara Escarpment; and,
- Visual inspection of the Filter Sump media (i.e., filter sand and activated carbon) and sump chamber.

Figure 3 shows the locations of the areas both within the active VDM facility and to the south along the Creek Bank Area that were monitored as part of this annual report.

The following sections present details on the frequency and methodologies employed for the inspections, monitoring and maintenance activities described above. The documentation and reporting associated with these activities are also described and provided.

2 SEMI-ANNUAL INSPECTIONS AND ANNUAL MONITORING

On March 18, 2015, the NYSDEC approved the petition dated March 5, 2015 from SNPE to reduce O&M inspections from quarterly to semi-annually to coincide with the semi-annual groundwater sampling events. The semi-annual inspection frequency was continued for the 2022 O&M reporting period.

On January 22, 2018 the NYSDEC approved the petition letter dated January 18, 2018 from SNPE to reduce the groundwater sampling from semi-annual to annual frequency. It was proposed that the annual groundwater sampling event be performed to coincide with the spring semi-annual inspection event, which is typically conducted in May each year. As a result of this approved change only one groundwater sampling event has been conducted per year since 2018.

2.1 PASSIVE DNAPL COLLECTION TRENCH

WSP personnel performed visual inspections of the DNAPL collection trench in June and November 2022. The following observations were recorded and summarized on written inspection reports, included in this report as Appendix A. Photos taken during the inspections were also recorded and are included as Appendix B.

2.1.1 JUNE 2022 INSPECTION

DNAPL accumulation was not observed during the June 3, 2022 inspection event within the observation sumps located within the DNAPL collection trench. WSP visually inspected and inserted a wooden probe to the bottom of four, 4-inch diameter PVC DNAPL observation sumps (OS-1, OS-2, OS-3 and OS-4). Sumps OS-2, and OS-4 were dry, while OS-1 (approx. 56" water and 6” of light brown sediment), and OS-3 (approx. 15” water and 5 to 6” of black sediment) contained groundwater and sediments without a sheen or odor.

WSP dug three test holes in the DNAPL Collection trench stone media in the following locations to visually inspect trench drainage stone materials for the presence of DNAPL:

- Approximately 25 feet east of OS-1 – groundwater encountered 1-2 inches below grade, test hole depth of 12 inches;
- Approximately 2 feet west of OS-3, no groundwater encountered, test hole depth of approximately 24 inches; and,
- Approximately 35 feet east of PZ-2, no groundwater encountered, test hole depth of 16 inches.

No DNAPL was observed in any of the test holes and the groundwater in test hole 25 feet east of OS-1 did not exhibit a sheen or have any odor.

2.1.2 NOVEMBER 2022 INSPECTION

DNAPL accumulation was not observed during the November 9, 2022 inspection period within the observation sumps located within the DNAPL collection trench. WSP performed a visual inspection using a wood probe inserted to the bottom of four, 4-inch diameter PVC DNAPL observation sumps (OS-1, OS-2, OS-3 and OS-4). Groundwater was encountered in OS-1 (approx. 49” water and 5” of brown sediment) and OS-3 (approx. 14” water and 6” black sediment) without a sheen or odor, while OS-2 and OS-4 were both dry.

During the November 2022 inspection, OS-1 was covered in approximately five to six inches of sediment/soil deposited from slope erosion which was removed to access the observation sump.

WSP dug two test holes in the DNAPL Collection trench stone media in the following locations to visually inspect trench drainage stone materials for the presence of DNAPL:

- Approximately 30 feet east of OS-1 – groundwater encountered 9 inches below grade, test hole depth of 12 inches (filter fabric encountered); and,
- Approximately 15 feet east of OS-3, no groundwater encountered; and test hole depth of approximately 17 inches (filter fabric encountered).

No DNAPL was observed in either of the test holes and the groundwater in test hole 30 feet east of OS-1 did not exhibit a sheen or have any odor.

2.2 CREEK BANK AREA

Visual inspections were performed along approximately 300 feet of the Creek Bank Area down gradient of the DNAPL collection trench in June and November 2022. The following observations were recorded and summarized on written inspection reports, included in this report as Appendix A. Photos taken during the inspections were also recorded and are included as Appendix B.

2.2.1 JUNE 2022 INSPECTION

WSP personnel inspected both the up-gradient slope (north of the DNAPL collection trench) and down-gradient slope (south of the collection trench) for signs of DNAPL accumulation. DNAPL accumulations were observed along an approximately 35-foot section of the steeply graded edge of the creek bank south/southwest of PZ-1. This area is located on the south-southeast side of the buried stone mill race structure adjacent to the creek where small quantities of DNAPL residuals have been observed and removed over the past eight years of monitoring and inspection.

During the 2012 creek bank remediation, it was evident that some residual coal tar likely remained trapped within the buried stone structure interstices, however due to the massive size of the structure and its location directly adjacent to the creek it was determined that intrusive remediation of the structure (former water mill raceway) was not practical and would most likely result in significant negative impacts to the creek due to its proximity and potential for destabilization of a significant section of the creek bank. In addition, significant disturbance of the structure would have required an Army Corps of Engineers stream bank disturbance permit due to its location directly adjacent to the creek. It was collectively determined at that time to proceed with the planned remediation without disturbing the buried structure.

During the June 2022 inspection, residual DNAPL accumulations were observed in the same general locations as noted in 2021, along the south side of the stone structure. Evidence of minor accumulations were observed since the November 2021 inspection. However, in consultation with the NYSDEC representative, it was determined that manual removal of these minor accumulations would be performed during the November 2022 inspection when less vegetation and lower creek flow conditions might be more favorable.

A small slope failure (trees and soil) was observed along the north bank of Eighteen Mile Creek south of OS-4. The slide has deposited some debris into the edge of the creek at that location with a slight impact on flow restriction.

No evidence of DNAPL accumulation was observed on the up-gradient slopes. Late spring vegetative cover was already heavy at this time which made visual observations more challenging.

2.2.2 NOVEMBER 2022 INSPECTION

No evidence of DNAPL accumulation was observed during the November 2022 inspection along the up-gradient slopes.

On the down-gradient slope, small quantities of DNAPL residuals were observed in the area located on the south/southeast side of the buried stone mill race adjacent to the creek where DNAPL residuals have been observed and removed over the past eight years of monitoring and inspection. Removal of two (2) partially full 5-gallon buckets of residual DNAPL material was performed using hand tools. The DNAPL volume totals were added to Table 3-3 for tracking purposes. DNAPL removal was discontinued where it would undermine the steep slope and underlying stone structure or result in deposition of residuals in the creek. Observation of these areas will continue in the spring of 2023 to address any changes or new seeps.

The small slope failure (trees and soil) observed along the north bank of Eighteen Mile Creek south of OS-4 during the June inspection remains and further slope wash out in this location was observed since the June inspection.

Three trees were observed to have collapsed to the north of OS-3 (upgradient from the access road and DNAPL collection trench.

2.3 COLLECTION TRENCH OVERFLOW FILTER SUMP STRUCTURE

Inspections of the collection trench drainage/filtration system including the Filter Sump and gravel filled sump drain were performed during the June and November 2022 inspections. Visual observations included noting the general condition of the drainage sump filter media and any evidence of excessive solids accumulation, presence of DNAPL residuals, a water sheen, or filter media washout. The following observations were recorded and summarized on written inspection reports, included in this report as Appendix A. Photos captured during the June and November 2022 inspections are included in Appendix B.

2.3.1 JUNE 2022 INSPECTION

No DNAPL, nor other evidence of contamination, was present on the surface of accumulated water or filter media in the filter sump. There was no erosion or disturbance of the drainage sump filter media, with only minor sediment present (approximately ½ - inch layer) on the top of the sand media. The overflow section (filtered water discharge chamber) of the sump structure was clear and free of any sediment or solids. Water overflow to the discharge pipe was observed at time of visual inspection.

The gravel filled sump drainage area adjacent to the filter sump was observed to be in good condition with no evidence of surficial water overflow, silting or DNAPL.

2.3.2 NOVEMBER 2022 INSPECTION

During the November 2022 inspection period, DNAPL or other signs of contamination were not present on the surface of accumulated water or filter media in the filter sump. There was no erosion or disturbance of the drainage sump filter media, with only a small (approximately ½ to 1 inch layer) amount sediment present on the top of the sand media. The overflow section (filtered water discharge chamber) of the sump structure was clear and free of any sediment or solids. A steady water overflow to the discharge pipe was observed at the time of visual inspection.

The gravel filled sump drainage area adjacent to the filter sump was covered in a heavy layer of fallen leaves and dead vegetation, however no evidence of surficial water overflow, silting or DNAPL was observed.

3 ANNUAL GROUNDWATER MONITORING

3.1 INTRODUCTION

A total of four (4) piezometers, located in the Creek Bank Area, were installed in 2012 and two (2) bedrock monitoring wells, located at the top of the escarpment within the VDM plant site, were installed in 1999 and 2006. The six wells have been monitored to establish a groundwater quality data set at the site as described below. A table summarizing the piezometer, monitoring well and DNAPL Observation Sump installation information (Table 3-1) was provided in the Operations & Maintenance Plan (OMP) report previously submitted by WSP (WSP, Revised June 2022).

3.2 GROUNDWATER PURGING

To ensure the collection of representative groundwater samples, each well (1-inch diameter piezometers and 2-inch monitoring wells) was purged of standing water prior to sampling. The purging process was conducted by measuring the depth to water, calculating the standing water volume present, and removing a minimum of three well volumes at each well (or until well was purged dry).

Purging methods employed by WSP personnel involved the use of dedicated polyethylene bailers suspended by nylon string or jute twine. Wells were purged into graduated containers and discharged into VDM's process sewer manhole. After the wells were purged, field measurements for pH, specific conductance, oxidation-reduction potential(ORP) and temperature were documented.

Well purging data, including the duration of the purging process, methods employed, volume of water removed, and measured field parameters are included in Appendix C on the Sample Collection Information Logs.

3.3 CREEK BANK PIEZOMETER SAMPLING AND ANALYTICAL RESULTS

Annual groundwater sampling was performed on June 3, 2022 on the four (4) piezometers (PZ-1, PZ-2, PZ-3 and PZ-4) installed as part of the Creek Bank Corrective Measures in 2012 (refer to Figure 2) as described below.

Following the purging of each piezometer, groundwater samples were collected at each location to assess the general groundwater quality up gradient and down gradient of the grout wall and bedrock cutoff system. Pre-sampling activities included a piezometer-maintenance check, and non-aqueous phase liquid (NAPL) determination. Piezometer PZ-1 was found to be dry to bottom of the screened zone during the sampling event, and therefore, no field parameters or samples could be obtained.

Groundwater samples were then collected from the remaining three piezometers for chemical analysis at Eurofins Laboratories, Inc. (Eurofins) in Buffalo, New York, a New York State Department of Health Environmental Laboratory Accreditation Program (ELAP) certified laboratory. The groundwater samples were shipped via courier under proper preservation and chain of custody procedures, within eight hours of collection.

At the conclusion of the annual sampling event, the physical condition of the piezometers and protective casings/locks was also noted, and any recommended repairs or maintenance required (if necessary) was

documented on the sample collection field logs provided in Appendix C. No condition issues were identified during the 2022 sampling event.

All piezometer groundwater samples collected were analyzed for TCL Volatile Organic Compounds (VOCs) in accordance with USEPA Method 8260C and TCL Semi-volatile Organic Compounds (SVOCs) in accordance with USEPA Method 8270C and the analytical results are presented in Table 3-1. This was the tenth year of Site monitoring following the completion of the Corrective Measures. The 2022 sample results are presented in Table 3-2 comparing this year's analytical results to the 2013 – 2021 groundwater sampling events analytical results.

The analytical results of PZ-3 during for annual sampling event on June 3, 2022 identified two SVOCs, phenol and naphthalene as exceeding the NYSDEC Part 703 Groundwater Quality Standards (GWQS). Phenol was detected during the June 2022 sampling event at a concentration of 28 ug/L continuing the trend in decreasing concentrations detected since 2018. Phenol has been detected in this piezometer sporadically since monitoring began in 2013 with previous detections ranging from non-detect to 130 ug/L. Naphthalene was detected during the June 2022 sampling event at a concentration of 10 ug/L, which is a small decrease from 12 ug/L detected during the May 2021 event. Historically, low-level detections of naphthalene were found in PZ-3 below the GWQS of 10 ug/L since monitoring began in 2013, however, the naphthalene concentration has exceeded or been equal to GWQS of 10 ug/L for the past six consecutive sampling events (November 2017, May 2018, May 2019, May 2020, June 2021 and June 2022). No other compounds were detected above the GWQS in the piezometers.

WSP continues to assess the piezometer groundwater data for trends and evaluate the effectiveness of the Corrective Measures as additional analytical data is collected during future annual monitoring events. The data collected to date from historical groundwater sampling events demonstrates that the DNAPL source in the upgradient bedrock appears to be contributing to phenol and naphthalene exceedances in PZ-3, which could impact on the creek water quality. However the recent results for both compounds are trending lower but it is too soon to assess if these trends will continue.

3.4 PLANT MONITORING WELL SAMPLING AND ANALYTICAL RESULTS

Annual groundwater sampling was performed on two (2) existing monitoring wells, MW-3D and MW-7D, located within the operational portion of the VDM facility at the top of the escarpment, to assess the general groundwater quality at these upgradient locations on the top of the escarpment.

Monitoring Well MW-7D was installed in 2006 by Benchmark as part of voluntary site investigations associated with the sale of the facility. During the June 2014 sampling event, the presumed location of MW-3D, installed in 1999 by Dames and Moore and located within the operational portion of the VDM facility, was noted as being damaged by plant snow removal activities the previous winter/spring, therefore no samples were obtained from what was previously thought to be MW-3D between the 2014 and 2019 sampling events. However, VDM uncovered a flush mounted well further west and directly south of the D-Building which is intact and appears to be consistent with the location of MW-3D on original Dames and Moore investigation figures. Beginning with the May 2020 monitoring event, this newly discovered flush-mount well was redeveloped and sampled. Location of the wells is presented on Figure 3.

Pre-sampling activities included measuring the well's water elevation and non-aqueous phase liquid (NAPL) determination. Following the purging of each well, groundwater samples were collected for chemical analysis and shipped via courier under proper preservation and chain of custody procedures to Eurofins Test America within eight hours of collection.

All monitoring well groundwater samples collected were analyzed for TCL Volatile Organic Compounds (VOCs) in accordance with USEPA Method 8260B and TCL Semi-volatile Organic Compounds (SVOCs) in accordance with USEPA Method 8270C and the analytical results are presented in Table 3-1. This is the tenth year of Site monitoring following the completion of the Corrective Measures. Table 3-2 presents the analytical results for the

2013 - 2022 groundwater sampling events for comparison purposes. A copy of the analytical report is provided in Appendix D.

3.4.1 MW-3D RESULTS

The analytical results of the MW-3D monitoring well samples collected during the June 2022 sampling event identified one detected compound, chlorobenzene, which exceeded the GWQS with a concentration of 16 ug/L .

3.4.2 MW-7D RESULTS

The analytical results of the MW-7D monitoring well samples collected during the June 2022 sampling event identified two (2) VOCs and four (4) SVOCs as exceeding the GWQS. Four (4) other Polycyclic Aromatic Hydrocarbon (PAH) compounds were also detected at the concentrations which exceed their respective NYS Division of Water Technical and Operational Guidance Series (TOGS) guidance values.

The following compounds were detected above the GWQS:

- Acenaphthene: 710 ug/L
- Biphenyl: 190 ug/L
- Ethylbenzene: 7.8 ug/L
- Naphthalene: 160 ug/L
- Phenanthrene: 1800 ug/L
- Xylenes, total: 9.8 ug/L

The following compounds were detected above the TOGS guidance values:

- Anthracene: 300 ug/L
- Fluoranthene: 650 ug/L
- Fluorene: 730 ug/L
- Pyrene: 390 ug/L

All concentrations were significantly lower (generally one order of magnitude) than the 2021 results for these compounds in MW-7D. A petroleum odor and initial sheen was observed during purging and sampling of MW-7D and approximately 1 inch of DNAPL was found at the bottom of the well.

3.4.3 PLANT MONITORING WELL ANALYTICAL SUMMARY

Naphthalene was the only VOC or SVOC detected upgradient at MW-7D within the operational portion of the VDM facility that was also detected in the down-gradient piezometer PZ-3 at the GWQS of 10 ug/L. No other compounds detected above the GWQS or TOGs in MW-3 or MW-7D were detected in the downgradient creek bank piezometers above GWQS or TOGs guidance values.

We continue to carefully observe the detected compounds in both the upgradient wells and the downgradient piezometers, however we do not believe further actions are warranted at this time based on the lack of an increased trend in downgradient detections and total concentrations of PAHs. WSP will continue to assess Plant

monitoring well groundwater data for trends and evaluate potential impacts of the up-gradient groundwater on the Corrective Measures as additional analytical data is collected from future annual monitoring events.

At the conclusion of the annual sampling event, the physical condition of the monitoring wells and protective casings or covers was noted, and any recommended repairs or maintenance required (if necessary) was documented on the sample collection field logs provided in Appendix C. No condition issues were identified during the 2022 sampling event.

3.5 FILTER SUMP STRUCTURE SAMPLING AND ANALYTICAL RESULTS

Annual sampling was performed on the collection trench drainage/filtration system overflow chamber (Filter Sump) as part of the semi-annual site inspection activities in June 2022. One aqueous sample was collected from the overflow chamber of the Filter Sump to assess the general performance of the grout wall and bedrock cutoff system. Pre-sampling activities included inspection of the vault filter media, a vault-maintenance check, and non-aqueous phase liquid (NAPL) determination.

After completion of these pre-sampling activities, a sample of the Filter Sump effluent water was measured for the following field parameters: pH, temperature, and specific conductivity. Aqueous grab samples were then collected for chemical analysis by direct fill methods. The aqueous samples were delivered to the laboratory under proper preservation and chain of custody procedures within eight hours of collection.

Samples collected from the Filter Sump overflow chamber were analyzed for TCL Volatile Organic Compounds (VOCs) in accordance with USEPA Method 8260B and TCL Semi-volatile Organic Compounds (SVOCs) in accordance with USEPA Method 8270C. Analytical results are presented in Table 3-1. Table 3-2 presents the 2022 results alongside results from the 2013 - 2021 Filter Sump sampling for comparison purposes.

The analytical results of the Filter Sump samples collected during the June 2022 sampling event identified one VOC exceeding the GWQS. Chloroform was detected at 11.00 ug/L exceeding the GWQS. The detected concentration of this contaminant is consistent with previous sampling result detections (ranging from 1.7 to 27 ug/L since monitoring began in 2013. No other VOCs or SVOCs were detected above the GWQS or TOGS. WSP will continue to assess the Filter Sump system overflow chamber data for trends and evaluate the effectiveness of the Corrective Measures as appropriate.

At the conclusion of the annual sampling event, the physical condition of the Filter Vault was noted, and any recommended repairs or maintenance required (if necessary) was documented on the sample collection field logs provided in Appendix C. No condition issues with the Filter Vault were identified during the 2022 sampling event.

4 MAINTENANCE & CLEAN-OUT ACTIVITIES

As described in Section 2.0 above, the inspections conducted in 2022 did not find evidence of DNAPL impacts to the DNAPL Collection Trench or Filter Sump, therefore maintenance or clean-out activities were not necessary or performed on these components of the Creek Bank Area remedial system. Repairs to the piezometers and monitoring wells were not required since no damage was observed to the protective casings, locks or the monitoring well or piezometer risers.

5 REFERENCES

1) WSP USA Inc., SNPE-VanDeMark Corrective Actions, Operation & Maintenance Plan, prepared for SNPE Inc., June 2022 Revision.

WSP USA INC.

Joshua Vernold
Staff Geologist

Patrick T. Martin, P.E., BCEE
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JMV/PTM:dml

TABLES

TABLE 3-1

SNPE-VANDEMARK SITE

Lab ID	NYSDEC Part 703 Groundwater Quality Standards	NYS T.O.G.S Groundwater Guidance Values	480-19661-4	480-198661-7	480-198661-5	480-198661-1	480-198661-2	480-198661-3	480-198661-6
Sample Date			6/3/2022	6/3/2022	6/3/2022	6/3/2022	6/3/2022	6/3/2022	6/3/2022
Sample ID			Vault Effluent	MW-3D	MW-7D	PZ-2	PZ-3	PZ-4	Blind Duplicate
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	(MW-7D) ug/L
Volatile Organics by GC/MS (US EPA Method 8260B)									
1,1,1-Trichloroethane	5.0	NV	-	-	-	-	-	-	-
1,1-Dichloroethane	5.0	NV	-	-	**1.5** J	-	-	-	1.5 J
1,1-Dichloroethene	5.0	NV	-	-	-	-	-	-	-
1,2-Dichloroethane	0.6	NV	-	-	-	-	-	-	-
2-Butanone	NV	50.0	-	-	-	-	-	-	-
Acetone	NV	50.0	-	-	-	-	3.60 J	-	-
Benzene	1.0	NV	-	-	-	-	-	-	-
Carbon disulfide	60.0	NV	-	-	-	-	-	-	-
Carbon tetrachloride	5.0	NV	-	-	-	-	-	-	-
Chlorobenzene	5.0	NV	-	**16** F1	-	-	-	-	-
Chloroethane	5.0	NV	-	-	-	-	-	-	-
Chloroform	7.0	NV	**11**	0.74 J	-	0.45 J	-		-
cis-1,2-Dichloroethene	5.0	NV	-	-	-	-	-	-	-
Ethylbenzene	5.0	NV	-	-	**7.8**	-	-	-	**8.2**
Isopropylbenzene	5.0	NV	-	-	2.3	-	-	-	2.4
Methylene Chloride	5.0	NV	-	-	3.60	-	-	-	3.1
Trichloroethene	5.0	NV	-	0.94 J	-	-	-	-	-
Vinyl chloride	2.0	NV	-	-	-	-	-	-	-
Xylenes, Total	5.0	NV	-	-	**9.8**	-	-	-	**11.0**
Semivolatile Organics by GC/MS (US EPA Method 8270C)									
Biphenyl	5.0	NV	-	-	**190** J	-	-	-	-
2,4-Dimethylphenol	1.0	50.0	-	-	-	-	-	-	-
2-Methylphenol	1.0	NV	-	-	-	-	-	-	-
2-Methylnaphthalene	NV	NV	-	-	150 J	-	3.50 J	-	-
2-Nitroaniline	5.0	NV	-	-	-	-	-	-	-
4-Methylphenol	1.0	NV	-	-	-	-	0.70 J	-	-
4-Methylphenol & 3-Methlyph	1.0	NV	-	-	-	-	-	-	-
Acenaphthene	20.0	NV	-	0.86 JF1	**710** J	-	5.50	-	**400** J
Acenaphthylene	NV	NV	-	-		-	-	-	-
Anthracene	NV	50.0	-	-	**300** J	-	-	-	**210** J
Benzaldehyde	NV	NV	-	-	-	-	-	-	-
Benzo(a)anthracene	NV	NV	-	-	-	-	-	-	-
Benzo(a)pyrene	ND	ND	-	-	-	-	-	-	-
Benzo(b)fluoranthene	NV	0.002	-	-	-	-	-	-	-
Benzo(k)fluoranthene	NV	0.002	-	-	-		-	-	-
Benzo(g,h,i)perylene	NV	NV	-	-	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	5.0	NV	-	-	-	-	-	-	-
Butyl benzyl phthalate	5.0	50.0	-	-	-	-	-	-	-
Caprolactam	NV	NV	-	-	-	-	-	-	-
Carbazole	NV	NV	-	-	-	-	0.66 J	-	-

TABLE 3-1

SNPE-VANDEMARK SITE

Lab ID	NYSDEC Part 703 Groundwater Quality Standards	NYS T.O.G.S Groundwater Guidance Values	480-19661-4	480-198661-7	480-198661-5	480-198661-1	480-198661-2	480-198661-3	480-198661-6
Sample Date			6/3/2022	6/3/2022	6/3/2022	6/3/2022	6/3/2022	6/3/2022	6/3/2022
Sample ID			Vault Effluent	MW-3D	MW-7D	PZ-2	PZ-3	PZ-4	Blind Duplicate
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	(MW-7D) ug/L
Chrysene	NV	0.002	-	-	-	-	-	-	-
Dibenzofuran	NV	NV	-	-	700 J	-	-	-	380 J
Di-n-butyl phthalate	50.0	NV	-	-	-	-	-	-	-
Di-n-octyl phthalate	NV	50.0	-	-	-	-	-	-	-
Diethyl phthalate	NV	50.0	-	-	-	-	-	-	-
Fluoranthene	NV	50.0	-	-	**650** J	-	-	-	**310** J
Fluorene	NV	50.0	-	-	**730** J	-	1.00 J	-	**390** J
Indeno[1,2,3-cd]pyrene	NV	0.002	-	-	-	-	-	-	-
Isophorone	NV	50.0	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	NV	NV	-	-	-	-	-	-	-
Naphthalene	10.0	NV	-	-	**160** J	-	**10**	-	**160** J
Nitrobenzene	0.4	NV	-	-	-	-	-	-	-
Phenanthrene	50.0	NV	-	-	**1800** J	-	0.60 J	-	**990** J
Phenol	1**	NV	-	-	-	-	**28**	-	-
Pyrene	NV	50.0	-	-	**390** J	0.35 J	-	-	**170** J
Phenanthrene - DL	NV	50.0	-	-	-	-	-	-	-

Vault Effluent Sample Results

Plant Monitoring Well Sample Results

Piezometer Sample Results

\- = Compound not detected above the Analytical Method Detection Limit

BOLD = Value exceed the groundwater quality standards.

BOLD = Value exceed the groundwater (GA) guidance values

** = The sum of all phenols

NV = No GW Quality Standard

ND

* = LCS or LCSD is outside acceptance limits

J = Analyte detected at a level less that Reporting Limit and greater than or equal to the Method Detection Limit. Concentrations in this range are estimated.

B = Analyte detected in the method blank.

F1 = MS and/or MSD Recovery is outside acceptance limits.

F2 = F2 MS/MSD RPD exceeds control limits

TABLE 3-2
SNPE-VANDEMARK SITE
HISTORICAL GROUNDWATER AND VAULT MONITORING RESULTS
LOCKPORT, NY

Lab ID	NYSDEC Part 703 Groundwater Quality Standards	NYS TOGS (1.1.1.) Groundwater Guidance Values	130617007-001	130930005-006B	480-62067-2	480-71961-4	480-80722-4	480-90488-4	480-101786-4	480-109820-4	480-117975-4	480-127262-4	480-136146-4	480-154189-3	480-169674-4	480-184953-4	480-19661-4
Sample Date			6/13/2013	9/26/2013	6/17/2014	11/25/2014	5/20/2015	11/4/2015	6/16/2016	11/17/2016	5/12/2017	11/8/2017	5/17/2018	05/29/2019	05/07/2020	5/19/2021	6/3/2022
Sample ID			Vault Effluent	Vault Effluent	Vault Effluent	Vault Effluent	Vault Effluent	Vault Effluent	Vault Effluent	Vault Effluent	Vault Effluent	Vault Effluent	Vault Effluent	Vault Effluent	Vault Effluent	Vault Effluent	Vault Effluent
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Volatile Organics by GC/MS (US EPA Method 8260B)																	
1,1,1-Trichloroethane	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,1-Dichloroethane	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,1-Dichloroethene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1,2-Dichloroethane	0.6	NV	-	-	-	-	-	-	-	-	-	-	-	**0.62** J	-	-	
2-Butanone	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Acetone	NV	50.0	1.8 J, B	-	-	-	-	-	-	-	-	-	-	-	-	-	
Benzene	1	NV			-	-	-	-	-	-	-	-	-	-	-	-	
Carbon disulfide	60	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Carbon tetrachloride	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chlorobenzene	5	NV			-	-	-	-	-	-	-	-	-	-	-	-	
Chloroethane	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chloroform	7	NV	4.2 J	-	3.7	**9.6**	2.4	**11**	1.7	3.6	**16**	**27**	**9.70**	**19.00**	**17.00**	**8**	**11**
cis-1,2-Dichloroethene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethylbenzene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Isopropylbenzene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-		-	
Methylene Chloride	5.0	NV														-	
Trichloroethene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Vinyl chloride	2	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Xylenes, Total	5	NV	-	-	-	-	-	-	-	-	-	-	-	-		-	
Semivolatile Organics by GC/MS (US EPA Method 8270C)																	
Biphenyl	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	1	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	1	NV			-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Nitroaniline	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	1	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol & 3-Methlyphenol	1	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	20	NV	-	-	-	0.86 JB*	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzaldehyde	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	NV	NV	-	-	-	3.1 J	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	ND	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	NV	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	NV	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	NV	NV	-	-	-	-	-	-		-		-	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	5	NV	-	-	-	-	**7.9**	3.2 J	-	-	-	-	-	-	-	-	-
Butyl benzyl phthalate	5	50.0	-	-	-	-	-	0.47 JB	-	-	-	-	-	-	-	-	-
Caprolactam	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbazole	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	NV	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butyl phthalate	50	NV	1.2 J, B	-	-	-	-	-	-	-	-	-	-	-	-	0.35 J B	-
Di-n-octyl phthalate	NV	50.0		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indeno[1,2,3-cd]pyrene	NV	0.002		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isophorone	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	10	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	0.4	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	50	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenol	1*	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene - DL	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Key:
Vault Effluent Sample Results
Plant Monitoring Well Sample Results
Piezometer Sample Results

Footnotes:
- = Compound not detected above the Analytical Method Detection Limit
BOLD = Value exceed the groundwater quality standards.
BOLD = Value exceed the groundwater (GA) guidance values
** = The sum of all phenols
NV = No GW Quality Standard
ND = Non-Detect

Qualifications:
* = LCS or LCSD is outside acceptance limits
J = Analyte detected at a level less that Reporting Limit and greater than or equal to the Method Detection Limit. Concentrations in this range are estimated.
B = Analyte detected in the method blank.
F1 = MS and/or MSD Recovery is outside acceptance limits.
F2 = F2 MS/MSD RPD exceeds control limits

TABLE 3-2
SNPE-VANDEMARK SITE
HISTORICAL GROUNDWATER AND VAULT MONITORING RESULTS
LOCKPORT, NY

Lab ID	NYSDEC Part 703 Groundwater Quality Standards	NYS TOGS (1.1.1.) Groundwater Guidance Values	130617007-003	130930005-001B	480-169674-7	480-184953-7	480-198661-7	130617007-002	130930005-002B	480-62067-1	480-71961-5	480-80722-5	480-90488-5	480-101786-5	480-109820-5	480-117975-5	480-127262-5	480-136146-5
Sample Date			6/13/2013	9/26/2013	05/07/2020	5/19/2021	6/3/2022	6/13/2013	9/26/2013	6/17/2014	11/25/2014	5/20/2015	11/4/2015	6/16/2016	11/17/2016	5/12/2017	11/8/2017	5/17/2018
Sample ID			MW-3D	MW-3D	MW-3D	MW-3D	MW-3D	MW-7D±	MW-7D	MW-7D	MW-7D	MW-7D	MW-7D	MW-7D	MW-7D	MW-7D	MW-7D	MW-7D
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Volatile Organics by GC/MS (US EPA Method 8260B)																		
1,1,1-Trichloroethane	5	NV	**11**	**13**	-	-	-	**19**	**71**	**97**	**140**	**52**	**59**	**71**	**41**	**36**	**64**	**44** F1 F2
1,1-Dichloroethane	5	NV	**87**	**120**	0.66 J	-	-	**79**	**260**	-	**350**	**180**	**210**	**230**	**140**	**150**	**210**	-
1,1-Dichloroethene	5	NV	**27**	**38**	-	-	-	**21**	**70**	**77**	**110**	**54**	**60**	**76**	**48**	**50**	**80**	**51** F1 F2
1,2-Dichloroethane	0.6	NV	**17**	**23**	**1.20**	-	-	**2** J	-	**4.8**	**6.6**	**3.6** J	**4.2** J	**4.9** J	**3.5** J	**3.6** J	**5.5**	**4.4**
2-Butanone	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.7	7.00 J*
Benzene	1	NV			0.76 J	-	-	-	-	-	-	-	-	-	-	-	0.33	-
Carbon disulfide	60	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	5	NV	-	-	-	-	-	-	-	0.53 J	-	-	-	-	-	-	0.29	0.32 J F2
Chlorobenzene	5	NV			**11.00**	**12**	**16** F1					-	-	-	-	-	0.62	-
Chloroethane	5	NV	-	-	-	-	-	**20**	**58**	**73**	**100**	**68**	**110**	**95**	**88** F1	**54**	**88**	**63** F1 F2
Chloroform	7	NV	-	-	-	-	0.74 J	-	-	0.8 J	-	-	-	-	-	-	0.49	0.57 J
cis-1,2-Dichloroethene	5	NV	-	-	-	-	-	-	-	0.98 J	-	-	-	-	0.12 J	-	1.0	0.93 J
Ethylbenzene	5	NV	-	-	-	-	-	2.9 J	-	2	-	-	-	-	2.0	4.2	1.6	1.60 F2
Isopropylbenzene	5	NV	-	-	0.81 J	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	5.0	NV				-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	5	NV	-	-	-	-	0.94 J	-	-	1.1	-	-	-	-	-	-	0.88	0.68 J
Vinyl chloride	2	NV	**17**	**26**	-	-	-	**5.3** J	**23**	**21**	**19**	**13**	**15**	**23**	**21** F1	**16**	**26**	**26** F1 F2
Xylenes, Total	5	NV	-	-		-	-	-	-	-	-	-	-	-	-	3.2 J	-	0.97
Semivolatile Organics by GC/MS (US EPA Method 8270C)																		
Biphenyl	5	NV	-	-	-	-	-	-	-	-	5	3.3 J	-	**18** F1	-	**77**	-	**24** J F1 F2
2,4-Dimethylphenol	1	50.0	-	-	-	-	-	-	-	-	0.48 J	-	-	-	-	-	-	-
2-Methylphenol	1	NV	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
2-Methylnaphthalene	NV	NV	-	-	-	-	-	-	1.1 J	-	-	-	-	24 F1	-	72	3.6	31 J F1 F2
2-Nitroaniline	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	1	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol & 3-Methlyphenol	1	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	20	NV	2.5 J	2.9 J	**44.00**	-	0.86 JF1	**27**	**28**	12	**39**	**42** DL	-	**87** J	**71**	**260**	**38**	**95** F1 F2
Acenaphthylene	NV	NV	-	-	-	-	-	1.2 J	-	-	0.56 J	0.54 J	-	-	-	-	-	-
Anthracene	NV	50.0	-	-	-	-	-	-	-	0.22 J	1 J	0.84 J	-	3 J	7.2 J F1	26	-	15 J F1
Benzaldehyde	NV	NV	-	-	-	-	-	-	-	-	0.84 JB*	-	-	-	-	-	-	-
Benzo(a)anthracene	NV	NV	-	-	-	-	-	-	-	-	-	-	-	1.5 J	4.8 J F1	8.0 J	-	7.1 J
Benzo(a)pyrene	ND	NV	-	-	-	-	-	-	-	-	-	-	-	**0.53** J	-	**3.6** J	-	-
Benzo(b)fluoranthene	NV	0.002	-	-	-	-	-	-	-	-	**0.28** J	-	-	**1** J	**4.7** J F2 F1	**4.9** J	-	**5.2** J
Benzo(k)fluoranthene	NV	0.002	-	-		-	-		-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	NV	NV	-	-	-	-	-	-				-	-	0.36 J	-	-	-	-
Bis(2-ethylhexyl)phthalate	5	NV	-	-	-	2.2 J	-	-	2.5 J	**6.7** J	3.5 J	-	-	-	-	-	-	-
Butyl benzyl phthalate	5	50.0	-	-	-	-	-	-	-	-	-	0.48 J	-	-	-	-	-	-
Caprolactam	NV	NV	-	-	2.80 J	-	-	-	-	-	-	-	2200	-	-	-	27	-
Carbazole	NV	NV	-	1.2 J	-	-	-	2.3 J	5.1	2.2 J	10 *	5.2	-	7	-	14 J	5.7	5.4 J
Chrysene	NV	0.002	-	-	-	-	-	-	-	-	-	-	-	**1.6** J F1	**4.7** J F1	**7.4** J	-	**7.7** J
Dibenzofuran	NV	NV	-	1.2 J	-	-	-	16	18	6.5 J	-	32	-	71 J	49 J F1	230	25	87 J F1 F2
Di-n-butyl phthalate	50	NV	2 J, B	1.4 J	-	3.70 J B	-	1.5 J, B	2.5 J	-	27	-	-	-	-	-	-	-
Di-n-octyl phthalate	NV	50.0	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-
Diethyl phthalate	NV	50.0	1 J	-	-	0.29 J	-	-	-	-	-	-	-	0.25 J	-	-	-	-
Fluoranthene	NV	50.0	-	-	-	-	-	-	1.5 J	0.34 J	1.3 J	1.2 J	-	19 F1	36 J F2 F1	**100**	5.2	**66** F1 F2
Fluorene	NV	50.0	-	-	-	-	-	8.9	9.7	4.3	18	22	-	46 J	41 J F1	**200**	17	**80** F1 F2
Indeno[1,2,3-cd]pyrene	NV	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isophorone	NV	50.0	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	10	NV	-	-	-	-	-	8.2	9.8	2.5	8	1.4 JB	-	**70** J	**11** J F2 F1	**190**	**59**	**72.00** F1 F2
Nitrobenzene	0.4	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	50	NV	-	-	-	-	-	1.8 J	4.2 J	1.1 J	7.5	6.2	-	**76** J	**62** F2 F1	**420**	9.2	**210** F2
Phenol	1*	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	NV	50.0	-	-	-	-	-	-	1.1 J	-	0.74 J	0.47 J	-	11 F1	21 J F2 F1	**59**	3.6	43.00 J F1 F2
Phenanthrene - DL	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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- Plant Monitoring Well Sample Results
- Piezometer Sample Results

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SNPE-VANDEMARK SITE
HISTORICAL GROUNDWATER AND VAULT MONITORING RESULTS
LOCKPORT, NY

Lab ID	NYSDEC Part 703 Groundwater Quality Standards	NYS TOGS (1.1.1.) Groundwater Guidance Values	480-154189-1	480-169674-5	480-184953-5	480-198661-5
Sample Date			5/29/2019	05/07/2020	5/19/2021	6/3/2022
Sample ID			MW-7D	MW-7D	MW-7D	MW-7D
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Volatile Organics by GC/MS (US EPA Method 8260B)						
1,1,1-Trichloroethane	5	NV	**20**	**12.0**	-	-
1,1-Dichloroethane	5	NV	**96** F1	**70.0** F1	**8.9**	**1.5** J
1,1-Dichloroethene	5	NV	**43**	**27.0**	4.9	-
1,2-Dichloroethane	0.6	NV	**4.3**	**3.3**	**1.4** J	-
2-Butanone	NV	50.0	-	-	-	-
Acetone	NV	50.0	-	-	-	-
Benzene	1	NV	-	-	-	-
Carbon disulfide	60	NV	0.85 J B	-	-	-
Carbon tetrachloride	5	NV	-	-	-	-
Chlorobenzene	5	NV	-	-	-	-
Chloroethane	5	NV	**65** F1	**47.0** F1	**19**	-
Chloroform	7	NV	-	-	-	-
cis-1,2-Dichloroethene	5	NV	-	-	-	-
Ethylbenzene	5	NV	-	3.4	**8.0**	**7.8**
Isopropylbenzene	5	NV	-	-	3.6	2.3
Methylene Chloride	5.0	NV	-	-	0.93 J	3.60
Trichloroethene	5	NV	-	-	-	-
Vinyl chloride	2	NV	**24** F1	**17.0**	**7.2**	-
Xylenes, Total	5	NV	-	1.8 J	**8.4**	**9.8**
Semivolatile Organics by GC/MS (US EPA Method 8270C)						
Biphenyl	5	NV	-	**170.0** F2	**1000** F2	**190** J
2,4-Dimethylphenol	1	50.0	-	-	-	-
2-Methylphenol	1	NV	-	-	-	-
2-Methylnaphthalene	NV	NV	-	300.0 F2	1600 F2	150 J
2-Nitroaniline	5	NV	-	-	-	-
4-Methylphenol	1	NV	-	-	-	-
4-Methylphenol & 3-Methlyphenol	1	NV	-	-	-	-
Acenaphthene	20	NV	**63** F1 F2	**570.0** F2	**3300** F2	**710** J
Acenaphthylene	NV	NV	-	9.9 J F1 F2	41.0 J F1 F2	
Anthracene	NV	50.0	10 J F1	**99** F1 F2	**460** F2	**300** J
Benzaldehyde	NV	NV	-	-	-	-
Benzo(a)anthracene	NV	NV	11 J, F2	52.0 F1 F2	250 J F1 F2	-
Benzo(a)pyrene	ND	NV	**9.2** J, F3	**15.0** J F1 F2	**59** J F1 F2	-
Benzo(b)fluoranthene	NV	0.002	**14** J, F4	**22** J F1 F2	**100** J F1 F2	-
Benzo(k)fluoranthene	NV	0.002	-	-	**27** J F1 F2	-
Benzo(g,h,i)perylene	NV	NV	7.1 J, F5	4.8 J F1	16.0 J F2	-
Bis(2-ethylhexyl)phthalate	5	NV	-	-	-	-
Butyl benzyl phthalate	5	50.0	-	-	-	-
Caprolactam	NV	NV	-	-	-	-
Carbazole	NV	NV	3.9 J	19.0 J * F1 F2	62 J * F1 F2	-
Chrysene	NV	0.002	**14** J	**46** J F1 F2	**210** F2	-
Dibenzofuran	NV	NV	35 J F1 F2	510.0 F2	3200 F2	700 J
Di-n-butyl phthalate	50	NV	-	-	-	-
Di-n-octyl phthalate	NV	50.0	-	-	-	-
Diethyl phthalate	NV	50.0	-	-	-	-
Fluoranthene	NV	50.0	**65** F1 F2	**450** F2	**2400** F2	**650** J
Fluorene	NV	50.0	36 J F1	**490** F2	**2800** F2	**730** J
Indeno[1,2,3-cd]pyrene	NV	0.002	**6.4** J F1 F2	-	**16** J F2	-
Isophorone	NV	50.0	-	-	-	-
N-Nitrosodi-n-propylamine	NV	NV	-	-	-	-
Naphthalene	10	NV	-	**280** F2	**1800** F2	**160** J
Nitrobenzene	0.4	NV	-	-	-	-
Phenanthrene	50	NV	**61** F2	-	**7100.0** F2	**1800** J
Phenol	1*	NV	-	-	-	-
Pyrene	NV	50.0	45.00 J F1 F2	**300** F2	**1600** F2	**390** J
Phenanthrene - DL	NV	50.0	-	**1300** F2	-	-

ater than or equal to
re estimated.

TABLE 3-2
SNPE-VANDEMARK SITE
HISTORICAL GROUNDWATER AND VAULT MONITORING RESULTS
LOCKPORT, NY

Lab ID	NYSDEC Part 703 Groundwater Quality Standards	NYS TOGS (1.1.1.) Groundwater Guidance Values	130617007-004	130930005-003B	480-62067-6	480-71961-1	480-80722-1	480-90488-1	480-101786-1	480-109820-1	480-117975-1	480-127262-1	480-136146-1	480-154189-4	480-169674-1	480-184953-1	480-198661-1
Sample Date			6/13/2013	9/26/2013	6/17/2014	11/25/2014	5/20/2015	11/4/2015	6/16/2016	11/17/2016	5/12/2017	11/8/2017	5/17/2018	5/29/2019	5/7/2020	5/19/2021	6/3/2022
Sample ID			PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2	PZ-2
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Volatile Organics by GC/MS (US EPA Method 8260B)																	
1,1,1-Trichloroethane	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	0.6	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone	NV	50.0	-	35	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	NV	50.0	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	1	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	60	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	7	NV	**12**	**14**	3.2	0.6 J	1.6	0.54 J	0.75 J	0.9 J	1.5	0.3	-	0.61 J	-	0.93 J	0.45 J
cis-1,2-Dichloroethene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	5	NV	-	-	-	-	-	-	-	-	-	0.28	-	-	-	-	-
Isopropylbenzene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	5.0	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	2	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes, Total	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Semivolatile Organics by GC/MS (US EPA Method 8270C)																	
Biphenyl	5	NV	-	-	-	0.1 J	-	-	0.86 J	0.65	-	-	-	-	-	-	-
2,4-Dimethylphenol	1	50.0	-	-	-	0.9 J	-	0.56 J	**2.6** J	**1.7** J	-	**1.6**	-	-	-	-	-
2-Methylphenol	1	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	NV	NV	-	-	-	-	-	-	1.5 J	0.94	-	-	-	-	-	-	-
2-Nitroaniline	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	1	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol & 3-Methlyphenol	1	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	20	NV	-	1.4 J	0.88 J	4.1 J	3.5 J	5	11	11	3.9 J	7.8	-	-	-	-	-
Acenaphthylene	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	NV	50.0	-	-	0.23 J	1.2 J	0.75 J	-	1.6 J	1.3	0.54 J	0.97	-	-	-	-	-
Benzaldehyde	NV	NV	-	-	-	0.87 JB	-	0.26 J	-	- J	-	-	-	-	-	-	-
Benzo(a)anthracene	NV	NV	-	2.0 J	0.38 J	0.53 J	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	ND	NV	-	**1.6** J	-	**0.5** J	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	NV	0.002	-	-	-	**0.43** J	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	NV	0.002	-	-	-	-	-	-	-	-							
Benzo(g,h,i)perylene	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	5	NV	1.5 J	1.1 J	-	3.4 J	-	1.8 J	-	3.5 JB	-	-	-	-	-	-	-
Butyl benzyl phthalate	5	50.0	-	-	-	-	-	0.47 JB	-	-	-	-	-	-	-	-	-
Caprolactam	NV	NV	-	-	-	-	-	140 DL	-	-	-	-	-	-	-	-	-
Carbazole	NV	NV	-	-	-	1.1 J*	0.88 J	1.2 J	2.8 J	2.7 J	1 J	2.5	-	-	-	-	-
Chrysene	NV	0.002	**1.1** J	**2.2** J	**0.42** J	**0.59** J	**0.42** J	**0.33** J	-	-	-	-	-	-	-	-	-
Dibenzofuran	NV	NV	-	-	-	-	-	0.51 J	0.72 J	0.73 J	-	0.55	-	-	-	-	-
Di-n-butyl phthalate	50	NV	-	-	-	-	0.48 JB	-	-	-	-	-	-	-	-	0.32 J B	-
Di-n-octyl phthalate	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	NV	50.0	-	-	-	-				-	-	-	-	-	-	-	-
Fluoranthene	NV	50.0	1.1 J	2.6 J	0.47 J	1.7 J	0.96 J	1.4 J	1.6 J	1.3 J	0.72 J	0.89	-	-	0.43 J	-	-
Fluorene	NV	50.0	-	-	0.32 J	1.9 J	1.5 J	2.2 J	4.2 J	4.2 J	1.4 J	3.0	-	-	-	-	-
Indeno[1,2,3-cd]pyrene	NV	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isophorone	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	NV	NV	-	-	-	4.1 JB	-	-	1 J	-	-	-	-	-	-	-	-
Naphthalene	10	NV	-	1.5 J	0.54 J	1.3 J	2.4 JB	1.4 J	3.7 J	2.3 J	-	1.6	-	-	-	-	-
Nitrobenzene	0.4	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	50	NV	1.2 J	3.3 J	1 J	5.4	3.1 J	6.1	8.6	6.8	2.5 J	4.5	-	-	0.76 J	0.47 J	-
Phenol	1*	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	NV	50.0	1.9 J	4.4 J	0.74 J	2.9 J	1.7 J	2 J	2.2 J	1.9 J	0.96 J	1.3	-	0.43 J	0.38 J	-	0.35 J
Phenanthrene - DL	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Key:
Vault Effluent Sample Results
Plant Monitoring Well Sample Results
Piezometer Sample Results

Footnotes:
- = Compound not detected above the Analytical Method Detection Limit
BOLD = Value exceed the groundwater quality standards.
BOLD = Value exceed the groundwater (GA) guidance values
** = The sum of all phenols
NV = No GW Quality Standard
ND = Non-Detect

Qualifications:
* = LCS or LCSD is outside acceptance limits
J = Analyte detected at a level less that Reporting Limit and greater than or equal to the Method Detection Limit. Concentrations in this range are estimated.
B = Analyte detected in the method blank.
F1 = MS and/or MSD Recovery is outside acceptance limits.
F2 = F2 MS/MSD RPD exceeds control limits

TABLE 3-2
SNPE-VANDEMARK SITE
HISTORICAL GROUNDWATER AND VAULT MONITORING RESULTS
LOCKPORT, NY

Lab ID	NYSDEC Part 703 Groundwater Quality Standards	NYS TOGS (1.1.1.) Groundwater Guidance Values	130617007-005	130930005-004B	480-62067-3	480-71961-2	480-80722-2	480-90488-2	480-101786-2	480-109820-2	480-117975-2	480-127262-2	480-136146-2	480-154189-5	480-169674-2	480-184953-2	480-198661-2
Sample Date			6/13/2013	9/26/2013	6/17/2014	11/25/2014	5/20/2015	11/4/2015	6/16/2016	11/17/2016	5/12/2017	11/8/2017	5/17/2018	5/29/2019	05/07/2020	5/19/2021	6/3/2022
Sample ID			PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3	PZ-3
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Volatile Organics by GC/MS (US EPA Method 8260B)																	
1,1,1-Trichloroethane	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	0.6	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	NV	50.0	-	8.6 J	16 ^	6 J	9.1 J	4.9 J	5.4 J	-	-	4.1	5 J*	-	-	-	3.60 J
Benzene	1	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	60	NV	-	-	0.61 J	-	-	3.0	-	-	0.58 J	0.7	-	-	-	-	-
Carbon tetrachloride	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	7	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	5	NV	-	-	-	-	-	-	-	-	-	0.24	-	-	-	-	-
Isopropylbenzene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	5.0	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	2	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes, Total	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Semivolatile Organics by GC/MS (US EPA Method 8270C)																	
Biphenyl	5	NV	-	-	-	-	-	-	-	-	-	0.69	-	-	-	-	-
2,4-Dimethylphenol	1	50.0	-	-	-	-	-	-	-	-	-	0.85	-	-	-	-	-
2-Methylphenol	1	NV	-	-	-	-	-	-	-	-	0.45 J H	0.44			-	-	-
2-Methylnaphthalene	NV	NV	-	-	0.79 J	1.3 J	1.9 J	2.0 J	0.72 J	-	-	4.6	3.8 J	4.8 J	5.90 J	4.10 J	3.50 J
2-Nitroaniline	5	NV	-	-	-	1.1 J	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	1	NV	-	**2.6** J	-	**1.2** J	**1.5** J	**1.4** J	0.49 J	-	-	**3.3**	**3.3** J	**1.7** J	**2.0** J	0.95 J	0.70 J
4-Methylphenol & 3-Methlyphenol	1	NV	-	-	-	-	-	-	-	-	-	-	**1.7** J		-	-	-
Acenaphthene	20	NV	-	3.7 J	1.6 J	2.7 J	4.2 J	3.7 J	1.0 J	-	1.2 J	5.5	3.9 J	6.1	7.5 J	5.4	5.50
Acenaphthylene	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	NV	50.0	1.1 J	- J	-	-	0.32 J	0.38 J	-	-	-	-	-	-	-	-	-
Benzaldehyde	NV	NV	-	-	-	1.5 JB*	-	-	0.33 J	-	-	0.39	0.52 J	-	-	0.40 J	-
Benzo(a)anthracene	NV	NV	1.3 J	- J	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	ND	NV	**1** J	- J	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	NV	0.002	-	-	-	-	-	-	-	**0.44** JK	-	-	-	-	-	-	-
Benzo(k)fluoranthene	NV	0.002					-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	NV	NV					-	-	-	-	-	-	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	5	NV	1.2 J	- J	-	**6.3**	-	2.7 J	-	-	-	-	-	-	-	-	-
Butyl benzyl phthalate	5	50.0	-	-	-	-	-	0.48 J B	-	-	-	-	-	-	-	-	-
Caprolactam	NV	NV	-	-	-	-	-	280	3.9 J	-	-	-	-	6.5	-	-	-
Carbazole	NV	NV	-	-	-	-	0.62 J	0.48 J	-	-	0.39 J	1.2	0.63 J	0.99 J	-	0.63 J	0.66 J
Chrysene	NV	0.002	**1.4** J	- J	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butyl phthalate	50	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate	NV	50.0	-	-	-	-	-	-	1 J	-	-	0.77	-	-	-	-	-
Diethyl phthalate	NV	50.0	-	-	-	-	-	-	1 J	-	-	-	-	-	-	-	-
Fluoranthene	NV	50.0	1.6 J	- J	-	-	-	-	-	0.52 J	-	-	-	-	-	-	-
Fluorene	NV	50.0	-	-	0.34 J	0.64 J	1.1 J	0.76 J	-	-	-	1.2	0.94 J	1.20 J	-	1.00 J	1.00 J
Indeno[1,2,3-cd]pyrene	NV	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isophorone	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	10	NV	-	3.4 J	2.5	4.4 J	7 B	6.6 B	2.2 J	1.3 J	-	**15**	**12**	**16**	**19** J	**12**	**10**
Nitrobenzene	0.4	NV	-	-	-	**0.49** J	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	50	NV	3.3 J	2.4 J	0.52 J	1.4 J	1.6 J	1.5 J	-	0.89 J	0.44 J	0.73	0.58 J	1 J	-	0.70 J	0.6 J
Phenol	1*	NV	-	**130**	**38**	**53**	**50**	**73**	**19**	-	**7.2**	-	**56**	**59**	**84**	**40**	**28**
Pyrene	NV	50.0	2.8 J	-	-	-	-	0.46 J	-	0.65 J	-	-	-	-	-	-	-
Phenanthrene - DL	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Key:
Vault Effluent Sample Results
Plant Monitoring Well Sample Results
Piezometer Sample Results

Footnotes:
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Qualifications:
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TABLE 3-2
SNPE-VANDEMARK SITE
HISTORICAL GROUNDWATER AND VAULT MONITORING RESULTS
LOCKPORT, NY

Lab ID	NYSDEC Part 703 Groundwater Quality Standards	NYS TOGS (1.1.1.) Groundwater Guidance Values	130617007-006	130930005-005B	480-62067-5	480-62067-3	480-80722-3	480-90488-3	480-101786-3	480-109820-3	480-117975-3	480-127262-3	480-136146-3	480-136146-3	480-169674-3	480-184953-3	480-198661-3
Sample Date			6/13/2013	9/26/2013	6/17/2014	11/25/2014	5/20/2015	11/4/2015	6/16/2016	11/17/2016	5/12/2017	11/8/2017	5/17/2018	5/29/2019	05/07/2020	5/19/21 & 6/4/21	6/3/2022
Sample ID			PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4	PZ-4
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Volatile Organics by GC/MS (US EPA Method 8260B)																	
1,1,1-Trichloroethane	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	0.6	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	NV	50.0	8.3 J, B	-	-	-	-	-	3.1 J	-	-	-	-	-	-	-	-
Benzene	1	NV			-		-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	60	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	7	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
cis-1,2-Dichloroethene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isopropylbenzene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	5.0	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	2	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes, Total	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Semivolatile Organics by GC/MS (US EPA Method 8270C)																	
Biphenyl	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	1	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	1	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Nitroaniline	5	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	1	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol & 3-Methlyphenol	1	NV	**5.9** J	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	20	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzaldehyde	NV	NV	-	-	-	0.89 JB*	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	ND	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	NV	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	NV	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bis(2-ethylhexyl)phthalate	5	NV	-	-	**15** J	3.1 J	-	1.7 J	-	-	-	-	-	-	-	-	-
Butyl benzyl phthalate	5	50.0	-	-	-	-	-	0.61 JB	-	-	-	-	-	-	-	-	-
Caprolactam	NV	NV	-	-	-	-	-	110	-	-	-	-	-	-	-	-	-
Carbazole	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	NV	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	NV	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butyl phthalate	50	NV	-	-	-	0.31 J	-	-	-	-	-	-	-	-	-	0.57 J B	-
Di-n-octyl phthalate	NV	50.0	-	-	-				1 J	-	-	0.77	-	-	-	-	-
Diethyl phthalate	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indeno[1,2,3-cd]pyrene	NV	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isophorone	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	NV	NV	-	-	-	4.2 JB	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	10	NV	4.3 J	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	0.4	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	50	NV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenol	1*	NV	**260**	**1.4** J	-	0.61 J	-	-	-	-	-	-	0.49 J	-	-	-	-
Pyrene	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene - DL	NV	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

VOC sample results are from resampling event on 6/4/21. due to loss of original sample volume on 5/19/21

SVOC results are from the 5/19/21 sampling event.

VOCs were resampled on 6/4/21 due to loss of original sample volume.

Key:
- Vault Effluent Sample Results
- Plant Monitoring Well Sample Results
- Piezometer Sample Results

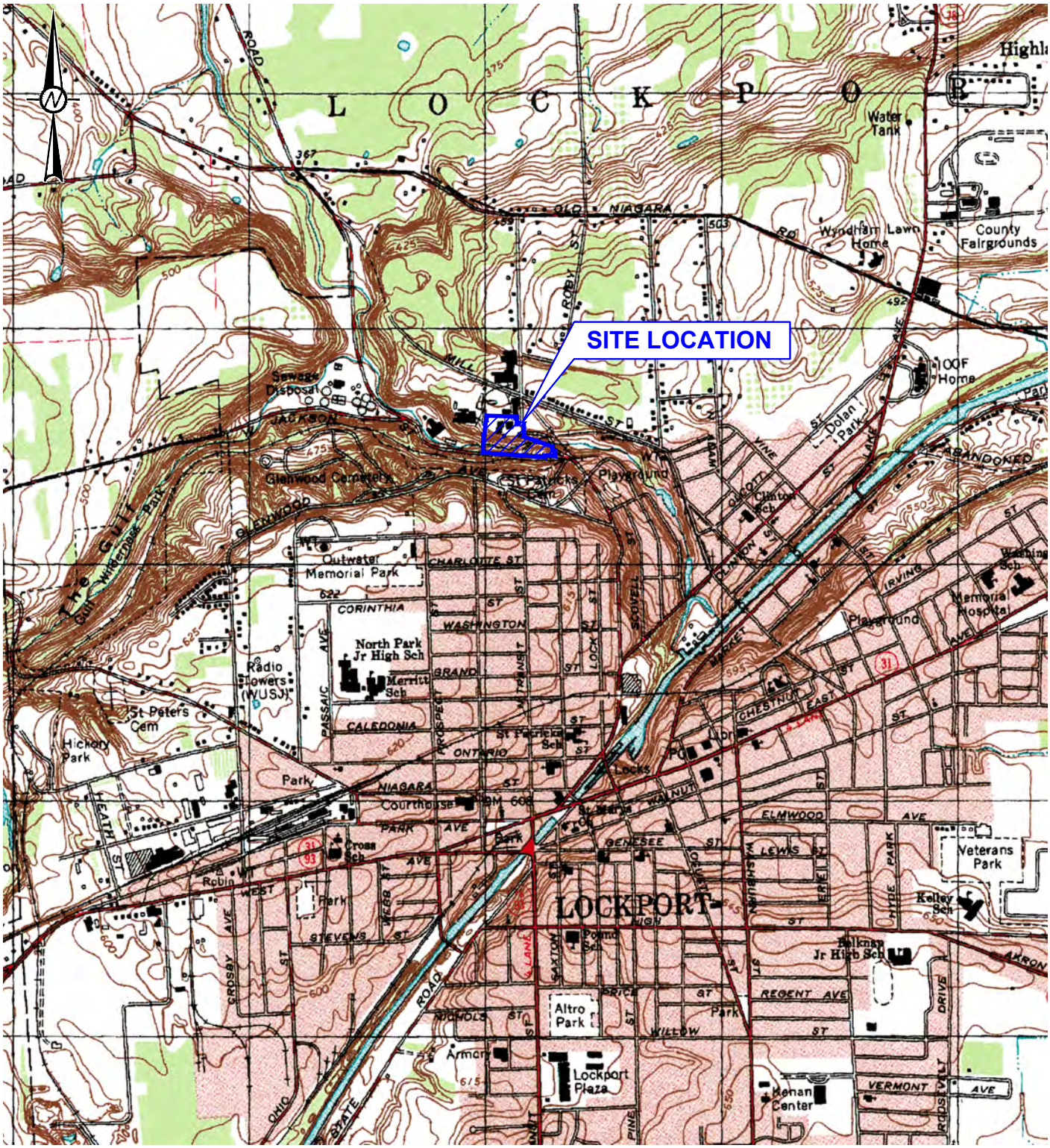
Footnotes:
- \- = Compound not detected above the Analytical Method Detection Limit
- **BOLD** = Value exceed the groundwater quality standards.
- **BOLD** = Value exceed the groundwater (GA) guidance values
- ** = The sum of all phenols
- NV = No GW Quality Standard
- ND = Non-Detect

Qualifications:
- * = LCS or LCSD is outside acceptance limits
- J = Analyte detected at a level less that Reporting Limit and greater than or equal to the Method Detection Limit. Concentrations in this range are estimated.
- B = Analyte detected in the method blank.
- F1 = MS and/or MSD Recovery is outside acceptance limits.
- F2 = F2 MS/MSD RPD exceeds control limits

Table 3-3
SNPE-VANDMARK SITE
SUMMARY of CREEK BANK DNAPL REMOVALS
Lockport, NY

Inspection Event	Approximate Volume of Manually Collected DNAPL (Gallons)
2015	15
Fall 2106	25
Spring/Fall 2017	25
Spring/Fall 2018	25
Spring/Summer 2019	127.5
Fall 2020	15
Spring 2021	5
Fall 2021	10
Fall 2022	4
Total DNAPL Recovered (Approx.)	**251.5**

FIGURES



NOTE(S)

1.) BASE MAP TAKEN FROM U.S.G.S. 7.5 MINUTE QUADRANGLE OF LOCKPORT, NEW YORK DATED 1980.

0 1000 2000
1" = 2000' FEET

CLIENT
SNPE - VANDEMARK

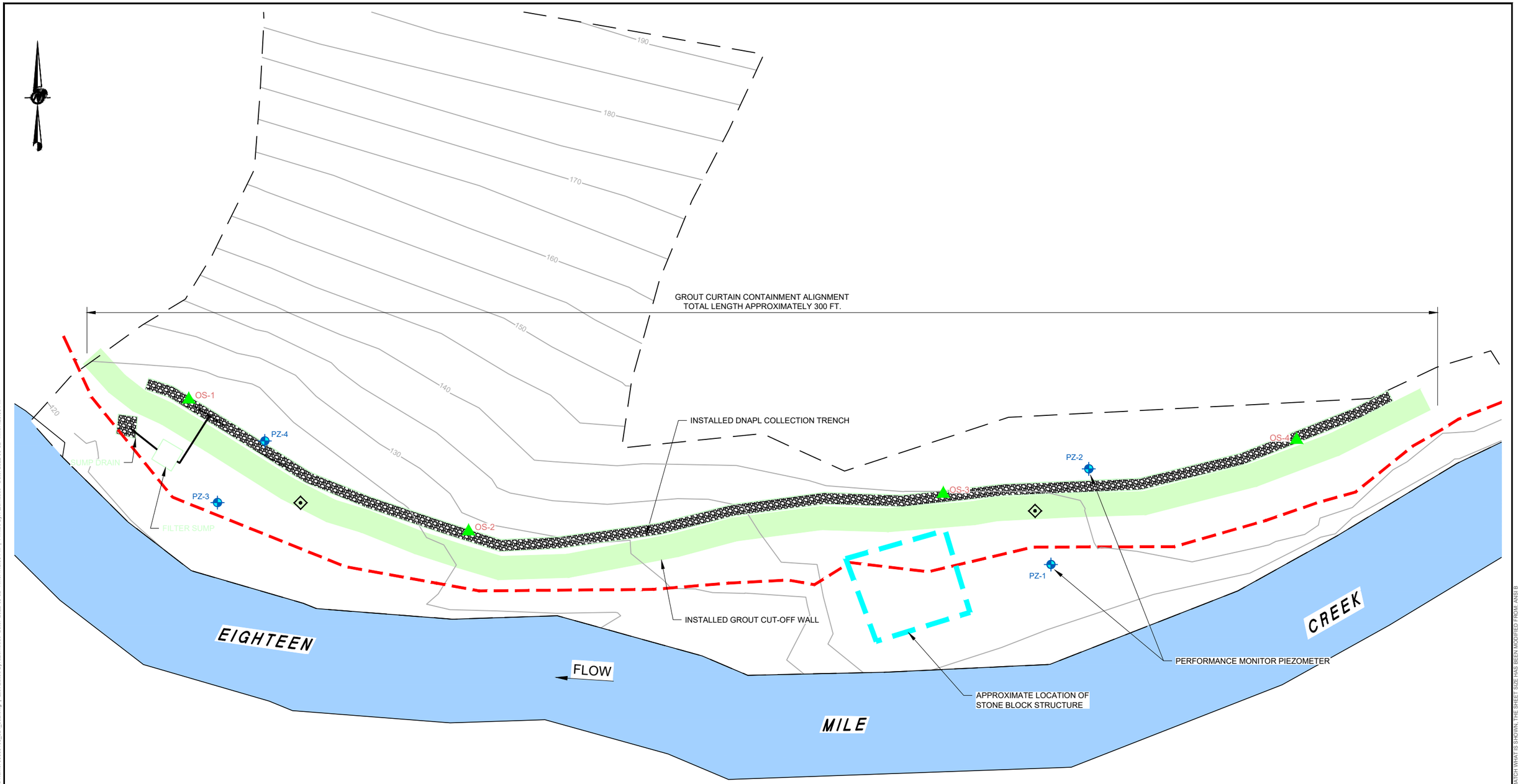
PROJECT
CREEK BANK AREA CORRECTION MEASURES PROJECT
LOCKPORT, NEW YORK

CONSULTANT
wsp

YYYY-MM-DD	2020-02-19
DESIGNED	PTM
PREPARED	MPB
REVIEWED	JMV
APPROVED	PTM

TITLE
SITE LOCATION MAP

PROJECT NO.	PHASE	REV.	FIGURE
093-89168	024	0	1



0 10 20
1" = 20' FEET

LEGEND

- APPROXIMATE LOCATION OF EROSION CONTROL MEASURES (SILT FENCE, STRAW BALES, AND SAND BAGS). TO REMAIN IN PLACE UNTIL SPRING OF 2013
- PZ-1 — PERFORMANCE MONITORING PIEZOMETER
- OBSERVATION SUMPS
- IN-SITU GROUT WALL PERMEABILITY SAMPLE LOCATION
- FLOWABLE FILL AND CEMENT GROUT
- No. 2 WASHED STONE
- EIGHTEEN-MILE CREEK

REFERENCES

1.) TOPOGRAPHY SHOWN ON THIS PLAN WAS TAKEN FROM SURVEY FILE xve-vandemark base.dwg, DATED 06-21-2010.

2.) CORE LOCATIONS SHOWN ON THIS PLAN ARE APPROXIMATE.

3.) MAP DIGITIZED FROM HARD COPY OF FIGURE 1 ENTITLED "SITE PLAN," PREPARED BY BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC.

4.) CONCRETE VAULT, PIEZOMETERS, GRAVEL COLLECTION TRENCH, OBSERVATION SUMPS, AND FRENCH DRAIN FROM 121205 FIELD DATA REVISED.XLSX, PREPARED BY WENDEL IN NOVEMBER 30, 2012.

CLIENT
SNPE - VANDEMARK

CONSULTANT
WSP GOLDER

YYYY-MM-DD	2022-03-02
DESIGNED	PTM
PREPARED	MPB
REVIEWED	AML
APPROVED	PTM

PROJECT
CREEK BANK AREA CORRECTIVE MEASURES PROJECT
LOCKPORT, NEW YORK

TITLE
CREEK BANK AREA SITE PLAN OPERATION & MAINTENANCE PLAN

PROJECT NO.	PHASE	REV.	FIGURE
093-89168	024	0	2

Path: \\BUFFALO\Jobs\Vandemark\SNPE - VanDeMark - Standard\40_PROD\ | File Name: (093)89168_024_002.dwg | Last Edited By: azumbado Date: 2022-03-02 Time:4:12:36 PM | Printed By: AZumbado Date: 2022-03-02 Time:4:26:36 PM

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
1 in
0

LEGEND

- FENCE
- SILT FENCE
- STRAW BALES
- SAND BAGS
- FLOWABLE FILL AND CEMENT GROUT
- No. 2 WASHED STONE
- OS-2 — 4-INCH DNAPL OBSERVATION SUMP (IN COLLECTION TRENCH)
- PZ-1 — 1-INCH PERFORMANCE MONITORING PIEZOMETER
- 1999 INVESTIGATION BEDROCK MONITORING WELL
- 2006 BEDROCK MONITORING WELL
- MONITORING WELL (UNKNOWN INSTALLATION DATE)
- EIGHTEEN-MILE CREEK

REFERENCES

1.) TOPOGRAPHY SHOWN ON THIS PLAN WAS TAKEN FROM SURVEY FILE xve-vandemark base.dwg, DATED 06-21-2010.

2.) BOREHOLE AND CORE LOCATIONS SHOWN ON THIS PLAN ARE APPROXIMATE.

3.) MAP DIGITIZED FROM HARD COPY OF FIGURE 1 ENTITLED "SITE PLAN," PREPARED BY BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC.

4.) CONCRETE VAULT, PIEZOMETERS, GRAVEL COLLECTION TRENCH, OBSERVATION SUMPS, AND FRENCH DRAIN FROM 121205 FIELD DATA REVISED.XLSX, PREPARED BY WENDEL IN NOVEMBER 30, 2012.

0 20 40
1" = 40' FEET

CLIENT
SNPE - VANDEMARK

CONSULTANT
WSP GOLDER

YYYY-MM-DD	2022-03-04
DESIGNED	PTM
PREPARED	MPB
REVIEWED	AML
APPROVED	PTM

PROJECT
CREEK BANK AREA CORRECTIVE MEASURES PROJECT
LOCKPORT, NEW YORK

TITLE
OMP SITE PLAN -VDM PLANT & CREEK BANK AREA

PROJECT NO.	PHASE	REV.	FIGURE
093-89168	024	0	3

APPENDIX

A OPERATIONS AND MONITORING SUMMARY INSPECTION FORMS

OPERATIONS & MONITORING SUMMARY

SHEET 1 OF 2

PROJECT NUMBER: GL21452243.001
PROJECT TITLE: Creek Bank Corrective Measures -Site No. 932149
OWNER: SNPE - VanDeMark Chemical
CONTRACTOR:
LOCATION: Lockport, New York
SUB CONTRACTOR(S):

DATE: JUNE 3, 2022

WEATHER: CLEAR TEMPERATURE: LOW: 60 @ 9:15 HIGH 68 @ 11:30
CLOUD COVER NONE PRECIPITATION NONE WIND LIGHT

WSP
~~GOLDER~~ PERSONNEL ON SITE:

PAT MARTIN
JOSH VERNOLO

SUMMARY OF FIELD INSPECTION OBSERVATIONS:

1. Effluent Vault: WATER WAS CLEAR, NO SHEEN OR DNAPL OBSERVED. WATER LEVEL IN DISCHARGE CHAMBER WAS AT THE TOP OF THE OUTLET PIPE. SEDIMENT ACCUMULATION ON TOP OF SAND BEDDING WAS APPROX. ½" THICK, NO APPRECIABLE CHANGE FROM FALL INSPECTION.

2: Observation Sumps:

OS-1: APPROX 4'-8" OF WATER (TO TOP OF SUMP CASING) ; ~6" BROWN SEDIMENT

OS-2: DRY

OS-3: 5-6" OF SEDIMENT, 15" OF WATER, NO SHEEN OR ODOR OBSERVED

OS-4: DRY

3. Upgradient Slope Observations:

- UPPER SLOPE AREA: NO OBSERVED DNAPL(TAR) ACCUMULATIONS
- UPPER SLOPE AREA: NORTH OF OS-3; NO OBSERVED DNAPL ACCUMULATIONS
- ~~UPPER~~ LOWER SLOPE AREA: NORTH OF OS-1, NO " " "

4: Downgradient Slope Observations:

- LOWER SLOPE AREA: NO OBSERVED DNAPL ACCUMULATIONS
- UPPER SLOPE AREA: NEW DNAPL ACCUMULATIONS OBSERVED IN 3-4 LOCATIONS ACROSS APPROX 35' LENGTH VARYING FROM 1' TO 8' FROM EDGE OF WATER. THESE ACCUMULATIONS WERE LOCATED ON BANK AREA SOUTH ^ & SOUTHEAST OF PZ-2

GOLDER ACTIVITIES AND TEST RESULTS:

- TEST PIT ADVANCED IN DNAPL COLLECTION TRENCH 35' EAST OF PZ-2, NO DNAPL OR GW ENCOUNTERED, STONE WAS CLEAN & DRY. DEPTH OF APPROX 16"
- MID TEST PIT (2' WEST OF OS-3) NO DNAPL OR GW ENCOUNTED, STONE WAS "MUDDY" AND DAMP. DEPTH OF PIT WAS APPROX 24" BELOW GRADE.
- LOWER TEST PIT (25' EAST OF OS-1) NO DNAPL OR SHEEN, GW ENCOUNTED 1-2" BELOW GRADE. DEPTH OF PIT WAS APPROX 12" BELOW GRADE.

WSP

SUBMITTED BY:

Patrick T. Martin

Date: 6/3/22

GOLDER FORM: R4-0699
(Rev: May 2021)

WSP USA Inc.

OPERATIONS & MONITORING SUMMARY

SHEET 1 OF 2

PROJECT NUMBER:	GL21452243.001	**PROJECT TITLE:**	Creek Bank Corrective Measures -Site No. 932149
OWNER:	SNPE - VanDeMark Chemical	**CONTRACTOR:**	
LOCATION:	Lockport, New York	**SUB CONTRACTOR(S):**	

DATE: Nov. 9, 2022

WEATHER: **TEMPERATURE:** **LOW:** 37 @ 0900 **HIGH** _____ @ _____
CLOUD COVER clear **PRECIPITATION** none **WIND** calm

WSP PERSONNEL ON SITE:

Pat Martin, Josh Verneuil 0830 - 1100

SUMMARY OF FIELD INSPECTION OBSERVATIONS:

1. Effluent Vault: Roughly 1" of sediment deposited atop sand (lt. brown/tan). No sheen or odor present. Vault drain free of debris, clearly draining

2: Observation Sumps:

OS-1: 6" of soil built up around sump, hard to dig out sump cap. 4'1" water in sump, 5" sed
OS-2: DRY no sheen, no odor
OS-3: 14" of water and 6" of sediment, dark brown/black. No sheen, no odor
OS-4: DRY

3. Upgradient Slope Observations:

Three new trees collapsed upgradient of OS-3, per Jim Wrazen. Covered w/ leaves, hard to observe
- SLOPE NORTH OF OS-1 WAS RELATIVELY VISIBLE; NO DNAPLE ACCUMULATIONS WERE OBSERVED IN THIS AREA

4: Downgradient Slope Observations:

~4gal of coal tar removed by hand approx 40' South of OS-3 along steep bank.
Much of creek bank was obscured by fallen leaves
- SMALL AREAS OF DNAPL ACCUMULATIONS (~2) WERE OBSERVED, HOWEVER THEY WERE IN AREAS NOT SAFELY ACCESSIBE FOR REMOVAL CLOSE TO THE WATER'S EDGE.

GOLDER ACTIVITIES AND TEST RESULTS:

Part of creek bank south of OS-4 has washed out, three large trees & roots collapsed

Dug obs. test pit 30' east of OS-1. Water encountered 9" bgs, filter fabric encountered @ 12" bgs.
Dug 2nd test pit 15' east of OS-3. Encountered filter fabric @ 17" bgs. No water observed. No odor

* Bring new marking stakes for obs. sumps.

SUBMITTED BY:

Date: 11/09/22

APPENDIX

B INSPECTION PHOTOGRAPHS

Project Title: **2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits**

Photo 1: East end of DNAPL collection trench, near PZ-2, facing east. (June 3, 2022)	
Photo 2: DNAPL collection trench from OS-2, looking east up slope. (June 3, 2022)	

Project Title: 2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits	
Photo 3: DNAPL collection trench test pit adjacent to OS-3. (June 3, 2022)	
Photo 4: DNAPL collection trench test pit adjacent to OS-3. Top of filter geotextile exposed. (June 3, 2022)	

Project Title: 2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits	
Photo 5: OS-3. (June 3, 2022)	
Photo 6: Escarpment slope north of DNAPL collection trench. Adjacent to OS-2. (June 3, 2022)	

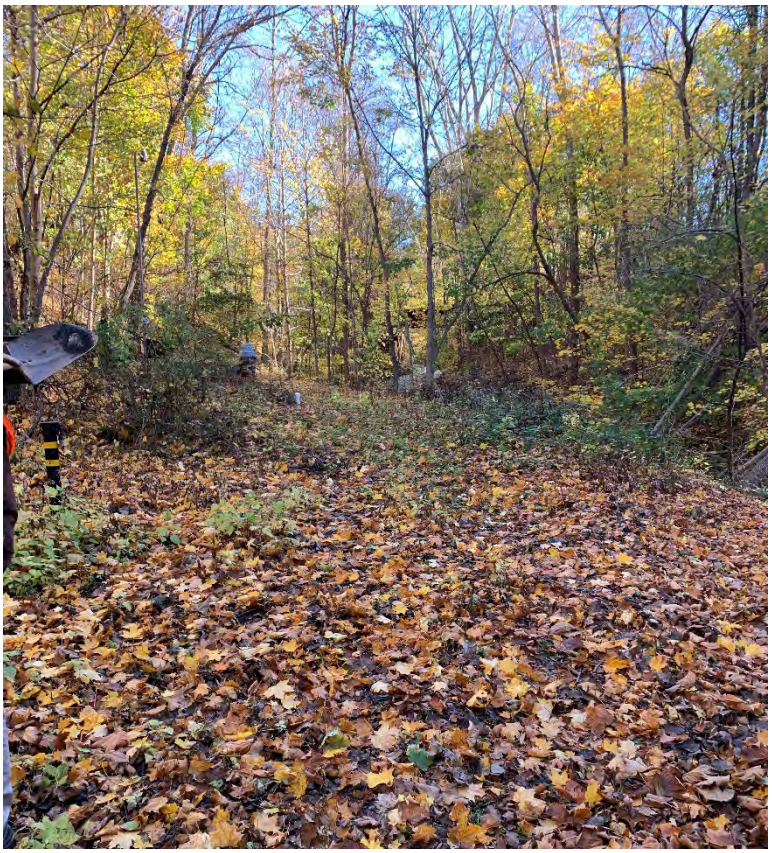
Project Title: **2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits**

Photo 7: Escarpment slope along upper creek bank area. Looking northeast. (June 3, 2022)	
Photo 8: Observation sump 1 (OS-1) (June 3, 2022)	

Project Title: 2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits	
Photo 9: Interior of filter vault – top of sand filter bed and overflow chamber. (June 3, 2022)	
Photo 10: East end of DNAPL collection trench. Looking east. (June 3, 2022)	

Project Title: 2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits	
Photo 11: Test pit in DNAPL collection trench, 25' east of OS-1. (June 3, 2022)	
Photo 12: Test pit in DNAPL collection trench, 25' east of OS-1. (June 3, 2022)	

Project Title: 2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits	
Photo 13: Coal tar residuals seep area observation on steep slope south of PZ-1. (June 3, 2022)	
Photo 14: Location of coal tar residuals seep observation on steep slope south of PZ-1. (June 3, 2022)	

Project Title: 2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits	
Photo 15: West side of stone mill race structure adjacent to creek. (June 3, 2022)	
Photo 16: Looking east at east end of DNAPL collection trench (Nov. 9, 2022)	

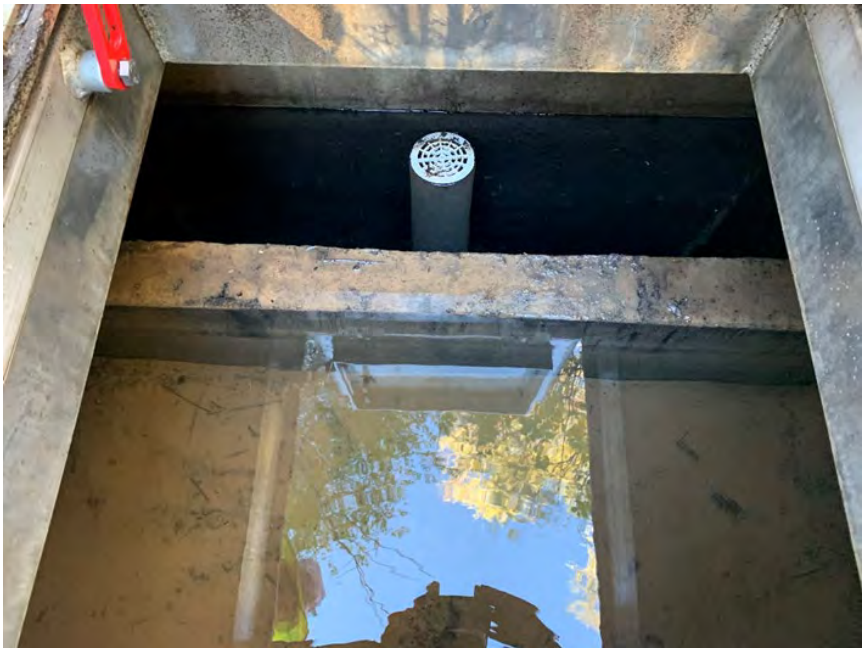
Project Title: 2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits	
Photo 17: Looking west toward lower creek bank area – observed area of recent slope failure into creek. (Nov. 9, 2022)	
Photo 18: Edge of 18-Mile Creek south of PZ-4. (Nov. 9, 2022)	

Project Title: 2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits	
Photo 19: Lower creek bank area, looking west toward PZ-1. (Nov. 9, 2022)	
Photo 20: Slope north/northeast of OS-1 in area of previous slope slide. (Nov. 9, 2022)	

Project Title: 2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits	
Photo 21: Upgradient slope north of DNAPL collection trench. North of OS-1 and OS-2. (Nov. 9, 2022)	
Photo 22: Slope north of DNAPL accumulation trench. Looking northeast near OS-2. (Nov. 9, 2022)	

Project Title: 2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits	
Photo 23: OS-1 at west end of DNAPL Accumulation trench. Sediment accumulation on top of OS location from slope erosion. (Nov. 9, 2022)	

Project Title: 2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits	
Photo 24: OS-1 at west end of DNAPL Accumulation trench. (Nov. 9, 2022)	

Project Title: 2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits	
Photo 25: Interior of filter vault - sand filter bed and overflow chamber. (Nov. 9, 2022)	
Photo 26: Test pit in DNAPL collection trench, 30' east of OS-1. (Nov. 9, 2022)	

Project Title: 2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits	
Photo 27: Test pit in DNAPL collection trench, 30' east of OS-1. (Nov. 9, 2022)	
Photo 28: Test pit in DNAPL collection trench, 15' east of OS-3. (Nov. 9, 2022)	

Project Title: 2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits	
Photo 29: DNAPL Collection trench area, looking east toward upper creek bank area. (Nov. 9, 2022)	

Project Title: 2022 Annual Monitoring/Inspection Report SNPE-VDM Creek Bank Corrective Actions : June and November Site Visits	
Photo 30: Location of manual coal tar residuals manual removal on south side of buried stone structure -south of PZ-3. (Nov. 9, 2022)	

APPENDIX

C SAMPLE COLLECTION INFORMATION LOGS

SAMPLE COLLECTION INFORMATION FORM

GAI PROJECT NAME: SNPE/VDM Annual Sampling WSP PROJECT NO.: 21452459

WELL ID.: PZ-1 SOURCE CODES: ~~RIVER OR STREAM, WELL, SOIL, OTHER (CIRCLE ONE)~~

PURGING INFORMATION (IF APPLICABLE)

PURGE DATE (yy/mm/dd):		TIME (24 HR CLOCK):		ELAPSED HRS:	
CASING VOL.(Gal.):		GAL. PURGED (Gal.):			
PURGING DEVICE (SEE BELOW):		PURGING DEVICE MATERIAL:	HD Polyethylene	DEDICATED:	

SAMPLE COLLECTION INFORMATION

SAMPLING DATE (yy/mm/dd):		TIME (24 HR CLOCK):		MATRIX:	
SAMPLING DEVICE (SEE BELOW):		DEDICATED:		FILTERED:	
SAMPLING DEVICE MATERIAL:		SAMPLE TYPE:			

(A) AIR-LIFT PUMP (B) BLADDER PUMP (C) PERISTALTIC PUMP (D) SCOOP/SHOVEL (E) BAILER (F) OTHER (SPECIFY)

WELL INFORMATION (IF APPLICABLE)

REFERENCE POINT:	Top of casing (TOC)	LAND ELEVATION (FT./MSL):	140.50
REF. PT. ELEV.(FT. MSL):	143.14	WELL DEPTH (FT.):	10.60
DEPTH TO WATER (REF. PT.):	DRY to 10.6'	STICKUP (FT.):	2.64
GW. ELEV.(FT. MSL.):		WELL DIAMETER (INCHES):	1.00

FIELD MEASURMENTS (FOUR REPLICATES)

	Initial Purge	Final Purge	Initial Sample	Final Sample
pH (STD)				
SPEC. COND.(uS)				
TEMPERATURE (C)				
OTHER (SPECIFY)				

COMMENTS/CALCULATIONS

WEATHER CONDITIONS:

SAMPLE APPEARANCE:

1" DIA. CASING CONTAINS .041 Gal./Ft.
2" DIA. CASING CONTAINS .163 Gal./Ft.
4" DIA. CASING CONTAINS .652 Gal./Ft.

1" full bailer = 0.053 GAL

PZ-1 IS TYPICALLY DRY

DRY UNABLE TO SAMPLE

PLEASE INCLUDE SAMPLE BOTTLE SIZE, BOTTLE COLOR, BOTTLE MATERIAL, PRESERVATIVES AND ANALYTICAL METHODS ON LABORATORY CUSTODY FORMS.

SAMPLER SIGNATURE DATE 6/3/22

SAMPLE COLLECTION INFORMATION FORM

GAI PROJECT NAME: SNPE/VDM Annual Sampling | WSP PROJECT NO.: 21452459

WELL ID.: PZ-2 | SOURCE CODES: ~~RIVER OR STREAM, WELL, SOIL, OTHER (CIRCLE ONE)~~

PURGING INFORMATION (IF APPLICABLE)

PURGE DATE (yy/mm/dd):	6/3/22	TIME (24 HR CLOCK):	0926	ELAPSED HRS:	0:30
CASING VOL.(Gal.):	0.20 gal	GAL. PURGED (Gal.):	0.2 to Dry		
PURGING DEVICE (SEE BELOW):	BAILER	PURGING DEVICE MATERIAL:	HD Polyethylene	DEDICATED:	YES

SAMPLE COLLECTION INFORMATION

SAMPLING DATE (yy/mm/dd):	6/3/22	TIME (24 HR CLOCK):	1006	MATRIX:	GW
SAMPLING DEVICE (SEE BELOW):	SAME AS ABOVE	DEDICATED:	YES	FILTERED:	NO
SAMPLING DEVICE MATERIAL:	SAME AS ABOVE	SAMPLE TYPE:	GRAB		

(A) AIR-LIFT PUMP (B) BLADDER PUMP (C) PERISTALTIC PUMP (D) SCOOP/SHOVEL (E) BAILER (F) OTHER (SPECIFY)

WELL INFORMATION (IF APPLICABLE)

REFERENCE POINT:	Top of casing (TOC)	LAND ELEVATION (FT./MSL):	142.20
REF. PT. ELEV.(FT. MSL):	145.31	WELL DEPTH (FT.):	11.02
DEPTH TO WATER (REF. PT.):	6.05	STICKUP (FT.):	3.11
GW. ELEV.(FT. MSL.):		WELL DIAMETER (INCHES):	1.00

FIELD MEASURMENTS (FOUR REPLICATES)

	Initial Purge	Final Purge	Initial Sample	Final Sample
pH (STD)	——.——	——.——	——.——	6.26
SPEC. COND.(uS)	————	————	————	711
TEMPERATURE (C)	——.——	——.——	——.——	16.8
OTHER (SPECIFY) ORP (mV)	————	————	————	+33.9

COMMENTS/CALCULATIONS

WEATHER CONDITIONS: 66°F, Sunny, calm

SAMPLE APPEARANCE: clear, aqueous, slight brownish tint. no odor

1" DIA. CASING CONTAINS .041 Gal./Ft. 11.02 - 6.05 = 4.97' x .041 = 0.20 gal

2" DIA. CASING CONTAINS .163 Gal./Ft.

4" DIA. CASING CONTAINS .652 Gal./Ft.

1" full bailer = 0.053 GAL

PLEASE INCLUDE SAMPLE BOTTLE SIZE, BOTTLE COLOR, BOTTLE MATERIAL, PRESERVATIVES AND ANALYTICAL METHODS ON LABORATORY CUSTODY FORMS.

SAMPLER SIGNATURE: [signature] DATE: 6/3/22

8

SAMPLE COLLECTION INFORMATION FORM

GAI PROJECT NAME: SNPE/VDM Annual Sampling | WSP PROJECT NO.: 21452459

WELL ID.: PZ-3 | SOURCE CODES: ~~RIVER OR STREAM, WELL, SOIL, OTHER (CIRCLE ONE)~~

PURGING INFORMATION (IF APPLICABLE)

PURGE DATE (yy/mm/dd):	6/3/22	TIME (24 HR CLOCK):	1025	ELAPSED HRS:	0.23
CASING VOL.(Gal.):	0.21 gal	GAL. PURGED (Gal.):	0.65		
PURGING DEVICE (SEE BELOW):	BAILER	PURGING DEVICE MATERIAL:	HD Polyethylene	DEDICATED:	YES

SAMPLE COLLECTION INFORMATION

SAMPLING DATE (yy/mm/dd):	6/3/22	TIME (24 HR CLOCK):	1048	MATRIX:	GW
SAMPLING DEVICE (SEE BELOW):	SAME AS ABOVE	DEDICATED:	YES	FILTERED:	NO
SAMPLING DEVICE MATERIAL:	SAME AS ABOVE	SAMPLE TYPE:	GRAB		

(A) AIR-LIFT PUMP (B) BLADDER PUMP (C) PERISTALTIC PUMP (D) SCOOP/SHOVEL (E) BAILER (F) OTHER (SPECIFY)

WELL INFORMATION (IF APPLICABLE)

REFERENCE POINT:	Top of casing (TOC)	LAND ELEVATION (FT./MSL):	122.70
REF. PT. ELEV.(FT. MSL):	124.82	WELL DEPTH (FT.):	9.12
DEPTH TO WATER (REF. PT.):	4.06'	STICKUP (FT.):	2.12
GW. ELEV.(FT. MSL.):		WELL DIAMETER (INCHES):	1.00

FIELD MEASURMENTS (FOUR REPLICATES)

	Initial Purge	Final Purge	Initial Sample	Final Sample
pH (STD)	___.___	___.___	___.___	8.59
SPEC. COND.(uS)	____	____	____	1549
TEMPERATURE (C)	___.___	___.___	___.___	16.3
OTHER (SPECIFY) ORP (MV)	____	____	____	+ 5.2

COMMENTS/CALCULATIONS

WEATHER CONDITIONS: 68°F, sunny, calm

SAMPLE APPEARANCE: clear, aqueous, no odor

1" DIA. CASING CONTAINS .041 Gal./Ft. 9.12 - 4.06 = 5.06' x 0.041 = 0.21 gal

2" DIA. CASING CONTAINS .163 Gal./Ft.

4" DIA. CASING CONTAINS .652 Gal./Ft.

1" full bailer = 0.053 GAL

PLEASE INCLUDE SAMPLE BOTTLE SIZE, BOTTLE COLOR, BOTTLE MATERIAL, PRESERVATIVES AND ANALYTICAL METHODS ON LABORATORY CUSTODY FORMS.

SAMPLER SIGNATURE [signature] DATE 6/3/22

SAMPLE COLLECTION INFORMATION FORM

GAI PROJECT NAME: SNPE/VDM Annual Sampling | WSP PROJECT NO.: 21452459

WELL ID.: PZ-4 | SOURCE CODES: ~~RIVER OR STREAM, WELL, SOIL, OTHER~~ (CIRCLE ONE)

PURGING INFORMATION (IF APPLICABLE)

PURGE DATE (yy/mm/dd):	6/3/22	TIME (24 HR CLOCK):	10:50	ELAPSED HRS:	0.25
CASING VOL.(Gal.):	0.29	GAL. PURGED (Gal.):	0.9		
PURGING DEVICE (SEE BELOW):	BAILER	PURGING DEVICE MATERIAL:	HD Polyethylene	DEDICATED:	YES

SAMPLE COLLECTION INFORMATION

SAMPLING DATE (yy/mm/dd):	6/3/22	TIME (24 HR CLOCK):	1115	MATRIX:	GW
SAMPLING DEVICE (SEE BELOW):	SAME AS ABOVE	DEDICATED:	YES	FILTERED:	NO
SAMPLING DEVICE MATERIAL:	SAME AS ABOVE	SAMPLE TYPE:	GRAB		

(A) AIR-LIFT PUMP (B) BLADDER PUMP (C) PERISTALTIC PUMP (D) SCOOP/SHOVEL (E) BAILER (F) OTHER (SPECIFY)

WELL INFORMATION (IF APPLICABLE)

REFERENCE POINT:	Top of casing (TOC)	LAND ELEVATION (FT./MSL):	123.90
REF. PT. ELEV.(FT. MSL):	126.11	WELL DEPTH (FT.):	10.33
DEPTH TO WATER (REF. PT.):	3.29'	STICKUP (FT.):	2.21
GW. ELEV.(FT. MSL.):		WELL DIAMETER (INCHES):	1.00

FIELD MEASURMENTS (FOUR REPLICATES)

	Initial Purge	Final Purge	Initial Sample	Final Sample
pH (STD)	___.___	___.___	___.___	8.96
SPEC. COND.(uS)	____	____	____	126
TEMPERATURE (C)	___.___	___.___	___.___	14.2
OTHER (SPECIFY) ORP (mV)	____	____	____	41.4

COMMENTS/CALCULATIONS

WEATHER CONDITIONS: 69°F, Sunny, calm

SAMPLE APPEARANCE: Clear, aqueous, no odor

1" DIA. CASING CONTAINS .041 Gal./Ft. 10.33 - 3.29' = 7.04' × 0.041 = 0.29 gal

2" DIA. CASING CONTAINS .163 Gal./Ft.

4" DIA. CASING CONTAINS .652 Gal./Ft.

1" full bailer = 0.053 GAL

Bailer rope should be replaced (Frayed rope)

PLEASE INCLUDE SAMPLE BOTTLE SIZE, BOTTLE COLOR, BOTTLE MATERIAL, PRESERVATIVES AND ANALYTICAL METHODS ON LABORATORY CUSTODY FORMS.

SAMPLER SIGNATURE: [signature] DATE: 6/3/22

SAMPLE COLLECTION INFORMATION FORM

GAI PROJECT NAME: SNPE/VDM Annual Sampling | WSP PROJECT NO.: 21452459

WELL ID.: FILTER VAULT EFFLUENT | SOURCE CODES: OTHER- FILTER VAULT

PURGING INFORMATION (IF APPLICABLE)

PURGE DATE (yy/mm/dd):		TIME (24 HR CLOCK):		ELAPSED HRS:	
CASING VOL.(Gal.):		GAL. PURGED (Gal.):			
PURGING DEVICE (SEE BELOW):		PURGING DEVICE MATERIAL:		DEDICATED:	

SAMPLE COLLECTION INFORMATION

SAMPLING DATE (yy/mm/dd):	6/3/22	TIME (24 HR CLOCK):	1135	MATRIX:	GW
SAMPLING DEVICE (SEE BELOW):	DIPPED BOTTLE	DEDICATED:	YES	FILTERED:	YES (vault)
SAMPLING DEVICE MATERIAL:	AMBER GLASS (unpreserved)	SAMPLE TYPE:	GRAB		

(A) AIR-LIFT PUMP (B) BLADDER PUMP (C) PERISTALTIC PUMP (D) SCOOP/SHOVEL (E) BAILER (F) OTHER (SPECIFY)

WELL INFORMATION (IF APPLICABLE)

REFERENCE POINT:		LAND ELEVATION (FT./MSL):	
REF. PT. ELEV.(FT. MSL):		WELL DEPTH (FT.):	
DEPTH TO WATER (REF. PT.):		STICKUP (FT.):	0.00
GW. ELEV.(FT. MSL.):		WELL DIAMETER (INCHES):	

FIELD MEASURMENTS (FOUR REPLICATES)

	Initial Purge	Final Purge	Initial Sample	Final Sample
pH (STD)	___.___	___.___	___.___	8.76
SPEC. COND.(uS)	____	____	____	681
TEMPERATURE (C)	___.___	___.___	___.___	13.7
OTHER (SPECIFY) ORP (mV)	____	____	____	+27.2

COMMENTS/CALCULATIONS

WEATHER CONDITIONS: 70°F, sunny, calm

SAMPLE APPEARANCE: clear, aqueous, no odor

1" DIA. CASING CONTAINS .041 Gal./Ft.
2" DIA. CASING CONTAINS .163 Gal./Ft.
4" DIA. CASING CONTAINS .652 Gal./Ft.

PLEASE INCLUDE SAMPLE BOTTLE SIZE, BOTTLE COLOR, BOTTLE MATERIAL, PRESERVATIVES AND ANALYTICAL METHODS ON LABORATORY CUSTODY FORMS.

SAMPLER SIGNATURE: [signature] DATE: 6/3/22

SAMPLE COLLECTION INFORMATION FORM

GAI PROJECT NAME: SNPE/VDM Annual Sampling | WSP PROJECT NO.: 21452459

WELL ID.: MW-3D | SOURCE CODES: ~~RIVER OR STREAM, WELL, SOIL, OTHER (CIRCLE ONE)~~

PURGING INFORMATION (IF APPLICABLE)

PURGE DATE (yy/mm/dd):	6/3/22	TIME (24 HR CLOCK):	1240	ELAPSED HRS:	0:26
CASING VOL.(Gal.):	0.8	GAL. PURGED (Gal.):	1.2 to DRY		
PURGING DEVICE (SEE BELOW):	BAILER	PURGING DEVICE MATERIAL:	HD Polyethylene	DEDICATED:	YES

SAMPLE COLLECTION INFORMATION

SAMPLING DATE (yy/mm/dd):	6/3/22	TIME (24 HR CLOCK):	1306	MATRIX:	GW
SAMPLING DEVICE (SEE BELOW):	SAME AS ABOVE	DEDICATED:	YES	FILTERED:	NO
SAMPLING DEVICE MATERIAL:	SAME AS ABOVE	SAMPLE TYPE:	GRAB		

(A) AIR-LIFT PUMP (B) BLADDER PUMP (C) PERISTALTIC PUMP (D) SCOOP/SHOVEL (E) BAILER (F) OTHER (SPECIFY)

WELL INFORMATION (IF APPLICABLE)

REFERENCE POINT:	Top of casing (TOC)	LAND ELEVATION (FT	* 195.00
REF. PT. ELEV.(FT. MSL	* 195.00	WELL DEPTH (FT.):	25.98
DEPTH TO WATER (REF. PT.):	~~10.~~ 20.80	STICKUP (FT.):	0.00
GW. ELEV.(FT. MSL.):		WELL DIAMETER (INCHES):	2"

* Approximate grade elevation for In-plant monitoring wells based on 2010 Wendel Survey to top of escarpment

FIELD MEASURMENTS (FOUR REPLICATES)

	Initial Purge	Final Purge	Initial Sample	Final Sample
pH (STD)	___.___	___.___	___.___	7.85
SPEC. COND.(uS)	____	____	____	2668
TEMPERATURE (C)	___.___	___.___	___.___	17.9
OTHER (SPECIFY) (ORP mV)	____	____	____	+928

COMMENTS/CALCULATIONS

WEATHER CONDITIONS: 73°F, sunny, breezy

SAMPLE APPEARANCE: brown tint, very turbid, aqueous, no odor or sheen

1" DIA. CASING CONTAINS .041 Gal./Ft. - 20.80 = 5.18' × 0.163 = 0.84 gal

2" DIA. CASING CONTAINS .163 Gal./Ft.

4" DIA. CASING CONTAINS .652 Gal./Ft.

MS, MSD collected here

PLEASE INCLUDE SAMPLE BOTTLE SIZE, BOTTLE COLOR, BOTTLE MATERIAL, PRESERVATIVES AND ANALYTICAL METHODS ON LABORATORY CUSTODY FORMS.

SAMPLER SIGNATURE: [signature] DATE: 6/3/22

SAMPLE COLLECTION INFORMATION FORM

GAI PROJECT NAME: SNPE/VDM Annual Sampling | WSP PROJECT NO.: 21452459

WELL ID.: MW-7D | SOURCE CODES: ~~RIVER OR STREAM, WELL, SOIL, OTHER (CIRCLE ONE)~~

PURGING INFORMATION (IF APPLICABLE)

PURGE DATE (yy/mm/dd):	6/3/22	TIME (24 HR CLOCK):	1336	ELAPSED HRS:	0:36
CASING VOL.(Gal.):	2.6	GAL. PURGED (Gal.):	8.0		
PURGING DEVICE (SEE BELOW):	BAILER	PURGING DEVICE MATERIAL:	HD Polyethylene	DEDICATED:	YES

SAMPLE COLLECTION INFORMATION

SAMPLING DATE (yy/mm/dd):	6/3/22	TIME (24 HR CLOCK):	~~1336~~ 1420	MATRIX:	GW
SAMPLING DEVICE (SEE BELOW):	SAME AS ABOVE	DEDICATED:	~~YES~~ NO, used new disposable poly bailer	FILTERED:	NO
SAMPLING DEVICE MATERIAL:	SAME AS ABOVE	SAMPLE TYPE:	GRAB		

(A) AIR-LIFT PUMP (B) BLADDER PUMP (C) PERISTALTIC PUMP (D) SCOOP/SHOVEL (E) BAILER (F) OTHER (SPECIFY)

WELL INFORMATION (IF APPLICABLE)

REFERENCE POINT:	Top of casing (TOC)	LAND ELEVATION (FT	* 201.00
REF. PT. ELEV.(FT. MSL	* 201.00	WELL DEPTH (FT.):	~~45.85'~~ 46.40
DEPTH TO WATER (REF. PT.):	30.55	STICKUP (FT.):	0.00
GW. ELEV.(FT. MSL.):		WELL DIAMETER (INCHES):	2.00"

* Approximate grade elevation for In-plant monitoring wells based on 2010 Wendel Survey to top of escarpment

FIELD MEASURMENTS (FOUR REPLICATES)

	Initial Purge	Final Purge	Initial Sample	Final Sample
pH (STD)	___.___	___.___	___.___	7.43
SPEC. COND.(uS)	____	____	____	6039
TEMPERATURE (C)	___.___	___.___	___.___	17.8 ← 17.8
OTHER (SPECIFY) ORP (mV)	____	____	____	-93.7

COMMENTS/CALCULATIONS

WEATHER CONDITIONS: 74°F, sunny, breezy

SAMPLE APPEARANCE: grayish tint, black specs in suspension, petroleum odor, oil sheen on surface, 1" DNAPL at bottom of well 46.4' bgs.

1" DIA. CASING CONTAINS .041 Gal./Ft.

2" DIA. CASING CONTAINS .163 Gal./Ft. 46.4 − 30.55 = 15.85' × 0.163 = 2.58 gal × 3 = 7.8 gal

4" DIA. CASING CONTAINS .652 Gal./Ft.

Blind duplicate collected here

PLEASE INCLUDE SAMPLE BOTTLE SIZE, BOTTLE COLOR, BOTTLE MATERIAL, PRESERVATIVES AND ANALYTICAL METHODS ON LABORATORY CUSTODY FORMS.

SAMPLER SIGNATURE: [signature] DATE: 6/3/22

SAMPLE COLLECTION INFORMATION FORM

GAI PROJECT NAME: SNPE/VDM Annual Sampling WSP PROJECT NO.: 21452459

WELL ID.: BLIND DUPLICATE @ MW-7D SOURCE CODES: RIVER OR STREAM, WELL, SOIL, OTHER (CIRCLE ONE)

PURGING INFORMATION (IF APPLICABLE)

PURGE DATE (yy/mm/dd):		TIME (24 HR CLOCK):		ELAPSED HRS:	
CASING VOL.(Gal.):		GAL. PURGED (Gal.):			
PURGING DEVICE (SEE BELOW):		PURGING DEVICE MATERIAL:		DEDICATED:	

SAMPLE COLLECTION INFORMATION

SAMPLING DATE (yy/mm/dd):		TIME (24 HR CLOCK):		MATRIX:	
SAMPLING DEVICE (SEE BELOW):		DEDICATED:	YES / NO	FILTERED:	YES / NO
SAMPLING DEVICE MATERIAL:		SAMPLE TYPE:	GRAB/COMPOSITE (CIRCLE ONE)		

(A) AIR-LIFT PUMP (B) BLADDER PUMP (C) PERISTALTIC PUMP (D) SCOOP/SHOVEL (E) BAILER (F) OTHER (SPECIFY)

WELL INFORMATION (IF APPLICABLE)

REFERENCE POINT:		LAND ELEVATION (FT./MSL):	
REF. PT. ELEV.(FT. MSL):		WELL DEPTH (FT.):	
DEPTH TO WATER (REF. PT.):		STICKUP (FT.):	0.00
GW. ELEV.(FT. MSL.):		WELL DIAMETER (INCHES):	

FIELD MEASURMENTS (FOUR REPLICATES)

	Initial Purge	Final Purge	Initial Sample	Final Sample
pH (STD)	__.__	__.__	__.__	__.__
SPEC. COND.(uS)	____	____	____	____
TEMPERATURE (C)	__.__	__.__	__.__	__.__
OTHER (SPECIFY)	____	____	____	____

COMMENTS/CALCULATIONS

WEATHER CONDITIONS:

SAMPLE APPEARANCE:

1" DIA. CASING CONTAINS .041 Gal./Ft. see MW-7D form for details

2" DIA. CASING CONTAINS .163 Gal./Ft.

4" DIA. CASING CONTAINS .652 Gal./Ft.

1" full bailer = 0.053 GAL

MS and MSD sampled at: MW-3D see MW-3D for details

PLEASE INCLUDE SAMPLE BOTTLE SIZE, BOTTLE COLOR, BOTTLE MATERIAL, PRESERVATIVES AND ANALYTICAL METHODS ON LABORATORY CUSTODY FORMS.

SAMPLER SIGNATURE DATE 6/3/22

APPENDIX

D ANALYTICAL DATA

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-198661-1
Client Project/Site: Vandemark Chemical site

For:
Golder Associates Inc.
455 Commerce Dr.
Suite 8
Buffalo, New York 14228

Attn: Mr. Patrick Martin

Authorized for release by:
6/14/2022 1:55:08 PM
Rebecca Jones, Project Management Assistant I
Rebecca.Jones@et.eurofinsus.com

Designee for

Brian Fischer, Manager of Project Management
(716)504-9835
Brian.Fischer@et.eurofinsus.com

Table of Contents

Definitions/Glossary

Client: Golder Associates Inc.
Job ID: 480-198661-1
Project/Site: Vandemark Chemical site

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
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

Job ID: 480-198661-1

Laboratory: Eurofins Buffalo

Narrative

Job Narrative
480-198661-1

Comments
No additional comments.

Receipt
The samples were received on 6/3/2022 3:45 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 13.7º C.

GC/MS VOA
Method 8260C: The following sample was diluted due to the abundance of non-target analytes: MW-7D (480-198661-5). Elevated reporting limits (RLs) are provided.

Method 8260C: The continuing calibration verification (CCV) associated with batch 480-629615 recovered outside acceptance criteria, low biased, for Chloromethane. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported. The associated samples are impacted: PZ-2 (480-198661-1), PZ-3 (480-198661-2), PZ-4 (480-198661-3), FILTER VAULT EFF (480-198661-4) and MW-7D (480-198661-5).

Method 8260C: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: BLIND DUPLICATE (480-198661-6), MW-3D (480-198661-7), MW-3D (480-198661-7[MS]) and MW-3D (480-198661-7[MSD]). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 8270D: The continuing calibration verification (CCV) associated with batch 480-629177 recovered outside acceptance criteria, low biased, for multiple analytes. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

Method 8270D: The following samples were diluted due to the nature of the sample matrix: MW-7D (480-198661-5) and BLIND DUPLICATE (480-198661-6). Elevated reporting limits (RLs) are provided.

Method 8270D: The following samples were diluted due to the nature of the sample matrix: MW-7D (480-198661-5) and BLIND DUPLICATE (480-198661-6). As such, surrogate recoveries are below the calibration range or are not reported, and elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: PZ-2 — Lab Sample ID: 480-198661-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloroform	0.45	J	1.0	0.34	ug/L	1		8260C	Total/NA
Pyrene	0.35	J	5.2	0.35	ug/L	1		8270D	Total/NA

Client Sample ID: PZ-3 — Lab Sample ID: 480-198661-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.6	J	10	3.0	ug/L	1		8260C	Total/NA
2-Methylnaphthalene	3.5	J	5.0	0.60	ug/L	1		8270D	Total/NA
4-Methylphenol	0.70	J	10	0.36	ug/L	1		8270D	Total/NA
Acenaphthene	5.5		5.0	0.41	ug/L	1		8270D	Total/NA
Carbazole	0.66	J	5.0	0.30	ug/L	1		8270D	Total/NA
Fluorene	1.0	J	5.0	0.36	ug/L	1		8270D	Total/NA
Naphthalene	10		5.0	0.76	ug/L	1		8270D	Total/NA
Phenanthrene	0.60	J	5.0	0.44	ug/L	1		8270D	Total/NA
Phenol	28		5.0	0.39	ug/L	1		8270D	Total/NA

Client Sample ID: PZ-4 — Lab Sample ID: 480-198661-3

No Detections.

Client Sample ID: FILTER VAULT EFF — Lab Sample ID: 480-198661-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bromodichloromethane	2.8		1.0	0.39	ug/L	1		8260C	Total/NA
Dibromochloromethane	0.37	J	1.0	0.32	ug/L	1		8260C	Total/NA
Chloroform	11		1.0	0.34	ug/L	1		8260C	Total/NA

Client Sample ID: MW-7D — Lab Sample ID: 480-198661-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	1.5	J	2.0	0.76	ug/L	2		8260C	Total/NA
Ethylbenzene	7.8		2.0	1.5	ug/L	2		8260C	Total/NA
Isopropylbenzene	2.3		2.0	1.6	ug/L	2		8260C	Total/NA
Methylene Chloride	3.6		2.0	0.88	ug/L	2		8260C	Total/NA
Xylenes, Total	9.8		4.0	1.3	ug/L	2		8260C	Total/NA
Biphenyl	190	J	1000	130	ug/L	200		8270D	Total/NA
2-Methylnaphthalene	150	J	1000	120	ug/L	200		8270D	Total/NA
Acenaphthene	710	J	1000	82	ug/L	200		8270D	Total/NA
Anthracene	300	J	1000	56	ug/L	200		8270D	Total/NA
Dibenzofuran	700	J	2000	100	ug/L	200		8270D	Total/NA
Fluoranthene	650	J	1000	80	ug/L	200		8270D	Total/NA
Fluorene	730	J	1000	72	ug/L	200		8270D	Total/NA
Naphthalene	160	J	1000	150	ug/L	200		8270D	Total/NA
Phenanthrene	1800		1000	88	ug/L	200		8270D	Total/NA
Pyrene	390	J	1000	68	ug/L	200		8270D	Total/NA

Client Sample ID: BLIND DUPLICATE — Lab Sample ID: 480-198661-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	1.5	J	2.0	0.76	ug/L	2		8260C	Total/NA
Ethylbenzene	8.2		2.0	1.5	ug/L	2		8260C	Total/NA
Isopropylbenzene	2.4		2.0	1.6	ug/L	2		8260C	Total/NA
Methylene Chloride	3.1		2.0	0.88	ug/L	2		8260C	Total/NA
Xylenes, Total	11		4.0	1.3	ug/L	2		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Buffalo

Client Sample ID: BLIND DUPLICATE (Continued)
Lab Sample ID: 480-198661-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	400	J	1000	82	ug/L	200		8270D	Total/NA
Anthracene	210	J	1000	56	ug/L	200		8270D	Total/NA
Dibenzofuran	380	J	2000	100	ug/L	200		8270D	Total/NA
Fluoranthene	310	J	1000	80	ug/L	200		8270D	Total/NA
Fluorene	390	J	1000	72	ug/L	200		8270D	Total/NA
Naphthalene	160	J	1000	150	ug/L	200		8270D	Total/NA
Phenanthrene	990	J	1000	88	ug/L	200		8270D	Total/NA
Pyrene	170	J	1000	68	ug/L	200		8270D	Total/NA

Client Sample ID: MW-3D
Lab Sample ID: 480-198661-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	16	F1	2.0	1.5	ug/L	2		8260C	Total/NA
Chloroform	0.74	J	2.0	0.68	ug/L	2		8260C	Total/NA
Trichloroethene	0.94	J	2.0	0.92	ug/L	2		8260C	Total/NA
Acenaphthene	0.86	J F1	5.0	0.41	ug/L	1		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: PZ-2

Date Collected: 06/03/22 10:06
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			06/11/22 05:14	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			06/11/22 05:14	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			06/11/22 05:14	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			06/11/22 05:14	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/11/22 05:14	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			06/11/22 05:14	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			06/11/22 05:14	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			06/11/22 05:14	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			06/11/22 05:14	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			06/11/22 05:14	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			06/11/22 05:14	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			06/11/22 05:14	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			06/11/22 05:14	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			06/11/22 05:14	1
2-Hexanone	ND		5.0	1.2	ug/L			06/11/22 05:14	1
2-Butanone (MEK)	ND		10	1.3	ug/L			06/11/22 05:14	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			06/11/22 05:14	1
Acetone	ND		10	3.0	ug/L			06/11/22 05:14	1
Benzene	ND		1.0	0.41	ug/L			06/11/22 05:14	1
Bromodichloromethane	ND		1.0	0.39	ug/L			06/11/22 05:14	1
Bromoform	ND		1.0	0.26	ug/L			06/11/22 05:14	1
Bromomethane	ND		1.0	0.69	ug/L			06/11/22 05:14	1
Carbon disulfide	ND		1.0	0.19	ug/L			06/11/22 05:14	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			06/11/22 05:14	1
Chlorobenzene	ND		1.0	0.75	ug/L			06/11/22 05:14	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/11/22 05:14	1
Chloroethane	ND		1.0	0.32	ug/L			06/11/22 05:14	1
Chloroform	**0.45**	**J**	1.0	0.34	ug/L			06/11/22 05:14	1
Chloromethane	ND		1.0	0.35	ug/L			06/11/22 05:14	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			06/11/22 05:14	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			06/11/22 05:14	1
Cyclohexane	ND		1.0	0.18	ug/L			06/11/22 05:14	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			06/11/22 05:14	1
Ethylbenzene	ND		1.0	0.74	ug/L			06/11/22 05:14	1
Isopropylbenzene	ND		1.0	0.79	ug/L			06/11/22 05:14	1
Methyl acetate	ND		2.5	1.3	ug/L			06/11/22 05:14	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			06/11/22 05:14	1
Methylcyclohexane	ND		1.0	0.16	ug/L			06/11/22 05:14	1
Methylene Chloride	ND		1.0	0.44	ug/L			06/11/22 05:14	1
Styrene	ND		1.0	0.73	ug/L			06/11/22 05:14	1
Tetrachloroethene	ND		1.0	0.36	ug/L			06/11/22 05:14	1
Toluene	ND		1.0	0.51	ug/L			06/11/22 05:14	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			06/11/22 05:14	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			06/11/22 05:14	1
Trichloroethene	ND		1.0	0.46	ug/L			06/11/22 05:14	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			06/11/22 05:14	1
Vinyl chloride	ND		1.0	0.90	ug/L			06/11/22 05:14	1
Xylenes, Total	ND		2.0	0.66	ug/L			06/11/22 05:14	1

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: PZ-2
Date Collected: 06/03/22 10:06
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-1
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*97*		*77 - 120*		*06/11/22 05:14*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*06/11/22 05:14*	*1*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*		*06/11/22 05:14*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 123*		*06/11/22 05:14*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biphenyl	ND		5.2	0.68	ug/L		06/07/22 08:17	06/08/22 18:30	1
bis (2-chloroisopropyl) ether	ND		5.2	0.54	ug/L		06/07/22 08:17	06/08/22 18:30	1
2,4,5-Trichlorophenol	ND		5.2	0.50	ug/L		06/07/22 08:17	06/08/22 18:30	1
2,4,6-Trichlorophenol	ND		5.2	0.64	ug/L		06/07/22 08:17	06/08/22 18:30	1
2,4-Dichlorophenol	ND		5.2	0.53	ug/L		06/07/22 08:17	06/08/22 18:30	1
2,4-Dimethylphenol	ND		5.2	0.52	ug/L		06/07/22 08:17	06/08/22 18:30	1
2,4-Dinitrophenol	ND		10	2.3	ug/L		06/07/22 08:17	06/08/22 18:30	1
2,4-Dinitrotoluene	ND		5.2	0.47	ug/L		06/07/22 08:17	06/08/22 18:30	1
2,6-Dinitrotoluene	ND		5.2	0.42	ug/L		06/07/22 08:17	06/08/22 18:30	1
2-Chloronaphthalene	ND		5.2	0.48	ug/L		06/07/22 08:17	06/08/22 18:30	1
2-Chlorophenol	ND		5.2	0.55	ug/L		06/07/22 08:17	06/08/22 18:30	1
2-Methylphenol	ND		5.2	0.42	ug/L		06/07/22 08:17	06/08/22 18:30	1
2-Methylnaphthalene	ND		5.2	0.63	ug/L		06/07/22 08:17	06/08/22 18:30	1
2-Nitroaniline	ND		10	0.44	ug/L		06/07/22 08:17	06/08/22 18:30	1
2-Nitrophenol	ND		5.2	0.50	ug/L		06/07/22 08:17	06/08/22 18:30	1
3,3'-Dichlorobenzidine	ND		5.2	0.42	ug/L		06/07/22 08:17	06/08/22 18:30	1
3-Nitroaniline	ND		10	0.50	ug/L		06/07/22 08:17	06/08/22 18:30	1
4,6-Dinitro-2-methylphenol	ND		10	2.3	ug/L		06/07/22 08:17	06/08/22 18:30	1
4-Bromophenyl phenyl ether	ND		5.2	0.47	ug/L		06/07/22 08:17	06/08/22 18:30	1
4-Chloro-3-methylphenol	ND		5.2	0.47	ug/L		06/07/22 08:17	06/08/22 18:30	1
4-Chloroaniline	ND		5.2	0.61	ug/L		06/07/22 08:17	06/08/22 18:30	1
4-Chlorophenyl phenyl ether	ND		5.2	0.36	ug/L		06/07/22 08:17	06/08/22 18:30	1
4-Methylphenol	ND		10	0.38	ug/L		06/07/22 08:17	06/08/22 18:30	1
4-Nitroaniline	ND		10	0.26	ug/L		06/07/22 08:17	06/08/22 18:30	1
4-Nitrophenol	ND		10	1.6	ug/L		06/07/22 08:17	06/08/22 18:30	1
Acenaphthene	ND		5.2	0.43	ug/L		06/07/22 08:17	06/08/22 18:30	1
Acenaphthylene	ND		5.2	0.40	ug/L		06/07/22 08:17	06/08/22 18:30	1
Acetophenone	ND		5.2	0.56	ug/L		06/07/22 08:17	06/08/22 18:30	1
Anthracene	ND		5.2	0.29	ug/L		06/07/22 08:17	06/08/22 18:30	1
Atrazine	ND		5.2	0.48	ug/L		06/07/22 08:17	06/08/22 18:30	1
Benzaldehyde	ND		5.2	0.28	ug/L		06/07/22 08:17	06/08/22 18:30	1
Benzo[a]anthracene	ND		5.2	0.38	ug/L		06/07/22 08:17	06/08/22 18:30	1
Benzo[a]pyrene	ND		5.2	0.49	ug/L		06/07/22 08:17	06/08/22 18:30	1
Benzo[b]fluoranthene	ND		5.2	0.35	ug/L		06/07/22 08:17	06/08/22 18:30	1
Benzo[g,h,i]perylene	ND		5.2	0.36	ug/L		06/07/22 08:17	06/08/22 18:30	1
Benzo[k]fluoranthene	ND		5.2	0.76	ug/L		06/07/22 08:17	06/08/22 18:30	1
Bis(2-chloroethoxy)methane	ND		5.2	0.36	ug/L		06/07/22 08:17	06/08/22 18:30	1
Bis(2-chloroethyl)ether	ND		5.2	0.42	ug/L		06/07/22 08:17	06/08/22 18:30	1
Bis(2-ethylhexyl) phthalate	ND		5.2	2.3	ug/L		06/07/22 08:17	06/08/22 18:30	1
Butyl benzyl phthalate	ND		5.2	1.0	ug/L		06/07/22 08:17	06/08/22 18:30	1
Caprolactam	ND		5.2	2.3	ug/L		06/07/22 08:17	06/08/22 18:30	1
Carbazole	ND		5.2	0.31	ug/L		06/07/22 08:17	06/08/22 18:30	1
Chrysene	ND		5.2	0.34	ug/L		06/07/22 08:17	06/08/22 18:30	1

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: PZ-2
Date Collected: 06/03/22 10:06
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-1
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		5.2	0.44	ug/L		06/07/22 08:17	06/08/22 18:30	1
Di-n-butyl phthalate	ND		5.2	0.32	ug/L		06/07/22 08:17	06/08/22 18:30	1
Di-n-octyl phthalate	ND		5.2	0.49	ug/L		06/07/22 08:17	06/08/22 18:30	1
Dibenzofuran	ND		10	0.53	ug/L		06/07/22 08:17	06/08/22 18:30	1
Diethyl phthalate	ND		5.2	0.23	ug/L		06/07/22 08:17	06/08/22 18:30	1
Dimethyl phthalate	ND		5.2	0.38	ug/L		06/07/22 08:17	06/08/22 18:30	1
Fluoranthene	ND		5.2	0.42	ug/L		06/07/22 08:17	06/08/22 18:30	1
Fluorene	ND		5.2	0.38	ug/L		06/07/22 08:17	06/08/22 18:30	1
Hexachlorobenzene	ND		5.2	0.53	ug/L		06/07/22 08:17	06/08/22 18:30	1
Hexachlorobutadiene	ND		5.2	0.71	ug/L		06/07/22 08:17	06/08/22 18:30	1
Hexachlorocyclopentadiene	ND		5.2	0.61	ug/L		06/07/22 08:17	06/08/22 18:30	1
Hexachloroethane	ND		5.2	0.61	ug/L		06/07/22 08:17	06/08/22 18:30	1
Indeno[1,2,3-cd]pyrene	ND		5.2	0.49	ug/L		06/07/22 08:17	06/08/22 18:30	1
Isophorone	ND		5.2	0.45	ug/L		06/07/22 08:17	06/08/22 18:30	1
N-Nitrosodi-n-propylamine	ND		5.2	0.56	ug/L		06/07/22 08:17	06/08/22 18:30	1
N-Nitrosodiphenylamine	ND		5.2	0.53	ug/L		06/07/22 08:17	06/08/22 18:30	1
Naphthalene	ND		5.2	0.79	ug/L		06/07/22 08:17	06/08/22 18:30	1
Nitrobenzene	ND		5.2	0.30	ug/L		06/07/22 08:17	06/08/22 18:30	1
Pentachlorophenol	ND		10	2.3	ug/L		06/07/22 08:17	06/08/22 18:30	1
Phenanthrene	ND		5.2	0.46	ug/L		06/07/22 08:17	06/08/22 18:30	1
Phenol	ND		5.2	0.41	ug/L		06/07/22 08:17	06/08/22 18:30	1
Pyrene	**0.35**	**J**	5.2	0.35	ug/L		06/07/22 08:17	06/08/22 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*75*		*46 - 120*	*06/07/22 08:17*	*06/08/22 18:30*	*1*
Phenol-d5 (Surr)	*47*		*22 - 120*	*06/07/22 08:17*	*06/08/22 18:30*	*1*
p-Terphenyl-d14 (Surr)	*73*		*60 - 148*	*06/07/22 08:17*	*06/08/22 18:30*	*1*
2,4,6-Tribromophenol (Surr)	*75*		*41 - 120*	*06/07/22 08:17*	*06/08/22 18:30*	*1*
2-Fluorobiphenyl	*87*		*48 - 120*	*06/07/22 08:17*	*06/08/22 18:30*	*1*
2-Fluorophenol (Surr)	*62*		*35 - 120*	*06/07/22 08:17*	*06/08/22 18:30*	*1*

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: PZ-3
Date Collected: 06/03/22 10:48
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			06/11/22 05:37	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			06/11/22 05:37	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			06/11/22 05:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			06/11/22 05:37	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/11/22 05:37	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			06/11/22 05:37	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			06/11/22 05:37	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			06/11/22 05:37	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			06/11/22 05:37	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			06/11/22 05:37	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			06/11/22 05:37	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			06/11/22 05:37	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			06/11/22 05:37	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			06/11/22 05:37	1
2-Hexanone	ND		5.0	1.2	ug/L			06/11/22 05:37	1
2-Butanone (MEK)	ND		10	1.3	ug/L			06/11/22 05:37	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			06/11/22 05:37	1
Acetone	**3.6**	**J**	10	3.0	ug/L			06/11/22 05:37	1
Benzene	ND		1.0	0.41	ug/L			06/11/22 05:37	1
Bromodichloromethane	ND		1.0	0.39	ug/L			06/11/22 05:37	1
Bromoform	ND		1.0	0.26	ug/L			06/11/22 05:37	1
Bromomethane	ND		1.0	0.69	ug/L			06/11/22 05:37	1
Carbon disulfide	ND		1.0	0.19	ug/L			06/11/22 05:37	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			06/11/22 05:37	1
Chlorobenzene	ND		1.0	0.75	ug/L			06/11/22 05:37	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/11/22 05:37	1
Chloroethane	ND		1.0	0.32	ug/L			06/11/22 05:37	1
Chloroform	ND		1.0	0.34	ug/L			06/11/22 05:37	1
Chloromethane	ND		1.0	0.35	ug/L			06/11/22 05:37	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			06/11/22 05:37	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			06/11/22 05:37	1
Cyclohexane	ND		1.0	0.18	ug/L			06/11/22 05:37	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			06/11/22 05:37	1
Ethylbenzene	ND		1.0	0.74	ug/L			06/11/22 05:37	1
Isopropylbenzene	ND		1.0	0.79	ug/L			06/11/22 05:37	1
Methyl acetate	ND		2.5	1.3	ug/L			06/11/22 05:37	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			06/11/22 05:37	1
Methylcyclohexane	ND		1.0	0.16	ug/L			06/11/22 05:37	1
Methylene Chloride	ND		1.0	0.44	ug/L			06/11/22 05:37	1
Styrene	ND		1.0	0.73	ug/L			06/11/22 05:37	1
Tetrachloroethene	ND		1.0	0.36	ug/L			06/11/22 05:37	1
Toluene	ND		1.0	0.51	ug/L			06/11/22 05:37	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			06/11/22 05:37	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			06/11/22 05:37	1
Trichloroethene	ND		1.0	0.46	ug/L			06/11/22 05:37	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			06/11/22 05:37	1
Vinyl chloride	ND		1.0	0.90	ug/L			06/11/22 05:37	1
Xylenes, Total	ND		2.0	0.66	ug/L			06/11/22 05:37	1

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: PZ-3

Date Collected: 06/03/22 10:48
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-2

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*99*		*77 - 120*		*06/11/22 05:37*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*06/11/22 05:37*	*1*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*06/11/22 05:37*	*1*
Dibromofluoromethane (Surr)	*97*		*75 - 123*		*06/11/22 05:37*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biphenyl	ND		5.0	0.65	ug/L		06/07/22 08:17	06/08/22 18:58	1
bis (2-chloroisopropyl) ether	ND		5.0	0.52	ug/L		06/07/22 08:17	06/08/22 18:58	1
2,4,5-Trichlorophenol	ND		5.0	0.48	ug/L		06/07/22 08:17	06/08/22 18:58	1
2,4,6-Trichlorophenol	ND		5.0	0.61	ug/L		06/07/22 08:17	06/08/22 18:58	1
2,4-Dichlorophenol	ND		5.0	0.51	ug/L		06/07/22 08:17	06/08/22 18:58	1
2,4-Dimethylphenol	ND		5.0	0.50	ug/L		06/07/22 08:17	06/08/22 18:58	1
2,4-Dinitrophenol	ND		10	2.2	ug/L		06/07/22 08:17	06/08/22 18:58	1
2,4-Dinitrotoluene	ND		5.0	0.45	ug/L		06/07/22 08:17	06/08/22 18:58	1
2,6-Dinitrotoluene	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 18:58	1
2-Chloronaphthalene	ND		5.0	0.46	ug/L		06/07/22 08:17	06/08/22 18:58	1
2-Chlorophenol	ND		5.0	0.53	ug/L		06/07/22 08:17	06/08/22 18:58	1
2-Methylphenol	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 18:58	1
2-Methylnaphthalene	**3.5**	**J**	5.0	0.60	ug/L		06/07/22 08:17	06/08/22 18:58	1
2-Nitroaniline	ND		10	0.42	ug/L		06/07/22 08:17	06/08/22 18:58	1
2-Nitrophenol	ND		5.0	0.48	ug/L		06/07/22 08:17	06/08/22 18:58	1
3,3'-Dichlorobenzidine	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 18:58	1
3-Nitroaniline	ND		10	0.48	ug/L		06/07/22 08:17	06/08/22 18:58	1
4,6-Dinitro-2-methylphenol	ND		10	2.2	ug/L		06/07/22 08:17	06/08/22 18:58	1
4-Bromophenyl phenyl ether	ND		5.0	0.45	ug/L		06/07/22 08:17	06/08/22 18:58	1
4-Chloro-3-methylphenol	ND		5.0	0.45	ug/L		06/07/22 08:17	06/08/22 18:58	1
4-Chloroaniline	ND		5.0	0.59	ug/L		06/07/22 08:17	06/08/22 18:58	1
4-Chlorophenyl phenyl ether	ND		5.0	0.35	ug/L		06/07/22 08:17	06/08/22 18:58	1
4-Methylphenol	**0.70**	**J**	10	0.36	ug/L		06/07/22 08:17	06/08/22 18:58	1
4-Nitroaniline	ND		10	0.25	ug/L		06/07/22 08:17	06/08/22 18:58	1
4-Nitrophenol	ND		10	1.5	ug/L		06/07/22 08:17	06/08/22 18:58	1
Acenaphthene	**5.5**		5.0	0.41	ug/L		06/07/22 08:17	06/08/22 18:58	1
Acenaphthylene	ND		5.0	0.38	ug/L		06/07/22 08:17	06/08/22 18:58	1
Acetophenone	ND		5.0	0.54	ug/L		06/07/22 08:17	06/08/22 18:58	1
Anthracene	ND		5.0	0.28	ug/L		06/07/22 08:17	06/08/22 18:58	1
Atrazine	ND		5.0	0.46	ug/L		06/07/22 08:17	06/08/22 18:58	1
Benzaldehyde	ND		5.0	0.27	ug/L		06/07/22 08:17	06/08/22 18:58	1
Benzo[a]anthracene	ND		5.0	0.36	ug/L		06/07/22 08:17	06/08/22 18:58	1
Benzo[a]pyrene	ND		5.0	0.47	ug/L		06/07/22 08:17	06/08/22 18:58	1
Benzo[b]fluoranthene	ND		5.0	0.34	ug/L		06/07/22 08:17	06/08/22 18:58	1
Benzo[g,h,i]perylene	ND		5.0	0.35	ug/L		06/07/22 08:17	06/08/22 18:58	1
Benzo[k]fluoranthene	ND		5.0	0.73	ug/L		06/07/22 08:17	06/08/22 18:58	1
Bis(2-chloroethoxy)methane	ND		5.0	0.35	ug/L		06/07/22 08:17	06/08/22 18:58	1
Bis(2-chloroethyl)ether	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 18:58	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		06/07/22 08:17	06/08/22 18:58	1
Butyl benzyl phthalate	ND		5.0	1.0	ug/L		06/07/22 08:17	06/08/22 18:58	1
Caprolactam	ND		5.0	2.2	ug/L		06/07/22 08:17	06/08/22 18:58	1
Carbazole	**0.66**	**J**	5.0	0.30	ug/L		06/07/22 08:17	06/08/22 18:58	1
Chrysene	ND		5.0	0.33	ug/L		06/07/22 08:17	06/08/22 18:58	1

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: PZ-3
Date Collected: 06/03/22 10:48
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-2
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		5.0	0.42	ug/L		06/07/22 08:17	06/08/22 18:58	1
Di-n-butyl phthalate	ND		5.0	0.31	ug/L		06/07/22 08:17	06/08/22 18:58	1
Di-n-octyl phthalate	ND		5.0	0.47	ug/L		06/07/22 08:17	06/08/22 18:58	1
Dibenzofuran	ND		10	0.51	ug/L		06/07/22 08:17	06/08/22 18:58	1
Diethyl phthalate	ND		5.0	0.22	ug/L		06/07/22 08:17	06/08/22 18:58	1
Dimethyl phthalate	ND		5.0	0.36	ug/L		06/07/22 08:17	06/08/22 18:58	1
Fluoranthene	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 18:58	1
Fluorene	**1.0**	**J**	5.0	0.36	ug/L		06/07/22 08:17	06/08/22 18:58	1
Hexachlorobenzene	ND		5.0	0.51	ug/L		06/07/22 08:17	06/08/22 18:58	1
Hexachlorobutadiene	ND		5.0	0.68	ug/L		06/07/22 08:17	06/08/22 18:58	1
Hexachlorocyclopentadiene	ND		5.0	0.59	ug/L		06/07/22 08:17	06/08/22 18:58	1
Hexachloroethane	ND		5.0	0.59	ug/L		06/07/22 08:17	06/08/22 18:58	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.47	ug/L		06/07/22 08:17	06/08/22 18:58	1
Isophorone	ND		5.0	0.43	ug/L		06/07/22 08:17	06/08/22 18:58	1
N-Nitrosodi-n-propylamine	ND		5.0	0.54	ug/L		06/07/22 08:17	06/08/22 18:58	1
N-Nitrosodiphenylamine	ND		5.0	0.51	ug/L		06/07/22 08:17	06/08/22 18:58	1
Naphthalene	**10**		5.0	0.76	ug/L		06/07/22 08:17	06/08/22 18:58	1
Nitrobenzene	ND		5.0	0.29	ug/L		06/07/22 08:17	06/08/22 18:58	1
Pentachlorophenol	ND		10	2.2	ug/L		06/07/22 08:17	06/08/22 18:58	1
Phenanthrene	**0.60**	**J**	5.0	0.44	ug/L		06/07/22 08:17	06/08/22 18:58	1
Phenol	**28**		5.0	0.39	ug/L		06/07/22 08:17	06/08/22 18:58	1
Pyrene	ND		5.0	0.34	ug/L		06/07/22 08:17	06/08/22 18:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*75*		*46 - 120*	*06/07/22 08:17*	*06/08/22 18:58*	*1*
Phenol-d5 (Surr)	*46*		*22 - 120*	*06/07/22 08:17*	*06/08/22 18:58*	*1*
p-Terphenyl-d14 (Surr)	*69*		*60 - 148*	*06/07/22 08:17*	*06/08/22 18:58*	*1*
2,4,6-Tribromophenol (Surr)	*82*		*41 - 120*	*06/07/22 08:17*	*06/08/22 18:58*	*1*
2-Fluorobiphenyl	*86*		*48 - 120*	*06/07/22 08:17*	*06/08/22 18:58*	*1*
2-Fluorophenol (Surr)	*61*		*35 - 120*	*06/07/22 08:17*	*06/08/22 18:58*	*1*

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: PZ-4

Date Collected: 06/03/22 11:15
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-3

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			06/11/22 06:00	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			06/11/22 06:00	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			06/11/22 06:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			06/11/22 06:00	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/11/22 06:00	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			06/11/22 06:00	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			06/11/22 06:00	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			06/11/22 06:00	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			06/11/22 06:00	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			06/11/22 06:00	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			06/11/22 06:00	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			06/11/22 06:00	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			06/11/22 06:00	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			06/11/22 06:00	1
2-Hexanone	ND		5.0	1.2	ug/L			06/11/22 06:00	1
2-Butanone (MEK)	ND		10	1.3	ug/L			06/11/22 06:00	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			06/11/22 06:00	1
Acetone	ND		10	3.0	ug/L			06/11/22 06:00	1
Benzene	ND		1.0	0.41	ug/L			06/11/22 06:00	1
Bromodichloromethane	ND		1.0	0.39	ug/L			06/11/22 06:00	1
Bromoform	ND		1.0	0.26	ug/L			06/11/22 06:00	1
Bromomethane	ND		1.0	0.69	ug/L			06/11/22 06:00	1
Carbon disulfide	ND		1.0	0.19	ug/L			06/11/22 06:00	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			06/11/22 06:00	1
Chlorobenzene	ND		1.0	0.75	ug/L			06/11/22 06:00	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/11/22 06:00	1
Chloroethane	ND		1.0	0.32	ug/L			06/11/22 06:00	1
Chloroform	ND		1.0	0.34	ug/L			06/11/22 06:00	1
Chloromethane	ND		1.0	0.35	ug/L			06/11/22 06:00	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			06/11/22 06:00	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			06/11/22 06:00	1
Cyclohexane	ND		1.0	0.18	ug/L			06/11/22 06:00	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			06/11/22 06:00	1
Ethylbenzene	ND		1.0	0.74	ug/L			06/11/22 06:00	1
Isopropylbenzene	ND		1.0	0.79	ug/L			06/11/22 06:00	1
Methyl acetate	ND		2.5	1.3	ug/L			06/11/22 06:00	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			06/11/22 06:00	1
Methylcyclohexane	ND		1.0	0.16	ug/L			06/11/22 06:00	1
Methylene Chloride	ND		1.0	0.44	ug/L			06/11/22 06:00	1
Styrene	ND		1.0	0.73	ug/L			06/11/22 06:00	1
Tetrachloroethene	ND		1.0	0.36	ug/L			06/11/22 06:00	1
Toluene	ND		1.0	0.51	ug/L			06/11/22 06:00	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			06/11/22 06:00	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			06/11/22 06:00	1
Trichloroethene	ND		1.0	0.46	ug/L			06/11/22 06:00	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			06/11/22 06:00	1
Vinyl chloride	ND		1.0	0.90	ug/L			06/11/22 06:00	1
Xylenes, Total	ND		2.0	0.66	ug/L			06/11/22 06:00	1

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: PZ-4

Date Collected: 06/03/22 11:15
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-3

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*94*		*77 - 120*		*06/11/22 06:00*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*06/11/22 06:00*	*1*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*06/11/22 06:00*	*1*
Dibromofluoromethane (Surr)	*92*		*75 - 123*		*06/11/22 06:00*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biphenyl	ND		5.0	0.65	ug/L		06/07/22 08:17	06/08/22 19:26	1
bis (2-chloroisopropyl) ether	ND		5.0	0.52	ug/L		06/07/22 08:17	06/08/22 19:26	1
2,4,5-Trichlorophenol	ND		5.0	0.48	ug/L		06/07/22 08:17	06/08/22 19:26	1
2,4,6-Trichlorophenol	ND		5.0	0.61	ug/L		06/07/22 08:17	06/08/22 19:26	1
2,4-Dichlorophenol	ND		5.0	0.51	ug/L		06/07/22 08:17	06/08/22 19:26	1
2,4-Dimethylphenol	ND		5.0	0.50	ug/L		06/07/22 08:17	06/08/22 19:26	1
2,4-Dinitrophenol	ND		10	2.2	ug/L		06/07/22 08:17	06/08/22 19:26	1
2,4-Dinitrotoluene	ND		5.0	0.45	ug/L		06/07/22 08:17	06/08/22 19:26	1
2,6-Dinitrotoluene	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 19:26	1
2-Chloronaphthalene	ND		5.0	0.46	ug/L		06/07/22 08:17	06/08/22 19:26	1
2-Chlorophenol	ND		5.0	0.53	ug/L		06/07/22 08:17	06/08/22 19:26	1
2-Methylphenol	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 19:26	1
2-Methylnaphthalene	ND		5.0	0.60	ug/L		06/07/22 08:17	06/08/22 19:26	1
2-Nitroaniline	ND		10	0.42	ug/L		06/07/22 08:17	06/08/22 19:26	1
2-Nitrophenol	ND		5.0	0.48	ug/L		06/07/22 08:17	06/08/22 19:26	1
3,3'-Dichlorobenzidine	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 19:26	1
3-Nitroaniline	ND		10	0.48	ug/L		06/07/22 08:17	06/08/22 19:26	1
4,6-Dinitro-2-methylphenol	ND		10	2.2	ug/L		06/07/22 08:17	06/08/22 19:26	1
4-Bromophenyl phenyl ether	ND		5.0	0.45	ug/L		06/07/22 08:17	06/08/22 19:26	1
4-Chloro-3-methylphenol	ND		5.0	0.45	ug/L		06/07/22 08:17	06/08/22 19:26	1
4-Chloroaniline	ND		5.0	0.59	ug/L		06/07/22 08:17	06/08/22 19:26	1
4-Chlorophenyl phenyl ether	ND		5.0	0.35	ug/L		06/07/22 08:17	06/08/22 19:26	1
4-Methylphenol	ND		10	0.36	ug/L		06/07/22 08:17	06/08/22 19:26	1
4-Nitroaniline	ND		10	0.25	ug/L		06/07/22 08:17	06/08/22 19:26	1
4-Nitrophenol	ND		10	1.5	ug/L		06/07/22 08:17	06/08/22 19:26	1
Acenaphthene	ND		5.0	0.41	ug/L		06/07/22 08:17	06/08/22 19:26	1
Acenaphthylene	ND		5.0	0.38	ug/L		06/07/22 08:17	06/08/22 19:26	1
Acetophenone	ND		5.0	0.54	ug/L		06/07/22 08:17	06/08/22 19:26	1
Anthracene	ND		5.0	0.28	ug/L		06/07/22 08:17	06/08/22 19:26	1
Atrazine	ND		5.0	0.46	ug/L		06/07/22 08:17	06/08/22 19:26	1
Benzaldehyde	ND		5.0	0.27	ug/L		06/07/22 08:17	06/08/22 19:26	1
Benzo[a]anthracene	ND		5.0	0.36	ug/L		06/07/22 08:17	06/08/22 19:26	1
Benzo[a]pyrene	ND		5.0	0.47	ug/L		06/07/22 08:17	06/08/22 19:26	1
Benzo[b]fluoranthene	ND		5.0	0.34	ug/L		06/07/22 08:17	06/08/22 19:26	1
Benzo[g,h,i]perylene	ND		5.0	0.35	ug/L		06/07/22 08:17	06/08/22 19:26	1
Benzo[k]fluoranthene	ND		5.0	0.73	ug/L		06/07/22 08:17	06/08/22 19:26	1
Bis(2-chloroethoxy)methane	ND		5.0	0.35	ug/L		06/07/22 08:17	06/08/22 19:26	1
Bis(2-chloroethyl)ether	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 19:26	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		06/07/22 08:17	06/08/22 19:26	1
Butyl benzyl phthalate	ND		5.0	1.0	ug/L		06/07/22 08:17	06/08/22 19:26	1
Caprolactam	ND		5.0	2.2	ug/L		06/07/22 08:17	06/08/22 19:26	1
Carbazole	ND		5.0	0.30	ug/L		06/07/22 08:17	06/08/22 19:26	1
Chrysene	ND		5.0	0.33	ug/L		06/07/22 08:17	06/08/22 19:26	1

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: PZ-4
Date Collected: 06/03/22 11:15
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-3
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		5.0	0.42	ug/L		06/07/22 08:17	06/08/22 19:26	1
Di-n-butyl phthalate	ND		5.0	0.31	ug/L		06/07/22 08:17	06/08/22 19:26	1
Di-n-octyl phthalate	ND		5.0	0.47	ug/L		06/07/22 08:17	06/08/22 19:26	1
Dibenzofuran	ND		10	0.51	ug/L		06/07/22 08:17	06/08/22 19:26	1
Diethyl phthalate	ND		5.0	0.22	ug/L		06/07/22 08:17	06/08/22 19:26	1
Dimethyl phthalate	ND		5.0	0.36	ug/L		06/07/22 08:17	06/08/22 19:26	1
Fluoranthene	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 19:26	1
Fluorene	ND		5.0	0.36	ug/L		06/07/22 08:17	06/08/22 19:26	1
Hexachlorobenzene	ND		5.0	0.51	ug/L		06/07/22 08:17	06/08/22 19:26	1
Hexachlorobutadiene	ND		5.0	0.68	ug/L		06/07/22 08:17	06/08/22 19:26	1
Hexachlorocyclopentadiene	ND		5.0	0.59	ug/L		06/07/22 08:17	06/08/22 19:26	1
Hexachloroethane	ND		5.0	0.59	ug/L		06/07/22 08:17	06/08/22 19:26	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.47	ug/L		06/07/22 08:17	06/08/22 19:26	1
Isophorone	ND		5.0	0.43	ug/L		06/07/22 08:17	06/08/22 19:26	1
N-Nitrosodi-n-propylamine	ND		5.0	0.54	ug/L		06/07/22 08:17	06/08/22 19:26	1
N-Nitrosodiphenylamine	ND		5.0	0.51	ug/L		06/07/22 08:17	06/08/22 19:26	1
Naphthalene	ND		5.0	0.76	ug/L		06/07/22 08:17	06/08/22 19:26	1
Nitrobenzene	ND		5.0	0.29	ug/L		06/07/22 08:17	06/08/22 19:26	1
Pentachlorophenol	ND		10	2.2	ug/L		06/07/22 08:17	06/08/22 19:26	1
Phenanthrene	ND		5.0	0.44	ug/L		06/07/22 08:17	06/08/22 19:26	1
Phenol	ND		5.0	0.39	ug/L		06/07/22 08:17	06/08/22 19:26	1
Pyrene	ND		5.0	0.34	ug/L		06/07/22 08:17	06/08/22 19:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*80*		*46 - 120*	*06/07/22 08:17*	*06/08/22 19:26*	*1*
Phenol-d5 (Surr)	*49*		*22 - 120*	*06/07/22 08:17*	*06/08/22 19:26*	*1*
p-Terphenyl-d14 (Surr)	*83*		*60 - 148*	*06/07/22 08:17*	*06/08/22 19:26*	*1*
2,4,6-Tribromophenol (Surr)	*81*		*41 - 120*	*06/07/22 08:17*	*06/08/22 19:26*	*1*
2-Fluorobiphenyl	*94*		*48 - 120*	*06/07/22 08:17*	*06/08/22 19:26*	*1*
2-Fluorophenol (Surr)	*68*		*35 - 120*	*06/07/22 08:17*	*06/08/22 19:26*	*1*

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: FILTER VAULT EFF
Date Collected: 06/03/22 11:35
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-4
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			06/11/22 06:23	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			06/11/22 06:23	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			06/11/22 06:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			06/11/22 06:23	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/11/22 06:23	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			06/11/22 06:23	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			06/11/22 06:23	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			06/11/22 06:23	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			06/11/22 06:23	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			06/11/22 06:23	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			06/11/22 06:23	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			06/11/22 06:23	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			06/11/22 06:23	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			06/11/22 06:23	1
2-Hexanone	ND		5.0	1.2	ug/L			06/11/22 06:23	1
2-Butanone (MEK)	ND		10	1.3	ug/L			06/11/22 06:23	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			06/11/22 06:23	1
Acetone	ND		10	3.0	ug/L			06/11/22 06:23	1
Benzene	ND		1.0	0.41	ug/L			06/11/22 06:23	1
Bromodichloromethane	**2.8**		1.0	0.39	ug/L			06/11/22 06:23	1
Bromoform	ND		1.0	0.26	ug/L			06/11/22 06:23	1
Bromomethane	ND		1.0	0.69	ug/L			06/11/22 06:23	1
Carbon disulfide	ND		1.0	0.19	ug/L			06/11/22 06:23	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			06/11/22 06:23	1
Chlorobenzene	ND		1.0	0.75	ug/L			06/11/22 06:23	1
Dibromochloromethane	**0.37**	**J**	1.0	0.32	ug/L			06/11/22 06:23	1
Chloroethane	ND		1.0	0.32	ug/L			06/11/22 06:23	1
Chloroform	**11**		1.0	0.34	ug/L			06/11/22 06:23	1
Chloromethane	ND		1.0	0.35	ug/L			06/11/22 06:23	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			06/11/22 06:23	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			06/11/22 06:23	1
Cyclohexane	ND		1.0	0.18	ug/L			06/11/22 06:23	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			06/11/22 06:23	1
Ethylbenzene	ND		1.0	0.74	ug/L			06/11/22 06:23	1
Isopropylbenzene	ND		1.0	0.79	ug/L			06/11/22 06:23	1
Methyl acetate	ND		2.5	1.3	ug/L			06/11/22 06:23	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			06/11/22 06:23	1
Methylcyclohexane	ND		1.0	0.16	ug/L			06/11/22 06:23	1
Methylene Chloride	ND		1.0	0.44	ug/L			06/11/22 06:23	1
Styrene	ND		1.0	0.73	ug/L			06/11/22 06:23	1
Tetrachloroethene	ND		1.0	0.36	ug/L			06/11/22 06:23	1
Toluene	ND		1.0	0.51	ug/L			06/11/22 06:23	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			06/11/22 06:23	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			06/11/22 06:23	1
Trichloroethene	ND		1.0	0.46	ug/L			06/11/22 06:23	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			06/11/22 06:23	1
Vinyl chloride	ND		1.0	0.90	ug/L			06/11/22 06:23	1
Xylenes, Total	ND		2.0	0.66	ug/L			06/11/22 06:23	1

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: FILTER VAULT EFF

Date Collected: 06/03/22 11:35
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*77 - 120*		*06/11/22 06:23*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*06/11/22 06:23*	*1*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*06/11/22 06:23*	*1*
Dibromofluoromethane (Surr)	*102*		*75 - 123*		*06/11/22 06:23*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biphenyl	ND		5.0	0.65	ug/L		06/07/22 08:19	06/08/22 19:54	1
bis (2-chloroisopropyl) ether	ND		5.0	0.52	ug/L		06/07/22 08:19	06/08/22 19:54	1
2,4,5-Trichlorophenol	ND		5.0	0.48	ug/L		06/07/22 08:19	06/08/22 19:54	1
2,4,6-Trichlorophenol	ND		5.0	0.61	ug/L		06/07/22 08:19	06/08/22 19:54	1
2,4-Dichlorophenol	ND		5.0	0.51	ug/L		06/07/22 08:19	06/08/22 19:54	1
2,4-Dimethylphenol	ND		5.0	0.50	ug/L		06/07/22 08:19	06/08/22 19:54	1
2,4-Dinitrophenol	ND		10	2.2	ug/L		06/07/22 08:19	06/08/22 19:54	1
2,4-Dinitrotoluene	ND		5.0	0.45	ug/L		06/07/22 08:19	06/08/22 19:54	1
2,6-Dinitrotoluene	ND		5.0	0.40	ug/L		06/07/22 08:19	06/08/22 19:54	1
2-Chloronaphthalene	ND		5.0	0.46	ug/L		06/07/22 08:19	06/08/22 19:54	1
2-Chlorophenol	ND		5.0	0.53	ug/L		06/07/22 08:19	06/08/22 19:54	1
2-Methylphenol	ND		5.0	0.40	ug/L		06/07/22 08:19	06/08/22 19:54	1
2-Methylnaphthalene	ND		5.0	0.60	ug/L		06/07/22 08:19	06/08/22 19:54	1
2-Nitroaniline	ND		10	0.42	ug/L		06/07/22 08:19	06/08/22 19:54	1
2-Nitrophenol	ND		5.0	0.48	ug/L		06/07/22 08:19	06/08/22 19:54	1
3,3'-Dichlorobenzidine	ND		5.0	0.40	ug/L		06/07/22 08:19	06/08/22 19:54	1
3-Nitroaniline	ND		10	0.48	ug/L		06/07/22 08:19	06/08/22 19:54	1
4,6-Dinitro-2-methylphenol	ND		10	2.2	ug/L		06/07/22 08:19	06/08/22 19:54	1
4-Bromophenyl phenyl ether	ND		5.0	0.45	ug/L		06/07/22 08:19	06/08/22 19:54	1
4-Chloro-3-methylphenol	ND		5.0	0.45	ug/L		06/07/22 08:19	06/08/22 19:54	1
4-Chloroaniline	ND		5.0	0.59	ug/L		06/07/22 08:19	06/08/22 19:54	1
4-Chlorophenyl phenyl ether	ND		5.0	0.35	ug/L		06/07/22 08:19	06/08/22 19:54	1
4-Methylphenol	ND		10	0.36	ug/L		06/07/22 08:19	06/08/22 19:54	1
4-Nitroaniline	ND		10	0.25	ug/L		06/07/22 08:19	06/08/22 19:54	1
4-Nitrophenol	ND		10	1.5	ug/L		06/07/22 08:19	06/08/22 19:54	1
Acenaphthene	ND		5.0	0.41	ug/L		06/07/22 08:19	06/08/22 19:54	1
Acenaphthylene	ND		5.0	0.38	ug/L		06/07/22 08:19	06/08/22 19:54	1
Acetophenone	ND		5.0	0.54	ug/L		06/07/22 08:19	06/08/22 19:54	1
Anthracene	ND		5.0	0.28	ug/L		06/07/22 08:19	06/08/22 19:54	1
Atrazine	ND		5.0	0.46	ug/L		06/07/22 08:19	06/08/22 19:54	1
Benzaldehyde	ND		5.0	0.27	ug/L		06/07/22 08:19	06/08/22 19:54	1
Benzo[a]anthracene	ND		5.0	0.36	ug/L		06/07/22 08:19	06/08/22 19:54	1
Benzo[a]pyrene	ND		5.0	0.47	ug/L		06/07/22 08:19	06/08/22 19:54	1
Benzo[b]fluoranthene	ND		5.0	0.34	ug/L		06/07/22 08:19	06/08/22 19:54	1
Benzo[g,h,i]perylene	ND		5.0	0.35	ug/L		06/07/22 08:19	06/08/22 19:54	1
Benzo[k]fluoranthene	ND		5.0	0.73	ug/L		06/07/22 08:19	06/08/22 19:54	1
Bis(2-chloroethoxy)methane	ND		5.0	0.35	ug/L		06/07/22 08:19	06/08/22 19:54	1
Bis(2-chloroethyl)ether	ND		5.0	0.40	ug/L		06/07/22 08:19	06/08/22 19:54	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		06/07/22 08:19	06/08/22 19:54	1
Butyl benzyl phthalate	ND		5.0	1.0	ug/L		06/07/22 08:19	06/08/22 19:54	1
Caprolactam	ND		5.0	2.2	ug/L		06/07/22 08:19	06/08/22 19:54	1
Carbazole	ND		5.0	0.30	ug/L		06/07/22 08:19	06/08/22 19:54	1
Chrysene	ND		5.0	0.33	ug/L		06/07/22 08:19	06/08/22 19:54	1

Client: Golder Associates Inc.
Job ID: 480-198661-1
Project/Site: Vandemark Chemical site

Client Sample ID: FILTER VAULT EFF
Lab Sample ID: 480-198661-4
Date Collected: 06/03/22 11:35
Matrix: Water
Date Received: 06/03/22 15:45

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		5.0	0.42	ug/L		06/07/22 08:19	06/08/22 19:54	1
Di-n-butyl phthalate	ND		5.0	0.31	ug/L		06/07/22 08:19	06/08/22 19:54	1
Di-n-octyl phthalate	ND		5.0	0.47	ug/L		06/07/22 08:19	06/08/22 19:54	1
Dibenzofuran	ND		10	0.51	ug/L		06/07/22 08:19	06/08/22 19:54	1
Diethyl phthalate	ND		5.0	0.22	ug/L		06/07/22 08:19	06/08/22 19:54	1
Dimethyl phthalate	ND		5.0	0.36	ug/L		06/07/22 08:19	06/08/22 19:54	1
Fluoranthene	ND		5.0	0.40	ug/L		06/07/22 08:19	06/08/22 19:54	1
Fluorene	ND		5.0	0.36	ug/L		06/07/22 08:19	06/08/22 19:54	1
Hexachlorobenzene	ND		5.0	0.51	ug/L		06/07/22 08:19	06/08/22 19:54	1
Hexachlorobutadiene	ND		5.0	0.68	ug/L		06/07/22 08:19	06/08/22 19:54	1
Hexachlorocyclopentadiene	ND		5.0	0.59	ug/L		06/07/22 08:19	06/08/22 19:54	1
Hexachloroethane	ND		5.0	0.59	ug/L		06/07/22 08:19	06/08/22 19:54	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.47	ug/L		06/07/22 08:19	06/08/22 19:54	1
Isophorone	ND		5.0	0.43	ug/L		06/07/22 08:19	06/08/22 19:54	1
N-Nitrosodi-n-propylamine	ND		5.0	0.54	ug/L		06/07/22 08:19	06/08/22 19:54	1
N-Nitrosodiphenylamine	ND		5.0	0.51	ug/L		06/07/22 08:19	06/08/22 19:54	1
Naphthalene	ND		5.0	0.76	ug/L		06/07/22 08:19	06/08/22 19:54	1
Nitrobenzene	ND		5.0	0.29	ug/L		06/07/22 08:19	06/08/22 19:54	1
Pentachlorophenol	ND		10	2.2	ug/L		06/07/22 08:19	06/08/22 19:54	1
Phenanthrene	ND		5.0	0.44	ug/L		06/07/22 08:19	06/08/22 19:54	1
Phenol	ND		5.0	0.39	ug/L		06/07/22 08:19	06/08/22 19:54	1
Pyrene	ND		5.0	0.34	ug/L		06/07/22 08:19	06/08/22 19:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*84*		*46 - 120*	*06/07/22 08:19*	*06/08/22 19:54*	*1*
Phenol-d5 (Surr)	*49*		*22 - 120*	*06/07/22 08:19*	*06/08/22 19:54*	*1*
p-Terphenyl-d14 (Surr)	*89*		*60 - 148*	*06/07/22 08:19*	*06/08/22 19:54*	*1*
2,4,6-Tribromophenol (Surr)	*71*		*41 - 120*	*06/07/22 08:19*	*06/08/22 19:54*	*1*
2-Fluorobiphenyl	*96*		*48 - 120*	*06/07/22 08:19*	*06/08/22 19:54*	*1*
2-Fluorophenol (Surr)	*65*		*35 - 120*	*06/07/22 08:19*	*06/08/22 19:54*	*1*

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: MW-7D
Date Collected: 06/03/22 14:20
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-5
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	1.6	ug/L			06/11/22 06:47	2
1,1,2,2-Tetrachloroethane	ND		2.0	0.42	ug/L			06/11/22 06:47	2
1,1,2-Trichloroethane	ND		2.0	0.46	ug/L			06/11/22 06:47	2
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.62	ug/L			06/11/22 06:47	2
1,1-Dichloroethane	**1.5**	**J**	2.0	0.76	ug/L			06/11/22 06:47	2
1,1-Dichloroethene	ND		2.0	0.58	ug/L			06/11/22 06:47	2
1,2,4-Trichlorobenzene	ND		2.0	0.82	ug/L			06/11/22 06:47	2
1,2-Dibromo-3-Chloropropane	ND		2.0	0.78	ug/L			06/11/22 06:47	2
1,2-Dibromoethane	ND		2.0	1.5	ug/L			06/11/22 06:47	2
1,2-Dichlorobenzene	ND		2.0	1.6	ug/L			06/11/22 06:47	2
1,2-Dichloroethane	ND		2.0	0.42	ug/L			06/11/22 06:47	2
1,2-Dichloropropane	ND		2.0	1.4	ug/L			06/11/22 06:47	2
1,3-Dichlorobenzene	ND		2.0	1.6	ug/L			06/11/22 06:47	2
1,4-Dichlorobenzene	ND		2.0	1.7	ug/L			06/11/22 06:47	2
2-Hexanone	ND		10	2.5	ug/L			06/11/22 06:47	2
2-Butanone (MEK)	ND		20	2.6	ug/L			06/11/22 06:47	2
4-Methyl-2-pentanone (MIBK)	ND		10	4.2	ug/L			06/11/22 06:47	2
Acetone	ND		20	6.0	ug/L			06/11/22 06:47	2
Benzene	ND		2.0	0.82	ug/L			06/11/22 06:47	2
Bromodichloromethane	ND		2.0	0.78	ug/L			06/11/22 06:47	2
Bromoform	ND		2.0	0.52	ug/L			06/11/22 06:47	2
Bromomethane	ND		2.0	1.4	ug/L			06/11/22 06:47	2
Carbon disulfide	ND		2.0	0.38	ug/L			06/11/22 06:47	2
Carbon tetrachloride	ND		2.0	0.54	ug/L			06/11/22 06:47	2
Chlorobenzene	ND		2.0	1.5	ug/L			06/11/22 06:47	2
Dibromochloromethane	ND		2.0	0.64	ug/L			06/11/22 06:47	2
Chloroethane	ND		2.0	0.64	ug/L			06/11/22 06:47	2
Chloroform	ND		2.0	0.68	ug/L			06/11/22 06:47	2
Chloromethane	ND		2.0	0.70	ug/L			06/11/22 06:47	2
cis-1,2-Dichloroethene	ND		2.0	1.6	ug/L			06/11/22 06:47	2
cis-1,3-Dichloropropene	ND		2.0	0.72	ug/L			06/11/22 06:47	2
Cyclohexane	ND		2.0	0.36	ug/L			06/11/22 06:47	2
Dichlorodifluoromethane	ND		2.0	1.4	ug/L			06/11/22 06:47	2
Ethylbenzene	**7.8**		2.0	1.5	ug/L			06/11/22 06:47	2
Isopropylbenzene	**2.3**		2.0	1.6	ug/L			06/11/22 06:47	2
Methyl acetate	ND		5.0	2.6	ug/L			06/11/22 06:47	2
Methyl tert-butyl ether	ND		2.0	0.32	ug/L			06/11/22 06:47	2
Methylcyclohexane	ND		2.0	0.32	ug/L			06/11/22 06:47	2
Methylene Chloride	**3.6**		2.0	0.88	ug/L			06/11/22 06:47	2
Styrene	ND		2.0	1.5	ug/L			06/11/22 06:47	2
Tetrachloroethene	ND		2.0	0.72	ug/L			06/11/22 06:47	2
Toluene	ND		2.0	1.0	ug/L			06/11/22 06:47	2
trans-1,2-Dichloroethene	ND		2.0	1.8	ug/L			06/11/22 06:47	2
trans-1,3-Dichloropropene	ND		2.0	0.74	ug/L			06/11/22 06:47	2
Trichloroethene	ND		2.0	0.92	ug/L			06/11/22 06:47	2
Trichlorofluoromethane	ND		2.0	1.8	ug/L			06/11/22 06:47	2
Vinyl chloride	ND		2.0	1.8	ug/L			06/11/22 06:47	2
Xylenes, Total	**9.8**		4.0	1.3	ug/L			06/11/22 06:47	2

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: MW-7D
Date Collected: 06/03/22 14:20
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-5
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*100*		*77 - 120*		*06/11/22 06:47*	*2*
Toluene-d8 (Surr)	*95*		*80 - 120*		*06/11/22 06:47*	*2*
4-Bromofluorobenzene (Surr)	*95*		*73 - 120*		*06/11/22 06:47*	*2*
Dibromofluoromethane (Surr)	*99*		*75 - 123*		*06/11/22 06:47*	*2*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biphenyl	**190**	**J**	1000	130	ug/L		06/07/22 08:19	06/08/22 20:22	200
bis (2-chloroisopropyl) ether	ND		1000	100	ug/L		06/07/22 08:19	06/08/22 20:22	200
2,4,5-Trichlorophenol	ND		1000	96	ug/L		06/07/22 08:19	06/08/22 20:22	200
2,4,6-Trichlorophenol	ND		1000	120	ug/L		06/07/22 08:19	06/08/22 20:22	200
2,4-Dichlorophenol	ND		1000	100	ug/L		06/07/22 08:19	06/08/22 20:22	200
2,4-Dimethylphenol	ND		1000	100	ug/L		06/07/22 08:19	06/08/22 20:22	200
2,4-Dinitrophenol	ND		2000	440	ug/L		06/07/22 08:19	06/08/22 20:22	200
2,4-Dinitrotoluene	ND		1000	89	ug/L		06/07/22 08:19	06/08/22 20:22	200
2,6-Dinitrotoluene	ND		1000	80	ug/L		06/07/22 08:19	06/08/22 20:22	200
2-Chloronaphthalene	ND		1000	92	ug/L		06/07/22 08:19	06/08/22 20:22	200
2-Chlorophenol	ND		1000	110	ug/L		06/07/22 08:19	06/08/22 20:22	200
2-Methylphenol	ND		1000	80	ug/L		06/07/22 08:19	06/08/22 20:22	200
2-Methylnaphthalene	**150**	**J**	1000	120	ug/L		06/07/22 08:19	06/08/22 20:22	200
2-Nitroaniline	ND		2000	84	ug/L		06/07/22 08:19	06/08/22 20:22	200
2-Nitrophenol	ND		1000	96	ug/L		06/07/22 08:19	06/08/22 20:22	200
3,3'-Dichlorobenzidine	ND		1000	80	ug/L		06/07/22 08:19	06/08/22 20:22	200
3-Nitroaniline	ND		2000	96	ug/L		06/07/22 08:19	06/08/22 20:22	200
4,6-Dinitro-2-methylphenol	ND		2000	440	ug/L		06/07/22 08:19	06/08/22 20:22	200
4-Bromophenyl phenyl ether	ND		1000	90	ug/L		06/07/22 08:19	06/08/22 20:22	200
4-Chloro-3-methylphenol	ND		1000	90	ug/L		06/07/22 08:19	06/08/22 20:22	200
4-Chloroaniline	ND		1000	120	ug/L		06/07/22 08:19	06/08/22 20:22	200
4-Chlorophenyl phenyl ether	ND		1000	70	ug/L		06/07/22 08:19	06/08/22 20:22	200
4-Methylphenol	ND		2000	72	ug/L		06/07/22 08:19	06/08/22 20:22	200
4-Nitroaniline	ND		2000	50	ug/L		06/07/22 08:19	06/08/22 20:22	200
4-Nitrophenol	ND		2000	300	ug/L		06/07/22 08:19	06/08/22 20:22	200
Acenaphthene	**710**	**J**	1000	82	ug/L		06/07/22 08:19	06/08/22 20:22	200
Acenaphthylene	ND		1000	76	ug/L		06/07/22 08:19	06/08/22 20:22	200
Acetophenone	ND		1000	110	ug/L		06/07/22 08:19	06/08/22 20:22	200
Anthracene	**300**	**J**	1000	56	ug/L		06/07/22 08:19	06/08/22 20:22	200
Atrazine	ND		1000	92	ug/L		06/07/22 08:19	06/08/22 20:22	200
Benzaldehyde	ND		1000	53	ug/L		06/07/22 08:19	06/08/22 20:22	200
Benzo[a]anthracene	ND		1000	72	ug/L		06/07/22 08:19	06/08/22 20:22	200
Benzo[a]pyrene	ND		1000	94	ug/L		06/07/22 08:19	06/08/22 20:22	200
Benzo[b]fluoranthene	ND		1000	68	ug/L		06/07/22 08:19	06/08/22 20:22	200
Benzo[g,h,i]perylene	ND		1000	70	ug/L		06/07/22 08:19	06/08/22 20:22	200
Benzo[k]fluoranthene	ND		1000	150	ug/L		06/07/22 08:19	06/08/22 20:22	200
Bis(2-chloroethoxy)methane	ND		1000	70	ug/L		06/07/22 08:19	06/08/22 20:22	200
Bis(2-chloroethyl)ether	ND		1000	80	ug/L		06/07/22 08:19	06/08/22 20:22	200
Bis(2-ethylhexyl) phthalate	ND		1000	440	ug/L		06/07/22 08:19	06/08/22 20:22	200
Butyl benzyl phthalate	ND		1000	200	ug/L		06/07/22 08:19	06/08/22 20:22	200
Caprolactam	ND		1000	440	ug/L		06/07/22 08:19	06/08/22 20:22	200
Carbazole	ND		1000	60	ug/L		06/07/22 08:19	06/08/22 20:22	200
Chrysene	ND		1000	66	ug/L		06/07/22 08:19	06/08/22 20:22	200

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: MW-7D
Date Collected: 06/03/22 14:20
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-5
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		1000	84	ug/L		06/07/22 08:19	06/08/22 20:22	200
Di-n-butyl phthalate	ND		1000	62	ug/L		06/07/22 08:19	06/08/22 20:22	200
Di-n-octyl phthalate	ND		1000	94	ug/L		06/07/22 08:19	06/08/22 20:22	200
Dibenzofuran	**700**	**J**	2000	100	ug/L		06/07/22 08:19	06/08/22 20:22	200
Diethyl phthalate	ND		1000	44	ug/L		06/07/22 08:19	06/08/22 20:22	200
Dimethyl phthalate	ND		1000	72	ug/L		06/07/22 08:19	06/08/22 20:22	200
Fluoranthene	**650**	**J**	1000	80	ug/L		06/07/22 08:19	06/08/22 20:22	200
Fluorene	**730**	**J**	1000	72	ug/L		06/07/22 08:19	06/08/22 20:22	200
Hexachlorobenzene	ND		1000	100	ug/L		06/07/22 08:19	06/08/22 20:22	200
Hexachlorobutadiene	ND		1000	140	ug/L		06/07/22 08:19	06/08/22 20:22	200
Hexachlorocyclopentadiene	ND		1000	120	ug/L		06/07/22 08:19	06/08/22 20:22	200
Hexachloroethane	ND		1000	120	ug/L		06/07/22 08:19	06/08/22 20:22	200
Indeno[1,2,3-cd]pyrene	ND		1000	94	ug/L		06/07/22 08:19	06/08/22 20:22	200
Isophorone	ND		1000	86	ug/L		06/07/22 08:19	06/08/22 20:22	200
N-Nitrosodi-n-propylamine	ND		1000	110	ug/L		06/07/22 08:19	06/08/22 20:22	200
N-Nitrosodiphenylamine	ND		1000	100	ug/L		06/07/22 08:19	06/08/22 20:22	200
Naphthalene	**160**	**J**	1000	150	ug/L		06/07/22 08:19	06/08/22 20:22	200
Nitrobenzene	ND		1000	58	ug/L		06/07/22 08:19	06/08/22 20:22	200
Pentachlorophenol	ND		2000	440	ug/L		06/07/22 08:19	06/08/22 20:22	200
Phenanthrene	**1800**		1000	88	ug/L		06/07/22 08:19	06/08/22 20:22	200
Phenol	ND		1000	78	ug/L		06/07/22 08:19	06/08/22 20:22	200
Pyrene	**390**	**J**	1000	68	ug/L		06/07/22 08:19	06/08/22 20:22	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*62*		*46 - 120*	*06/07/22 08:19*	*06/08/22 20:22*	*200*
Phenol-d5 (Surr)	*0*	*S1-*	*22 - 120*	*06/07/22 08:19*	*06/08/22 20:22*	*200*
p-Terphenyl-d14 (Surr)	*97*		*60 - 148*	*06/07/22 08:19*	*06/08/22 20:22*	*200*
2,4,6-Tribromophenol (Surr)	*0*	*S1-*	*41 - 120*	*06/07/22 08:19*	*06/08/22 20:22*	*200*
2-Fluorobiphenyl	*93*		*48 - 120*	*06/07/22 08:19*	*06/08/22 20:22*	*200*
2-Fluorophenol (Surr)	*43*		*35 - 120*	*06/07/22 08:19*	*06/08/22 20:22*	*200*

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: BLIND DUPLICATE

Date Collected: 06/03/22 00:00
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-6

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	1.6	ug/L			06/11/22 13:33	2
1,1,2,2-Tetrachloroethane	ND		2.0	0.42	ug/L			06/11/22 13:33	2
1,1,2-Trichloroethane	ND		2.0	0.46	ug/L			06/11/22 13:33	2
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.62	ug/L			06/11/22 13:33	2
1,1-Dichloroethane	**1.5**	**J**	2.0	0.76	ug/L			06/11/22 13:33	2
1,1-Dichloroethene	ND		2.0	0.58	ug/L			06/11/22 13:33	2
1,2,4-Trichlorobenzene	ND		2.0	0.82	ug/L			06/11/22 13:33	2
1,2-Dibromo-3-Chloropropane	ND		2.0	0.78	ug/L			06/11/22 13:33	2
1,2-Dibromoethane	ND		2.0	1.5	ug/L			06/11/22 13:33	2
1,2-Dichlorobenzene	ND		2.0	1.6	ug/L			06/11/22 13:33	2
1,2-Dichloroethane	ND		2.0	0.42	ug/L			06/11/22 13:33	2
1,2-Dichloropropane	ND		2.0	1.4	ug/L			06/11/22 13:33	2
1,3-Dichlorobenzene	ND		2.0	1.6	ug/L			06/11/22 13:33	2
1,4-Dichlorobenzene	ND		2.0	1.7	ug/L			06/11/22 13:33	2
2-Hexanone	ND		10	2.5	ug/L			06/11/22 13:33	2
2-Butanone (MEK)	ND		20	2.6	ug/L			06/11/22 13:33	2
4-Methyl-2-pentanone (MIBK)	ND		10	4.2	ug/L			06/11/22 13:33	2
Acetone	ND		20	6.0	ug/L			06/11/22 13:33	2
Benzene	ND		2.0	0.82	ug/L			06/11/22 13:33	2
Bromodichloromethane	ND		2.0	0.78	ug/L			06/11/22 13:33	2
Bromoform	ND		2.0	0.52	ug/L			06/11/22 13:33	2
Bromomethane	ND		2.0	1.4	ug/L			06/11/22 13:33	2
Carbon disulfide	ND		2.0	0.38	ug/L			06/11/22 13:33	2
Carbon tetrachloride	ND		2.0	0.54	ug/L			06/11/22 13:33	2
Chlorobenzene	ND		2.0	1.5	ug/L			06/11/22 13:33	2
Dibromochloromethane	ND		2.0	0.64	ug/L			06/11/22 13:33	2
Chloroethane	ND		2.0	0.64	ug/L			06/11/22 13:33	2
Chloroform	ND		2.0	0.68	ug/L			06/11/22 13:33	2
Chloromethane	ND		2.0	0.70	ug/L			06/11/22 13:33	2
cis-1,2-Dichloroethene	ND		2.0	1.6	ug/L			06/11/22 13:33	2
cis-1,3-Dichloropropene	ND		2.0	0.72	ug/L			06/11/22 13:33	2
Cyclohexane	ND		2.0	0.36	ug/L			06/11/22 13:33	2
Dichlorodifluoromethane	ND		2.0	1.4	ug/L			06/11/22 13:33	2
Ethylbenzene	**8.2**		2.0	1.5	ug/L			06/11/22 13:33	2
Isopropylbenzene	**2.4**		2.0	1.6	ug/L			06/11/22 13:33	2
Methyl acetate	ND		5.0	2.6	ug/L			06/11/22 13:33	2
Methyl tert-butyl ether	ND		2.0	0.32	ug/L			06/11/22 13:33	2
Methylcyclohexane	ND		2.0	0.32	ug/L			06/11/22 13:33	2
Methylene Chloride	**3.1**		2.0	0.88	ug/L			06/11/22 13:33	2
Styrene	ND		2.0	1.5	ug/L			06/11/22 13:33	2
Tetrachloroethene	ND		2.0	0.72	ug/L			06/11/22 13:33	2
Toluene	ND		2.0	1.0	ug/L			06/11/22 13:33	2
trans-1,2-Dichloroethene	ND		2.0	1.8	ug/L			06/11/22 13:33	2
trans-1,3-Dichloropropene	ND		2.0	0.74	ug/L			06/11/22 13:33	2
Trichloroethene	ND		2.0	0.92	ug/L			06/11/22 13:33	2
Trichlorofluoromethane	ND		2.0	1.8	ug/L			06/11/22 13:33	2
Vinyl chloride	ND		2.0	1.8	ug/L			06/11/22 13:33	2
Xylenes, Total	**11**		4.0	1.3	ug/L			06/11/22 13:33	2

Client Sample ID: BLIND DUPLICATE
Date Collected: 06/03/22 00:00
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-6
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*77 - 120*		*06/11/22 13:33*	*2*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/11/22 13:33*	*2*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*06/11/22 13:33*	*2*
Dibromofluoromethane (Surr)	*97*		*75 - 123*		*06/11/22 13:33*	*2*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biphenyl	ND		1000	130	ug/L		06/07/22 08:37	06/08/22 20:49	200
bis (2-chloroisopropyl) ether	ND		1000	100	ug/L		06/07/22 08:37	06/08/22 20:49	200
2,4,5-Trichlorophenol	ND		1000	96	ug/L		06/07/22 08:37	06/08/22 20:49	200
2,4,6-Trichlorophenol	ND		1000	120	ug/L		06/07/22 08:37	06/08/22 20:49	200
2,4-Dichlorophenol	ND		1000	100	ug/L		06/07/22 08:37	06/08/22 20:49	200
2,4-Dimethylphenol	ND		1000	100	ug/L		06/07/22 08:37	06/08/22 20:49	200
2,4-Dinitrophenol	ND		2000	440	ug/L		06/07/22 08:37	06/08/22 20:49	200
2,4-Dinitrotoluene	ND		1000	89	ug/L		06/07/22 08:37	06/08/22 20:49	200
2,6-Dinitrotoluene	ND		1000	80	ug/L		06/07/22 08:37	06/08/22 20:49	200
2-Chloronaphthalene	ND		1000	92	ug/L		06/07/22 08:37	06/08/22 20:49	200
2-Chlorophenol	ND		1000	110	ug/L		06/07/22 08:37	06/08/22 20:49	200
2-Methylphenol	ND		1000	80	ug/L		06/07/22 08:37	06/08/22 20:49	200
2-Methylnaphthalene	ND		1000	120	ug/L		06/07/22 08:37	06/08/22 20:49	200
2-Nitroaniline	ND		2000	84	ug/L		06/07/22 08:37	06/08/22 20:49	200
2-Nitrophenol	ND		1000	96	ug/L		06/07/22 08:37	06/08/22 20:49	200
3,3'-Dichlorobenzidine	ND		1000	80	ug/L		06/07/22 08:37	06/08/22 20:49	200
3-Nitroaniline	ND		2000	96	ug/L		06/07/22 08:37	06/08/22 20:49	200
4,6-Dinitro-2-methylphenol	ND		2000	440	ug/L		06/07/22 08:37	06/08/22 20:49	200
4-Bromophenyl phenyl ether	ND		1000	90	ug/L		06/07/22 08:37	06/08/22 20:49	200
4-Chloro-3-methylphenol	ND		1000	90	ug/L		06/07/22 08:37	06/08/22 20:49	200
4-Chloroaniline	ND		1000	120	ug/L		06/07/22 08:37	06/08/22 20:49	200
4-Chlorophenyl phenyl ether	ND		1000	70	ug/L		06/07/22 08:37	06/08/22 20:49	200
4-Methylphenol	ND		2000	72	ug/L		06/07/22 08:37	06/08/22 20:49	200
4-Nitroaniline	ND		2000	50	ug/L		06/07/22 08:37	06/08/22 20:49	200
4-Nitrophenol	ND		2000	300	ug/L		06/07/22 08:37	06/08/22 20:49	200
Acenaphthene	**400**	**J**	1000	82	ug/L		06/07/22 08:37	06/08/22 20:49	200
Acenaphthylene	ND		1000	76	ug/L		06/07/22 08:37	06/08/22 20:49	200
Acetophenone	ND		1000	110	ug/L		06/07/22 08:37	06/08/22 20:49	200
Anthracene	**210**	**J**	1000	56	ug/L		06/07/22 08:37	06/08/22 20:49	200
Atrazine	ND		1000	92	ug/L		06/07/22 08:37	06/08/22 20:49	200
Benzaldehyde	ND		1000	53	ug/L		06/07/22 08:37	06/08/22 20:49	200
Benzo[a]anthracene	ND		1000	72	ug/L		06/07/22 08:37	06/08/22 20:49	200
Benzo[a]pyrene	ND		1000	94	ug/L		06/07/22 08:37	06/08/22 20:49	200
Benzo[b]fluoranthene	ND		1000	68	ug/L		06/07/22 08:37	06/08/22 20:49	200
Benzo[g,h,i]perylene	ND		1000	70	ug/L		06/07/22 08:37	06/08/22 20:49	200
Benzo[k]fluoranthene	ND		1000	150	ug/L		06/07/22 08:37	06/08/22 20:49	200
Bis(2-chloroethoxy)methane	ND		1000	70	ug/L		06/07/22 08:37	06/08/22 20:49	200
Bis(2-chloroethyl)ether	ND		1000	80	ug/L		06/07/22 08:37	06/08/22 20:49	200
Bis(2-ethylhexyl) phthalate	ND		1000	440	ug/L		06/07/22 08:37	06/08/22 20:49	200
Butyl benzyl phthalate	ND		1000	200	ug/L		06/07/22 08:37	06/08/22 20:49	200
Caprolactam	ND		1000	440	ug/L		06/07/22 08:37	06/08/22 20:49	200
Carbazole	ND		1000	60	ug/L		06/07/22 08:37	06/08/22 20:49	200
Chrysene	ND		1000	66	ug/L		06/07/22 08:37	06/08/22 20:49	200

Client: Golder Associates Inc.
Job ID: 480-198661-1
Project/Site: Vandemark Chemical site

Client Sample ID: BLIND DUPLICATE
Lab Sample ID: 480-198661-6
Date Collected: 06/03/22 00:00
Matrix: Water
Date Received: 06/03/22 15:45

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		1000	84	ug/L		06/07/22 08:37	06/08/22 20:49	200
Di-n-butyl phthalate	ND		1000	62	ug/L		06/07/22 08:37	06/08/22 20:49	200
Di-n-octyl phthalate	ND		1000	94	ug/L		06/07/22 08:37	06/08/22 20:49	200
Dibenzofuran	**380**	**J**	2000	100	ug/L		06/07/22 08:37	06/08/22 20:49	200
Diethyl phthalate	ND		1000	44	ug/L		06/07/22 08:37	06/08/22 20:49	200
Dimethyl phthalate	ND		1000	72	ug/L		06/07/22 08:37	06/08/22 20:49	200
Fluoranthene	**310**	**J**	1000	80	ug/L		06/07/22 08:37	06/08/22 20:49	200
Fluorene	**390**	**J**	1000	72	ug/L		06/07/22 08:37	06/08/22 20:49	200
Hexachlorobenzene	ND		1000	100	ug/L		06/07/22 08:37	06/08/22 20:49	200
Hexachlorobutadiene	ND		1000	140	ug/L		06/07/22 08:37	06/08/22 20:49	200
Hexachlorocyclopentadiene	ND		1000	120	ug/L		06/07/22 08:37	06/08/22 20:49	200
Hexachloroethane	ND		1000	120	ug/L		06/07/22 08:37	06/08/22 20:49	200
Indeno[1,2,3-cd]pyrene	ND		1000	94	ug/L		06/07/22 08:37	06/08/22 20:49	200
Isophorone	ND		1000	86	ug/L		06/07/22 08:37	06/08/22 20:49	200
N-Nitrosodi-n-propylamine	ND		1000	110	ug/L		06/07/22 08:37	06/08/22 20:49	200
N-Nitrosodiphenylamine	ND		1000	100	ug/L		06/07/22 08:37	06/08/22 20:49	200
Naphthalene	**160**	**J**	1000	150	ug/L		06/07/22 08:37	06/08/22 20:49	200
Nitrobenzene	ND		1000	58	ug/L		06/07/22 08:37	06/08/22 20:49	200
Pentachlorophenol	ND		2000	440	ug/L		06/07/22 08:37	06/08/22 20:49	200
Phenanthrene	**990**	**J**	1000	88	ug/L		06/07/22 08:37	06/08/22 20:49	200
Phenol	ND		1000	78	ug/L		06/07/22 08:37	06/08/22 20:49	200
Pyrene	**170**	**J**	1000	68	ug/L		06/07/22 08:37	06/08/22 20:49	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*71*		*46 - 120*	*06/07/22 08:37*	*06/08/22 20:49*	*200*
Phenol-d5 (Surr)	*0*	*S1-*	*22 - 120*	*06/07/22 08:37*	*06/08/22 20:49*	*200*
p-Terphenyl-d14 (Surr)	*83*		*60 - 148*	*06/07/22 08:37*	*06/08/22 20:49*	*200*
2,4,6-Tribromophenol (Surr)	*0*	*S1-*	*41 - 120*	*06/07/22 08:37*	*06/08/22 20:49*	*200*
2-Fluorobiphenyl	*77*		*48 - 120*	*06/07/22 08:37*	*06/08/22 20:49*	*200*
2-Fluorophenol (Surr)	*0*	*S1-*	*35 - 120*	*06/07/22 08:37*	*06/08/22 20:49*	*200*

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: MW-3D
Date Collected: 06/03/22 13:06
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-7
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	1.6	ug/L			06/11/22 13:56	2
1,1,2,2-Tetrachloroethane	ND		2.0	0.42	ug/L			06/11/22 13:56	2
1,1,2-Trichloroethane	ND		2.0	0.46	ug/L			06/11/22 13:56	2
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.62	ug/L			06/11/22 13:56	2
1,1-Dichloroethane	ND		2.0	0.76	ug/L			06/11/22 13:56	2
1,1-Dichloroethene	ND		2.0	0.58	ug/L			06/11/22 13:56	2
1,2,4-Trichlorobenzene	ND		2.0	0.82	ug/L			06/11/22 13:56	2
1,2-Dibromo-3-Chloropropane	ND		2.0	0.78	ug/L			06/11/22 13:56	2
1,2-Dibromoethane	ND		2.0	1.5	ug/L			06/11/22 13:56	2
1,2-Dichlorobenzene	ND		2.0	1.6	ug/L			06/11/22 13:56	2
1,2-Dichloroethane	ND		2.0	0.42	ug/L			06/11/22 13:56	2
1,2-Dichloropropane	ND		2.0	1.4	ug/L			06/11/22 13:56	2
1,3-Dichlorobenzene	ND		2.0	1.6	ug/L			06/11/22 13:56	2
1,4-Dichlorobenzene	ND		2.0	1.7	ug/L			06/11/22 13:56	2
2-Hexanone	ND		10	2.5	ug/L			06/11/22 13:56	2
2-Butanone (MEK)	ND		20	2.6	ug/L			06/11/22 13:56	2
4-Methyl-2-pentanone (MIBK)	ND		10	4.2	ug/L			06/11/22 13:56	2
Acetone	ND		20	6.0	ug/L			06/11/22 13:56	2
Benzene	ND		2.0	0.82	ug/L			06/11/22 13:56	2
Bromodichloromethane	ND		2.0	0.78	ug/L			06/11/22 13:56	2
Bromoform	ND		2.0	0.52	ug/L			06/11/22 13:56	2
Bromomethane	ND		2.0	1.4	ug/L			06/11/22 13:56	2
Carbon disulfide	ND		2.0	0.38	ug/L			06/11/22 13:56	2
Carbon tetrachloride	ND		2.0	0.54	ug/L			06/11/22 13:56	2
Chlorobenzene	**16**	**F1**	2.0	1.5	ug/L			06/11/22 13:56	2
Dibromochloromethane	ND		2.0	0.64	ug/L			06/11/22 13:56	2
Chloroethane	ND		2.0	0.64	ug/L			06/11/22 13:56	2
Chloroform	**0.74**	**J**	2.0	0.68	ug/L			06/11/22 13:56	2
Chloromethane	ND		2.0	0.70	ug/L			06/11/22 13:56	2
cis-1,2-Dichloroethene	ND		2.0	1.6	ug/L			06/11/22 13:56	2
cis-1,3-Dichloropropene	ND		2.0	0.72	ug/L			06/11/22 13:56	2
Cyclohexane	ND		2.0	0.36	ug/L			06/11/22 13:56	2
Dichlorodifluoromethane	ND		2.0	1.4	ug/L			06/11/22 13:56	2
Ethylbenzene	ND		2.0	1.5	ug/L			06/11/22 13:56	2
Isopropylbenzene	ND		2.0	1.6	ug/L			06/11/22 13:56	2
Methyl acetate	ND		5.0	2.6	ug/L			06/11/22 13:56	2
Methyl tert-butyl ether	ND		2.0	0.32	ug/L			06/11/22 13:56	2
Methylcyclohexane	ND		2.0	0.32	ug/L			06/11/22 13:56	2
Methylene Chloride	ND		2.0	0.88	ug/L			06/11/22 13:56	2
Styrene	ND		2.0	1.5	ug/L			06/11/22 13:56	2
Tetrachloroethene	ND		2.0	0.72	ug/L			06/11/22 13:56	2
Toluene	ND		2.0	1.0	ug/L			06/11/22 13:56	2
trans-1,2-Dichloroethene	ND		2.0	1.8	ug/L			06/11/22 13:56	2
trans-1,3-Dichloropropene	ND		2.0	0.74	ug/L			06/11/22 13:56	2
Trichloroethene	**0.94**	**J**	2.0	0.92	ug/L			06/11/22 13:56	2
Trichlorofluoromethane	ND		2.0	1.8	ug/L			06/11/22 13:56	2
Vinyl chloride	ND	F1	2.0	1.8	ug/L			06/11/22 13:56	2
Xylenes, Total	ND		4.0	1.3	ug/L			06/11/22 13:56	2

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Client Sample ID: MW-3D
Date Collected: 06/03/22 13:06
Date Received: 06/03/22 15:45

Lab Sample ID: 480-198661-7
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*92*		*77 - 120*		*06/11/22 13:56*	*2*
Toluene-d8 (Surr)	*94*		*80 - 120*		*06/11/22 13:56*	*2*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*06/11/22 13:56*	*2*
Dibromofluoromethane (Surr)	*93*		*75 - 123*		*06/11/22 13:56*	*2*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biphenyl	ND		5.0	0.65	ug/L		06/07/22 08:17	06/08/22 17:07	1
bis (2-chloroisopropyl) ether	ND		5.0	0.52	ug/L		06/07/22 08:17	06/08/22 17:07	1
2,4,5-Trichlorophenol	ND		5.0	0.48	ug/L		06/07/22 08:17	06/08/22 17:07	1
2,4,6-Trichlorophenol	ND		5.0	0.61	ug/L		06/07/22 08:17	06/08/22 17:07	1
2,4-Dichlorophenol	ND		5.0	0.51	ug/L		06/07/22 08:17	06/08/22 17:07	1
2,4-Dimethylphenol	ND		5.0	0.50	ug/L		06/07/22 08:17	06/08/22 17:07	1
2,4-Dinitrophenol	ND		10	2.2	ug/L		06/07/22 08:17	06/08/22 17:07	1
2,4-Dinitrotoluene	ND		5.0	0.45	ug/L		06/07/22 08:17	06/08/22 17:07	1
2,6-Dinitrotoluene	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 17:07	1
2-Chloronaphthalene	ND		5.0	0.46	ug/L		06/07/22 08:17	06/08/22 17:07	1
2-Chlorophenol	ND		5.0	0.53	ug/L		06/07/22 08:17	06/08/22 17:07	1
2-Methylphenol	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 17:07	1
2-Methylnaphthalene	ND		5.0	0.60	ug/L		06/07/22 08:17	06/08/22 17:07	1
2-Nitroaniline	ND		10	0.42	ug/L		06/07/22 08:17	06/08/22 17:07	1
2-Nitrophenol	ND		5.0	0.48	ug/L		06/07/22 08:17	06/08/22 17:07	1
3,3'-Dichlorobenzidine	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 17:07	1
3-Nitroaniline	ND		10	0.48	ug/L		06/07/22 08:17	06/08/22 17:07	1
4,6-Dinitro-2-methylphenol	ND		10	2.2	ug/L		06/07/22 08:17	06/08/22 17:07	1
4-Bromophenyl phenyl ether	ND		5.0	0.45	ug/L		06/07/22 08:17	06/08/22 17:07	1
4-Chloro-3-methylphenol	ND		5.0	0.45	ug/L		06/07/22 08:17	06/08/22 17:07	1
4-Chloroaniline	ND		5.0	0.59	ug/L		06/07/22 08:17	06/08/22 17:07	1
4-Chlorophenyl phenyl ether	ND		5.0	0.35	ug/L		06/07/22 08:17	06/08/22 17:07	1
4-Methylphenol	ND		10	0.36	ug/L		06/07/22 08:17	06/08/22 17:07	1
4-Nitroaniline	ND		10	0.25	ug/L		06/07/22 08:17	06/08/22 17:07	1
4-Nitrophenol	ND		10	1.5	ug/L		06/07/22 08:17	06/08/22 17:07	1
Acenaphthene	**0.86**	**J F1**	5.0	0.41	ug/L		06/07/22 08:17	06/08/22 17:07	1
Acenaphthylene	ND		5.0	0.38	ug/L		06/07/22 08:17	06/08/22 17:07	1
Acetophenone	ND		5.0	0.54	ug/L		06/07/22 08:17	06/08/22 17:07	1
Anthracene	ND		5.0	0.28	ug/L		06/07/22 08:17	06/08/22 17:07	1
Atrazine	ND		5.0	0.46	ug/L		06/07/22 08:17	06/08/22 17:07	1
Benzaldehyde	ND		5.0	0.27	ug/L		06/07/22 08:17	06/08/22 17:07	1
Benzo[a]anthracene	ND		5.0	0.36	ug/L		06/07/22 08:17	06/08/22 17:07	1
Benzo[a]pyrene	ND		5.0	0.47	ug/L		06/07/22 08:17	06/08/22 17:07	1
Benzo[b]fluoranthene	ND		5.0	0.34	ug/L		06/07/22 08:17	06/08/22 17:07	1
Benzo[g,h,i]perylene	ND		5.0	0.35	ug/L		06/07/22 08:17	06/08/22 17:07	1
Benzo[k]fluoranthene	ND		5.0	0.73	ug/L		06/07/22 08:17	06/08/22 17:07	1
Bis(2-chloroethoxy)methane	ND		5.0	0.35	ug/L		06/07/22 08:17	06/08/22 17:07	1
Bis(2-chloroethyl)ether	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 17:07	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		06/07/22 08:17	06/08/22 17:07	1
Butyl benzyl phthalate	ND		5.0	1.0	ug/L		06/07/22 08:17	06/08/22 17:07	1
Caprolactam	ND		5.0	2.2	ug/L		06/07/22 08:17	06/08/22 17:07	1
Carbazole	ND		5.0	0.30	ug/L		06/07/22 08:17	06/08/22 17:07	1
Chrysene	ND		5.0	0.33	ug/L		06/07/22 08:17	06/08/22 17:07	1

Client: Golder Associates Inc.
Job ID: 480-198661-1
Project/Site: Vandemark Chemical site

Client Sample ID: MW-3D
Lab Sample ID: 480-198661-7
Date Collected: 06/03/22 13:06
Matrix: Water
Date Received: 06/03/22 15:45

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		5.0	0.42	ug/L		06/07/22 08:17	06/08/22 17:07	1
Di-n-butyl phthalate	ND		5.0	0.31	ug/L		06/07/22 08:17	06/08/22 17:07	1
Di-n-octyl phthalate	ND		5.0	0.47	ug/L		06/07/22 08:17	06/08/22 17:07	1
Dibenzofuran	ND		10	0.51	ug/L		06/07/22 08:17	06/08/22 17:07	1
Diethyl phthalate	ND		5.0	0.22	ug/L		06/07/22 08:17	06/08/22 17:07	1
Dimethyl phthalate	ND		5.0	0.36	ug/L		06/07/22 08:17	06/08/22 17:07	1
Fluoranthene	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 17:07	1
Fluorene	ND		5.0	0.36	ug/L		06/07/22 08:17	06/08/22 17:07	1
Hexachlorobenzene	ND		5.0	0.51	ug/L		06/07/22 08:17	06/08/22 17:07	1
Hexachlorobutadiene	ND		5.0	0.68	ug/L		06/07/22 08:17	06/08/22 17:07	1
Hexachlorocyclopentadiene	ND		5.0	0.59	ug/L		06/07/22 08:17	06/08/22 17:07	1
Hexachloroethane	ND		5.0	0.59	ug/L		06/07/22 08:17	06/08/22 17:07	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.47	ug/L		06/07/22 08:17	06/08/22 17:07	1
Isophorone	ND		5.0	0.43	ug/L		06/07/22 08:17	06/08/22 17:07	1
N-Nitrosodi-n-propylamine	ND		5.0	0.54	ug/L		06/07/22 08:17	06/08/22 17:07	1
N-Nitrosodiphenylamine	ND		5.0	0.51	ug/L		06/07/22 08:17	06/08/22 17:07	1
Naphthalene	ND		5.0	0.76	ug/L		06/07/22 08:17	06/08/22 17:07	1
Nitrobenzene	ND		5.0	0.29	ug/L		06/07/22 08:17	06/08/22 17:07	1
Pentachlorophenol	ND		10	2.2	ug/L		06/07/22 08:17	06/08/22 17:07	1
Phenanthrene	ND		5.0	0.44	ug/L		06/07/22 08:17	06/08/22 17:07	1
Phenol	ND		5.0	0.39	ug/L		06/07/22 08:17	06/08/22 17:07	1
Pyrene	ND		5.0	0.34	ug/L		06/07/22 08:17	06/08/22 17:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*80*		*46 - 120*	*06/07/22 08:17*	*06/08/22 17:07*	*1*
Phenol-d5 (Surr)	*45*		*22 - 120*	*06/07/22 08:17*	*06/08/22 17:07*	*1*
p-Terphenyl-d14 (Surr)	*74*		*60 - 148*	*06/07/22 08:17*	*06/08/22 17:07*	*1*
2,4,6-Tribromophenol (Surr)	*60*		*41 - 120*	*06/07/22 08:17*	*06/08/22 17:07*	*1*
2-Fluorobiphenyl	*88*		*48 - 120*	*06/07/22 08:17*	*06/08/22 17:07*	*1*
2-Fluorophenol (Surr)	*62*		*35 - 120*	*06/07/22 08:17*	*06/08/22 17:07*	*1*

Surrogate Summary

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(77-120)	(80-120)	(73-120)	(75-123)
480-198661-1	PZ-2	97	92	101	99
480-198661-2	PZ-3	99	92	97	97
480-198661-3	PZ-4	94	97	97	92
480-198661-4	FILTER VAULT EFF	100	93	102	102
480-198661-5	MW-7D	100	95	95	99
480-198661-6	BLIND DUPLICATE	98	96	98	97
480-198661-7	MW-3D	92	94	99	93
480-198661-7 MS	MW-3D	97	95	99	100
480-198661-7 MSD	MW-3D	94	95	97	97
LCS 480-629615/6	Lab Control Sample	96	95	98	98
LCS 480-629684/5	Lab Control Sample	97	96	98	99
MB 480-629615/8	Method Blank	98	96	97	96
MB 480-629684/7	Method Blank	97	98	101	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		NBZ	PHL	TPHd14	TBP	FBP	2FP
Lab Sample ID	Client Sample ID	(46-120)	(22-120)	(60-148)	(41-120)	(48-120)	(35-120)
480-198661-1	PZ-2	75	47	73	75	87	62
480-198661-2	PZ-3	75	46	69	82	86	61
480-198661-3	PZ-4	80	49	83	81	94	68
480-198661-4	FILTER VAULT EFF	84	49	89	71	96	65
480-198661-5	MW-7D	62	0 S1-	97	0 S1-	93	43
480-198661-6	BLIND DUPLICATE	71	0 S1-	83	0 S1-	77	0 S1-
480-198661-7	MW-3D	80	45	74	60	88	62
480-198661-7 MS	MW-3D	85	60	78	93	94	72
480-198661-7 MSD	MW-3D	84	57	76	93	92	69
LCS 480-628985/2-A	Lab Control Sample	79	57	96	89	87	67
MB 480-628985/1-A	Method Blank	79	52	99	70	90	68

Surrogate Legend

NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)

Client: Golder Associates Inc.
Project/Site: Vandemark Chemical site

Job ID: 480-198661-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-629615/8
Matrix: Water
Analysis Batch: 629615

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			06/10/22 23:50	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			06/10/22 23:50	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			06/10/22 23:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			06/10/22 23:50	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/10/22 23:50	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			06/10/22 23:50	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			06/10/22 23:50	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			06/10/22 23:50	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			06/10/22 23:50	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			06/10/22 23:50	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			06/10/22 23:50	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			06/10/22 23:50	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			06/10/22 23:50	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			06/10/22 23:50	1
2-Hexanone	ND		5.0	1.2	ug/L			06/10/22 23:50	1
2-Butanone (MEK)	ND		10	1.3	ug/L			06/10/22 23:50	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			06/10/22 23:50	1
Acetone	ND		10	3.0	ug/L			06/10/22 23:50	1
Benzene	ND		1.0	0.41	ug/L			06/10/22 23:50	1
Bromodichloromethane	ND		1.0	0.39	ug/L			06/10/22 23:50	1
Bromoform	ND		1.0	0.26	ug/L			06/10/22 23:50	1
Bromomethane	ND		1.0	0.69	ug/L			06/10/22 23:50	1
Carbon disulfide	ND		1.0	0.19	ug/L			06/10/22 23:50	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			06/10/22 23:50	1
Chlorobenzene	ND		1.0	0.75	ug/L			06/10/22 23:50	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/10/22 23:50	1
Chloroethane	ND		1.0	0.32	ug/L			06/10/22 23:50	1
Chloroform	ND		1.0	0.34	ug/L			06/10/22 23:50	1
Chloromethane	ND		1.0	0.35	ug/L			06/10/22 23:50	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			06/10/22 23:50	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			06/10/22 23:50	1
Cyclohexane	ND		1.0	0.18	ug/L			06/10/22 23:50	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			06/10/22 23:50	1
Ethylbenzene	ND		1.0	0.74	ug/L			06/10/22 23:50	1
Isopropylbenzene	ND		1.0	0.79	ug/L			06/10/22 23:50	1
Methyl acetate	ND		2.5	1.3	ug/L			06/10/22 23:50	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			06/10/22 23:50	1
Methylcyclohexane	ND		1.0	0.16	ug/L			06/10/22 23:50	1
Methylene Chloride	ND		1.0	0.44	ug/L			06/10/22 23:50	1
Styrene	ND		1.0	0.73	ug/L			06/10/22 23:50	1
Tetrachloroethene	ND		1.0	0.36	ug/L			06/10/22 23:50	1
Toluene	ND		1.0	0.51	ug/L			06/10/22 23:50	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			06/10/22 23:50	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			06/10/22 23:50	1
Trichloroethene	ND		1.0	0.46	ug/L			06/10/22 23:50	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			06/10/22 23:50	1
Vinyl chloride	ND		1.0	0.90	ug/L			06/10/22 23:50	1
Xylenes, Total	ND		2.0	0.66	ug/L			06/10/22 23:50	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-629615/8
Matrix: Water
Analysis Batch: 629615

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*98*		*77 - 120*		*06/10/22 23:50*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*06/10/22 23:50*	*1*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*06/10/22 23:50*	*1*
Dibromofluoromethane (Surr)	*96*		*75 - 123*		*06/10/22 23:50*	*1*

Lab Sample ID: LCS 480-629615/6
Matrix: Water
Analysis Batch: 629615

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	25.0	22.1		ug/L		88	73 - 126
1,1,2,2-Tetrachloroethane	25.0	22.6		ug/L		90	76 - 120
1,1,2-Trichloroethane	25.0	22.7		ug/L		91	76 - 122
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	22.1		ug/L		88	61 - 148
1,1-Dichloroethane	25.0	21.5		ug/L		86	77 - 120
1,1-Dichloroethene	25.0	21.0		ug/L		84	66 - 127
1,2,4-Trichlorobenzene	25.0	22.5		ug/L		90	79 - 122
1,2-Dibromo-3-Chloropropane	25.0	20.5		ug/L		82	56 - 134
1,2-Dibromoethane	25.0	22.4		ug/L		90	77 - 120
1,2-Dichlorobenzene	25.0	22.5		ug/L		90	80 - 124
1,2-Dichloroethane	25.0	21.9		ug/L		88	75 - 120
1,2-Dichloropropane	25.0	22.6		ug/L		91	76 - 120
1,3-Dichlorobenzene	25.0	22.2		ug/L		89	77 - 120
1,4-Dichlorobenzene	25.0	22.6		ug/L		90	80 - 120
2-Hexanone	125	103		ug/L		83	65 - 127
2-Butanone (MEK)	125	103		ug/L		82	57 - 140
4-Methyl-2-pentanone (MIBK)	125	106		ug/L		85	71 - 125
Acetone	125	98.5		ug/L		79	56 - 142
Benzene	25.0	22.0		ug/L		88	71 - 124
Bromodichloromethane	25.0	22.2		ug/L		89	80 - 122
Bromoform	25.0	22.0		ug/L		88	61 - 132
Bromomethane	25.0	21.1		ug/L		84	55 - 144
Carbon disulfide	25.0	20.1		ug/L		80	59 - 134
Carbon tetrachloride	25.0	21.5		ug/L		86	72 - 134
Chlorobenzene	25.0	22.5		ug/L		90	80 - 120
Dibromochloromethane	25.0	22.2		ug/L		89	75 - 125
Chloroethane	25.0	21.0		ug/L		84	69 - 136
Chloroform	25.0	21.7		ug/L		87	73 - 127
Chloromethane	25.0	19.0		ug/L		76	68 - 124
cis-1,2-Dichloroethene	25.0	22.1		ug/L		88	74 - 124
cis-1,3-Dichloropropene	25.0	23.0		ug/L		92	74 - 124
Cyclohexane	25.0	21.3		ug/L		85	59 - 135
Dichlorodifluoromethane	25.0	18.9		ug/L		76	59 - 135
Ethylbenzene	25.0	21.5		ug/L		86	77 - 123
Isopropylbenzene	25.0	21.6		ug/L		87	77 - 122
Methyl acetate	50.0	39.4		ug/L		79	74 - 133
Methyl tert-butyl ether	25.0	22.3		ug/L		89	77 - 120
Methylcyclohexane	25.0	21.8		ug/L		87	68 - 134

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-629615/6
Matrix: Water
Analysis Batch: 629615

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene Chloride	25.0	23.4		ug/L		94	75 - 124
Styrene	25.0	23.1		ug/L		92	80 - 120
Tetrachloroethene	25.0	21.7		ug/L		87	74 - 122
Toluene	25.0	21.5		ug/L		86	80 - 122
trans-1,2-Dichloroethene	25.0	21.8		ug/L		87	73 - 127
trans-1,3-Dichloropropene	25.0	21.7		ug/L		87	80 - 120
Trichloroethene	25.0	21.6		ug/L		86	74 - 123
Trichlorofluoromethane	25.0	22.1		ug/L		88	62 - 150
Vinyl chloride	25.0	22.6		ug/L		91	65 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*77 - 120*
Toluene-d8 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*
Dibromofluoromethane (Surr)	*98*		*75 - 123*

Lab Sample ID: MB 480-629684/7
Matrix: Water
Analysis Batch: 629684

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			06/11/22 12:58	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			06/11/22 12:58	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			06/11/22 12:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			06/11/22 12:58	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			06/11/22 12:58	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			06/11/22 12:58	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			06/11/22 12:58	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			06/11/22 12:58	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			06/11/22 12:58	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			06/11/22 12:58	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			06/11/22 12:58	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			06/11/22 12:58	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			06/11/22 12:58	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			06/11/22 12:58	1
2-Hexanone	ND		5.0	1.2	ug/L			06/11/22 12:58	1
2-Butanone (MEK)	ND		10	1.3	ug/L			06/11/22 12:58	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			06/11/22 12:58	1
Acetone	ND		10	3.0	ug/L			06/11/22 12:58	1
Benzene	ND		1.0	0.41	ug/L			06/11/22 12:58	1
Bromodichloromethane	ND		1.0	0.39	ug/L			06/11/22 12:58	1
Bromoform	ND		1.0	0.26	ug/L			06/11/22 12:58	1
Bromomethane	ND		1.0	0.69	ug/L			06/11/22 12:58	1
Carbon disulfide	ND		1.0	0.19	ug/L			06/11/22 12:58	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			06/11/22 12:58	1
Chlorobenzene	ND		1.0	0.75	ug/L			06/11/22 12:58	1
Dibromochloromethane	ND		1.0	0.32	ug/L			06/11/22 12:58	1
Chloroethane	ND		1.0	0.32	ug/L			06/11/22 12:58	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-629684/7
Matrix: Water
Analysis Batch: 629684

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		1.0	0.34	ug/L			06/11/22 12:58	1
Chloromethane	ND		1.0	0.35	ug/L			06/11/22 12:58	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			06/11/22 12:58	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			06/11/22 12:58	1
Cyclohexane	ND		1.0	0.18	ug/L			06/11/22 12:58	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			06/11/22 12:58	1
Ethylbenzene	ND		1.0	0.74	ug/L			06/11/22 12:58	1
Isopropylbenzene	ND		1.0	0.79	ug/L			06/11/22 12:58	1
Methyl acetate	ND		2.5	1.3	ug/L			06/11/22 12:58	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			06/11/22 12:58	1
Methylcyclohexane	ND		1.0	0.16	ug/L			06/11/22 12:58	1
Methylene Chloride	ND		1.0	0.44	ug/L			06/11/22 12:58	1
Styrene	ND		1.0	0.73	ug/L			06/11/22 12:58	1
Tetrachloroethene	ND		1.0	0.36	ug/L			06/11/22 12:58	1
Toluene	ND		1.0	0.51	ug/L			06/11/22 12:58	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			06/11/22 12:58	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			06/11/22 12:58	1
Trichloroethene	ND		1.0	0.46	ug/L			06/11/22 12:58	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			06/11/22 12:58	1
Vinyl chloride	ND		1.0	0.90	ug/L			06/11/22 12:58	1
Xylenes, Total	ND		2.0	0.66	ug/L			06/11/22 12:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*77 - 120*		*06/11/22 12:58*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*06/11/22 12:58*	*1*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*		*06/11/22 12:58*	*1*
Dibromofluoromethane (Surr)	*97*		*75 - 123*		*06/11/22 12:58*	*1*

Lab Sample ID: LCS 480-629684/5
Matrix: Water
Analysis Batch: 629684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	25.0	23.2		ug/L		93	73 - 126
1,1,2,2-Tetrachloroethane	25.0	21.4		ug/L		86	76 - 120
1,1,2-Trichloroethane	25.0	22.7		ug/L		91	76 - 122
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	22.9		ug/L		92	61 - 148
1,1-Dichloroethane	25.0	22.7		ug/L		91	77 - 120
1,1-Dichloroethene	25.0	21.6		ug/L		86	66 - 127
1,2,4-Trichlorobenzene	25.0	24.6		ug/L		98	79 - 122
1,2-Dibromo-3-Chloropropane	25.0	20.2		ug/L		81	56 - 134
1,2-Dibromoethane	25.0	22.3		ug/L		89	77 - 120
1,2-Dichlorobenzene	25.0	23.2		ug/L		93	80 - 124
1,2-Dichloroethane	25.0	22.5		ug/L		90	75 - 120
1,2-Dichloropropane	25.0	24.1		ug/L		97	76 - 120
1,3-Dichlorobenzene	25.0	23.1		ug/L		92	77 - 120
1,4-Dichlorobenzene	25.0	22.6		ug/L		90	80 - 120
2-Hexanone	125	111		ug/L		89	65 - 127

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-629684/5
Matrix: Water
Analysis Batch: 629684

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butanone (MEK)	125	107		ug/L		85	57 - 140
4-Methyl-2-pentanone (MIBK)	125	105		ug/L		84	71 - 125
Acetone	125	111		ug/L		88	56 - 142
Benzene	25.0	23.3		ug/L		93	71 - 124
Bromodichloromethane	25.0	23.2		ug/L		93	80 - 122
Bromoform	25.0	22.2		ug/L		89	61 - 132
Bromomethane	25.0	25.6		ug/L		102	55 - 144
Carbon disulfide	25.0	21.3		ug/L		85	59 - 134
Carbon tetrachloride	25.0	23.1		ug/L		92	72 - 134
Chlorobenzene	25.0	23.1		ug/L		92	80 - 120
Dibromochloromethane	25.0	22.3		ug/L		89	75 - 125
Chloroethane	25.0	24.2		ug/L		97	69 - 136
Chloroform	25.0	22.7		ug/L		91	73 - 127
Chloromethane	25.0	24.8		ug/L		99	68 - 124
cis-1,2-Dichloroethene	25.0	23.7		ug/L		95	74 - 124
cis-1,3-Dichloropropene	25.0	24.4		ug/L		97	74 - 124
Cyclohexane	25.0	23.4		ug/L		94	59 - 135
Dichlorodifluoromethane	25.0	28.1		ug/L		112	59 - 135
Ethylbenzene	25.0	22.7		ug/L		91	77 - 123
Isopropylbenzene	25.0	22.1		ug/L		88	77 - 122
Methyl acetate	50.0	41.0		ug/L		82	74 - 133
Methyl tert-butyl ether	25.0	22.7		ug/L		91	77 - 120
Methylcyclohexane	25.0	24.0		ug/L		96	68 - 134
Methylene Chloride	25.0	25.6		ug/L		102	75 - 124
Styrene	25.0	23.8		ug/L		95	80 - 120
Tetrachloroethene	25.0	22.2		ug/L		89	74 - 122
Toluene	25.0	22.3		ug/L		89	80 - 122
trans-1,2-Dichloroethene	25.0	23.2		ug/L		93	73 - 127
trans-1,3-Dichloropropene	25.0	23.1		ug/L		92	80 - 120
Trichloroethene	25.0	22.6		ug/L		90	74 - 123
Trichlorofluoromethane	25.0	26.0		ug/L		104	62 - 150
Vinyl chloride	25.0	29.0		ug/L		116	65 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*77 - 120*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*
Dibromofluoromethane (Surr)	*99*		*75 - 123*

Lab Sample ID: 480-198661-7 MS
Matrix: Water
Analysis Batch: 629684

Client Sample ID: MW-3D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	ND		50.0	52.1		ug/L		104	73 - 126
1,1,2,2-Tetrachloroethane	ND		50.0	45.3		ug/L		91	76 - 120
1,1,2-Trichloroethane	ND		50.0	45.1		ug/L		90	76 - 122
1,1,2-Trichloro-1,2,2-trifluoroetha ne	ND		50.0	54.4		ug/L		109	61 - 148

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 480-198661-7 MS
Matrix: Water
Analysis Batch: 629684

Client Sample ID: MW-3D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethane	ND		50.0	49.0		ug/L		98	77 - 120
1,1-Dichloroethene	ND		50.0	50.4		ug/L		101	66 - 127
1,2,4-Trichlorobenzene	ND		50.0	50.2		ug/L		100	79 - 122
1,2-Dibromo-3-Chloropropane	ND		50.0	43.2		ug/L		86	56 - 134
1,2-Dibromoethane	ND		50.0	47.4		ug/L		95	77 - 120
1,2-Dichlorobenzene	ND		50.0	48.2		ug/L		96	80 - 124
1,2-Dichloroethane	ND		50.0	46.9		ug/L		94	75 - 120
1,2-Dichloropropane	ND		50.0	50.3		ug/L		101	76 - 120
1,3-Dichlorobenzene	ND		50.0	48.0		ug/L		96	77 - 120
1,4-Dichlorobenzene	ND		50.0	47.8		ug/L		96	78 - 124
2-Hexanone	ND		250	207		ug/L		83	65 - 127
2-Butanone (MEK)	ND		250	197		ug/L		79	57 - 140
4-Methyl-2-pentanone (MIBK)	ND		250	214		ug/L		86	71 - 125
Acetone	ND		250	182		ug/L		73	56 - 142
Benzene	ND		50.0	50.7		ug/L		101	71 - 124
Bromodichloromethane	ND		50.0	47.8		ug/L		96	80 - 122
Bromoform	ND		50.0	43.2		ug/L		86	61 - 132
Bromomethane	ND		50.0	55.9		ug/L		112	55 - 144
Carbon disulfide	ND		50.0	47.4		ug/L		95	59 - 134
Carbon tetrachloride	ND		50.0	51.9		ug/L		104	72 - 134
Chlorobenzene	16	F1	50.0	78.3	F1	ug/L		125	80 - 120
Dibromochloromethane	ND		50.0	45.8		ug/L		92	75 - 125
Chloroethane	ND		50.0	52.9		ug/L		106	69 - 136
Chloroform	0.74	J	50.0	48.6		ug/L		96	73 - 127
Chloromethane	ND		50.0	56.6		ug/L		113	68 - 124
cis-1,2-Dichloroethene	ND		50.0	50.3		ug/L		101	74 - 124
cis-1,3-Dichloropropene	ND		50.0	47.6		ug/L		95	74 - 124
Cyclohexane	ND		50.0	55.0		ug/L		110	59 - 135
Dichlorodifluoromethane	ND		50.0	65.8		ug/L		132	59 - 135
Ethylbenzene	ND		50.0	48.1		ug/L		96	77 - 123
Isopropylbenzene	ND		50.0	49.4		ug/L		99	77 - 122
Methyl acetate	ND		100	79.8		ug/L		80	74 - 133
Methyl tert-butyl ether	ND		50.0	45.8		ug/L		92	77 - 120
Methylcyclohexane	ND		50.0	54.1		ug/L		108	68 - 134
Methylene Chloride	ND		50.0	52.9		ug/L		106	75 - 124
Styrene	ND		50.0	49.5		ug/L		99	80 - 120
Tetrachloroethene	ND		50.0	49.4		ug/L		99	74 - 122
Toluene	ND		50.0	48.1		ug/L		96	80 - 122
trans-1,2-Dichloroethene	ND		50.0	50.1		ug/L		100	73 - 127
trans-1,3-Dichloropropene	ND		50.0	44.9		ug/L		90	80 - 120
Trichloroethene	0.94	J	50.0	50.1		ug/L		98	74 - 123
Trichlorofluoromethane	ND		50.0	61.3		ug/L		123	62 - 150
Vinyl chloride	ND	F1	50.0	67.4	F1	ug/L		135	65 - 133

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*77 - 120*
Toluene-d8 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 480-198661-7 MS
Matrix: Water
Analysis Batch: 629684

Client Sample ID: MW-3D
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	*100*		*75 - 123*

Lab Sample ID: 480-198661-7 MSD
Matrix: Water
Analysis Batch: 629684

Client Sample ID: MW-3D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		50.0	50.3		ug/L		101	73 - 126	4	15
1,1,2,2-Tetrachloroethane	ND		50.0	45.7		ug/L		91	76 - 120	1	15
1,1,2-Trichloroethane	ND		50.0	46.1		ug/L		92	76 - 122	2	15
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		50.0	51.9		ug/L		104	61 - 148	5	20
1,1-Dichloroethane	ND		50.0	46.9		ug/L		94	77 - 120	4	20
1,1-Dichloroethene	ND		50.0	47.8		ug/L		96	66 - 127	5	16
1,2,4-Trichlorobenzene	ND		50.0	51.5		ug/L		103	79 - 122	2	20
1,2-Dibromo-3-Chloropropane	ND		50.0	42.8		ug/L		86	56 - 134	1	15
1,2-Dibromoethane	ND		50.0	46.1		ug/L		92	77 - 120	3	15
1,2-Dichlorobenzene	ND		50.0	48.1		ug/L		96	80 - 124	0	20
1,2-Dichloroethane	ND		50.0	45.6		ug/L		91	75 - 120	3	20
1,2-Dichloropropane	ND		50.0	47.3		ug/L		95	76 - 120	6	20
1,3-Dichlorobenzene	ND		50.0	48.6		ug/L		97	77 - 120	1	20
1,4-Dichlorobenzene	ND		50.0	48.0		ug/L		96	78 - 124	0	20
2-Hexanone	ND		250	221		ug/L		89	65 - 127	7	15
2-Butanone (MEK)	ND		250	195		ug/L		78	57 - 140	1	20
4-Methyl-2-pentanone (MIBK)	ND		250	219		ug/L		88	71 - 125	2	35
Acetone	ND		250	181		ug/L		72	56 - 142	0	15
Benzene	ND		50.0	48.2		ug/L		96	71 - 124	5	13
Bromodichloromethane	ND		50.0	46.7		ug/L		93	80 - 122	2	15
Bromoform	ND		50.0	44.0		ug/L		88	61 - 132	2	15
Bromomethane	ND		50.0	52.6		ug/L		105	55 - 144	6	15
Carbon disulfide	ND		50.0	46.3		ug/L		93	59 - 134	2	15
Carbon tetrachloride	ND		50.0	48.7		ug/L		97	72 - 134	6	15
Chlorobenzene	16	F1	50.0	79.9	F1	ug/L		128	80 - 120	2	25
Dibromochloromethane	ND		50.0	45.4		ug/L		91	75 - 125	1	15
Chloroethane	ND		50.0	52.9		ug/L		106	69 - 136	0	15
Chloroform	0.74	J	50.0	46.8		ug/L		92	73 - 127	4	20
Chloromethane	ND		50.0	53.1		ug/L		106	68 - 124	6	15
cis-1,2-Dichloroethene	ND		50.0	47.0		ug/L		94	74 - 124	7	15
cis-1,3-Dichloropropene	ND		50.0	45.6		ug/L		91	74 - 124	4	15
Cyclohexane	ND		50.0	52.7		ug/L		105	59 - 135	4	20
Dichlorodifluoromethane	ND		50.0	61.9		ug/L		124	59 - 135	6	20
Ethylbenzene	ND		50.0	47.8		ug/L		96	77 - 123	1	15
Isopropylbenzene	ND		50.0	48.8		ug/L		98	77 - 122	1	20
Methyl acetate	ND		100	74.8		ug/L		75	74 - 133	7	20
Methyl tert-butyl ether	ND		50.0	44.7		ug/L		89	77 - 120	2	37
Methylcyclohexane	ND		50.0	52.3		ug/L		105	68 - 134	3	20
Methylene Chloride	ND		50.0	50.0		ug/L		100	75 - 124	6	15
Styrene	ND		50.0	49.0		ug/L		98	80 - 120	1	20
Tetrachloroethene	ND		50.0	49.7		ug/L		99	74 - 122	0	20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 480-198661-7 MSD
Matrix: Water
Analysis Batch: 629684

Client Sample ID: MW-3D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene	ND		50.0	47.7		ug/L		95	80 - 122	1	15
trans-1,2-Dichloroethene	ND		50.0	49.0		ug/L		98	73 - 127	2	20
trans-1,3-Dichloropropene	ND		50.0	46.1		ug/L		92	80 - 120	3	15
Trichloroethene	0.94	J	50.0	47.2		ug/L		92	74 - 123	6	16
Trichlorofluoromethane	ND		50.0	58.3		ug/L		117	62 - 150	5	20
Vinyl chloride	ND	F1	50.0	63.2		ug/L		126	65 - 133	6	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*77 - 120*
Toluene-d8 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*
Dibromofluoromethane (Surr)	*97*		*75 - 123*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-628985/1-A
Matrix: Water
Analysis Batch: 629177

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 628985

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biphenyl	ND		5.0	0.65	ug/L		06/07/22 08:17	06/08/22 15:15	1
bis (2-chloroisopropyl) ether	ND		5.0	0.52	ug/L		06/07/22 08:17	06/08/22 15:15	1
2,4,5-Trichlorophenol	ND		5.0	0.48	ug/L		06/07/22 08:17	06/08/22 15:15	1
2,4,6-Trichlorophenol	ND		5.0	0.61	ug/L		06/07/22 08:17	06/08/22 15:15	1
2,4-Dichlorophenol	ND		5.0	0.51	ug/L		06/07/22 08:17	06/08/22 15:15	1
2,4-Dimethylphenol	ND		5.0	0.50	ug/L		06/07/22 08:17	06/08/22 15:15	1
2,4-Dinitrophenol	ND		10	2.2	ug/L		06/07/22 08:17	06/08/22 15:15	1
2,4-Dinitrotoluene	ND		5.0	0.45	ug/L		06/07/22 08:17	06/08/22 15:15	1
2,6-Dinitrotoluene	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 15:15	1
2-Chloronaphthalene	ND		5.0	0.46	ug/L		06/07/22 08:17	06/08/22 15:15	1
2-Chlorophenol	ND		5.0	0.53	ug/L		06/07/22 08:17	06/08/22 15:15	1
2-Methylphenol	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 15:15	1
2-Methylnaphthalene	ND		5.0	0.60	ug/L		06/07/22 08:17	06/08/22 15:15	1
2-Nitroaniline	ND		10	0.42	ug/L		06/07/22 08:17	06/08/22 15:15	1
2-Nitrophenol	ND		5.0	0.48	ug/L		06/07/22 08:17	06/08/22 15:15	1
3,3'-Dichlorobenzidine	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 15:15	1
3-Nitroaniline	ND		10	0.48	ug/L		06/07/22 08:17	06/08/22 15:15	1
4,6-Dinitro-2-methylphenol	ND		10	2.2	ug/L		06/07/22 08:17	06/08/22 15:15	1
4-Bromophenyl phenyl ether	ND		5.0	0.45	ug/L		06/07/22 08:17	06/08/22 15:15	1
4-Chloro-3-methylphenol	ND		5.0	0.45	ug/L		06/07/22 08:17	06/08/22 15:15	1
4-Chloroaniline	ND		5.0	0.59	ug/L		06/07/22 08:17	06/08/22 15:15	1
4-Chlorophenyl phenyl ether	ND		5.0	0.35	ug/L		06/07/22 08:17	06/08/22 15:15	1
4-Methylphenol	ND		10	0.36	ug/L		06/07/22 08:17	06/08/22 15:15	1
4-Nitroaniline	ND		10	0.25	ug/L		06/07/22 08:17	06/08/22 15:15	1
4-Nitrophenol	ND		10	1.5	ug/L		06/07/22 08:17	06/08/22 15:15	1
Acenaphthene	ND		5.0	0.41	ug/L		06/07/22 08:17	06/08/22 15:15	1
Acenaphthylene	ND		5.0	0.38	ug/L		06/07/22 08:17	06/08/22 15:15	1
Acetophenone	ND		5.0	0.54	ug/L		06/07/22 08:17	06/08/22 15:15	1
Anthracene	ND		5.0	0.28	ug/L		06/07/22 08:17	06/08/22 15:15	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 480-628985/1-A
Matrix: Water
Analysis Batch: 629177

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 628985

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Atrazine	ND		5.0	0.46	ug/L		06/07/22 08:17	06/08/22 15:15	1
Benzaldehyde	ND		5.0	0.27	ug/L		06/07/22 08:17	06/08/22 15:15	1
Benzo[a]anthracene	ND		5.0	0.36	ug/L		06/07/22 08:17	06/08/22 15:15	1
Benzo[a]pyrene	ND		5.0	0.47	ug/L		06/07/22 08:17	06/08/22 15:15	1
Benzo[b]fluoranthene	ND		5.0	0.34	ug/L		06/07/22 08:17	06/08/22 15:15	1
Benzo[g,h,i]perylene	ND		5.0	0.35	ug/L		06/07/22 08:17	06/08/22 15:15	1
Benzo[k]fluoranthene	ND		5.0	0.73	ug/L		06/07/22 08:17	06/08/22 15:15	1
Bis(2-chloroethoxy)methane	ND		5.0	0.35	ug/L		06/07/22 08:17	06/08/22 15:15	1
Bis(2-chloroethyl)ether	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 15:15	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		06/07/22 08:17	06/08/22 15:15	1
Butyl benzyl phthalate	ND		5.0	1.0	ug/L		06/07/22 08:17	06/08/22 15:15	1
Caprolactam	ND		5.0	2.2	ug/L		06/07/22 08:17	06/08/22 15:15	1
Carbazole	ND		5.0	0.30	ug/L		06/07/22 08:17	06/08/22 15:15	1
Chrysene	ND		5.0	0.33	ug/L		06/07/22 08:17	06/08/22 15:15	1
Dibenz(a,h)anthracene	ND		5.0	0.42	ug/L		06/07/22 08:17	06/08/22 15:15	1
Di-n-butyl phthalate	ND		5.0	0.31	ug/L		06/07/22 08:17	06/08/22 15:15	1
Di-n-octyl phthalate	ND		5.0	0.47	ug/L		06/07/22 08:17	06/08/22 15:15	1
Dibenzofuran	ND		10	0.51	ug/L		06/07/22 08:17	06/08/22 15:15	1
Diethyl phthalate	ND		5.0	0.22	ug/L		06/07/22 08:17	06/08/22 15:15	1
Dimethyl phthalate	ND		5.0	0.36	ug/L		06/07/22 08:17	06/08/22 15:15	1
Fluoranthene	ND		5.0	0.40	ug/L		06/07/22 08:17	06/08/22 15:15	1
Fluorene	ND		5.0	0.36	ug/L		06/07/22 08:17	06/08/22 15:15	1
Hexachlorobenzene	ND		5.0	0.51	ug/L		06/07/22 08:17	06/08/22 15:15	1
Hexachlorobutadiene	ND		5.0	0.68	ug/L		06/07/22 08:17	06/08/22 15:15	1
Hexachlorocyclopentadiene	ND		5.0	0.59	ug/L		06/07/22 08:17	06/08/22 15:15	1
Hexachloroethane	ND		5.0	0.59	ug/L		06/07/22 08:17	06/08/22 15:15	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.47	ug/L		06/07/22 08:17	06/08/22 15:15	1
Isophorone	ND		5.0	0.43	ug/L		06/07/22 08:17	06/08/22 15:15	1
N-Nitrosodi-n-propylamine	ND		5.0	0.54	ug/L		06/07/22 08:17	06/08/22 15:15	1
N-Nitrosodiphenylamine	ND		5.0	0.51	ug/L		06/07/22 08:17	06/08/22 15:15	1
Naphthalene	ND		5.0	0.76	ug/L		06/07/22 08:17	06/08/22 15:15	1
Nitrobenzene	ND		5.0	0.29	ug/L		06/07/22 08:17	06/08/22 15:15	1
Pentachlorophenol	ND		10	2.2	ug/L		06/07/22 08:17	06/08/22 15:15	1
Phenanthrene	ND		5.0	0.44	ug/L		06/07/22 08:17	06/08/22 15:15	1
Phenol	ND		5.0	0.39	ug/L		06/07/22 08:17	06/08/22 15:15	1
Pyrene	ND		5.0	0.34	ug/L		06/07/22 08:17	06/08/22 15:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*79*		*46 - 120*	*06/07/22 08:17*	*06/08/22 15:15*	*1*
Phenol-d5 (Surr)	*52*		*22 - 120*	*06/07/22 08:17*	*06/08/22 15:15*	*1*
p-Terphenyl-d14 (Surr)	*99*		*60 - 148*	*06/07/22 08:17*	*06/08/22 15:15*	*1*
2,4,6-Tribromophenol (Surr)	*70*		*41 - 120*	*06/07/22 08:17*	*06/08/22 15:15*	*1*
2-Fluorobiphenyl	*90*		*48 - 120*	*06/07/22 08:17*	*06/08/22 15:15*	*1*
2-Fluorophenol (Surr)	*68*		*35 - 120*	*06/07/22 08:17*	*06/08/22 15:15*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-628985/2-A
Matrix: Water
Analysis Batch: 629177

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 628985

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biphenyl	32.0	26.3		ug/L		82	59 - 120
bis (2-chloroisopropyl) ether	32.0	25.3		ug/L		79	21 - 136
2,4,5-Trichlorophenol	32.0	30.1		ug/L		94	65 - 126
2,4,6-Trichlorophenol	32.0	29.3		ug/L		91	64 - 120
2,4-Dichlorophenol	32.0	29.2		ug/L		91	63 - 120
2,4-Dimethylphenol	32.0	28.9		ug/L		90	47 - 120
2,4-Dinitrophenol	64.0	49.5		ug/L		77	31 - 137
2,4-Dinitrotoluene	32.0	30.6		ug/L		96	69 - 120
2,6-Dinitrotoluene	32.0	28.5		ug/L		89	68 - 120
2-Chloronaphthalene	32.0	31.8		ug/L		99	58 - 120
2-Chlorophenol	32.0	26.2		ug/L		82	48 - 120
2-Methylphenol	32.0	25.9		ug/L		81	39 - 120
2-Methylnaphthalene	32.0	23.0		ug/L		72	59 - 120
2-Nitroaniline	32.0	27.4		ug/L		86	54 - 127
2-Nitrophenol	32.0	25.5		ug/L		80	52 - 125
3,3'-Dichlorobenzidine	64.0	57.8		ug/L		90	49 - 135
3-Nitroaniline	32.0	28.2		ug/L		88	51 - 120
4,6-Dinitro-2-methylphenol	64.0	54.9		ug/L		86	46 - 136
4-Bromophenyl phenyl ether	32.0	30.0		ug/L		94	65 - 120
4-Chloro-3-methylphenol	32.0	29.0		ug/L		91	61 - 123
4-Chloroaniline	32.0	27.9		ug/L		87	30 - 120
4-Chlorophenyl phenyl ether	32.0	29.8		ug/L		93	62 - 120
4-Methylphenol	32.0	26.3		ug/L		82	29 - 131
4-Nitroaniline	32.0	31.9		ug/L		100	65 - 120
4-Nitrophenol	64.0	51.1		ug/L		80	45 - 120
Acenaphthene	32.0	28.2		ug/L		88	60 - 120
Acenaphthylene	32.0	26.8		ug/L		84	63 - 120
Acetophenone	32.0	27.4		ug/L		86	45 - 120
Anthracene	32.0	30.3		ug/L		95	67 - 120
Atrazine	64.0	65.9		ug/L		103	71 - 130
Benzaldehyde	64.0	52.1		ug/L		81	10 - 140
Benzo[a]anthracene	32.0	30.0		ug/L		94	70 - 121
Benzo[a]pyrene	32.0	27.7		ug/L		87	60 - 123
Benzo[b]fluoranthene	32.0	32.2		ug/L		101	66 - 126
Benzo[g,h,i]perylene	32.0	32.6		ug/L		102	66 - 150
Benzo[k]fluoranthene	32.0	29.6		ug/L		93	65 - 124
Bis(2-chloroethoxy)methane	32.0	27.1		ug/L		85	50 - 128
Bis(2-chloroethyl)ether	32.0	25.5		ug/L		80	44 - 120
Bis(2-ethylhexyl) phthalate	32.0	30.0		ug/L		94	63 - 139
Butyl benzyl phthalate	32.0	30.9		ug/L		96	70 - 129
Caprolactam	64.0	20.8		ug/L		32	22 - 120
Carbazole	32.0	31.3		ug/L		98	66 - 123
Chrysene	32.0	29.5		ug/L		92	69 - 120
Dibenz(a,h)anthracene	32.0	30.9		ug/L		97	65 - 135
Di-n-butyl phthalate	32.0	33.0		ug/L		103	69 - 131
Di-n-octyl phthalate	32.0	30.0		ug/L		94	63 - 140
Dibenzofuran	32.0	29.1		ug/L		91	66 - 120
Diethyl phthalate	32.0	32.6		ug/L		102	59 - 127

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-628985/2-A
Matrix: Water
Analysis Batch: 629177

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 628985

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dimethyl phthalate	32.0	32.0		ug/L		100	68 - 120
Fluoranthene	32.0	31.5		ug/L		98	69 - 126
Fluorene	32.0	30.8		ug/L		96	66 - 120
Hexachlorobenzene	32.0	31.3		ug/L		98	61 - 120
Hexachlorobutadiene	32.0	20.9		ug/L		65	35 - 120
Hexachlorocyclopentadiene	32.0	16.7		ug/L		52	31 - 120
Hexachloroethane	32.0	19.6		ug/L		61	43 - 120
Indeno[1,2,3-cd]pyrene	32.0	31.5		ug/L		98	69 - 146
Isophorone	32.0	28.8		ug/L		90	55 - 120
N-Nitrosodi-n-propylamine	32.0	29.0		ug/L		90	32 - 140
N-Nitrosodiphenylamine	32.0	29.5		ug/L		92	61 - 120
Naphthalene	32.0	25.3		ug/L		79	57 - 120
Nitrobenzene	32.0	26.2		ug/L		82	53 - 123
Pentachlorophenol	64.0	54.5		ug/L		85	29 - 136
Phenanthrene	32.0	30.0		ug/L		94	68 - 120
Phenol	32.0	18.8		ug/L		59	17 - 120
Pyrene	32.0	30.1		ug/L		94	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*79*		*46 - 120*
Phenol-d5 (Surr)	*57*		*22 - 120*
p-Terphenyl-d14 (Surr)	*96*		*60 - 148*
2,4,6-Tribromophenol (Surr)	*89*		*41 - 120*
2-Fluorobiphenyl	*87*		*48 - 120*
2-Fluorophenol (Surr)	*67*		*35 - 120*

Lab Sample ID: 480-198661-7 MS
Matrix: Water
Analysis Batch: 629177

Client Sample ID: MW-3D
Prep Type: Total/NA
Prep Batch: 628985

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Biphenyl	ND		32.0	28.2		ug/L		88	57 - 120
bis (2-chloroisopropyl) ether	ND		32.0	27.6		ug/L		86	28 - 121
2,4,5-Trichlorophenol	ND		32.0	32.4		ug/L		101	65 - 126
2,4,6-Trichlorophenol	ND		32.0	32.6		ug/L		102	64 - 120
2,4-Dichlorophenol	ND		32.0	31.0		ug/L		97	48 - 132
2,4-Dimethylphenol	ND		32.0	29.8		ug/L		93	39 - 130
2,4-Dinitrophenol	ND		64.0	20.0		ug/L		31	21 - 150
2,4-Dinitrotoluene	ND		32.0	33.7		ug/L		105	54 - 138
2,6-Dinitrotoluene	ND		32.0	32.2		ug/L		101	17 - 150
2-Chloronaphthalene	ND		32.0	32.0		ug/L		100	52 - 124
2-Chlorophenol	ND		32.0	29.3		ug/L		92	48 - 120
2-Methylphenol	ND		32.0	29.1		ug/L		91	46 - 120
2-Methylnaphthalene	ND		32.0	23.7		ug/L		74	34 - 140
2-Nitroaniline	ND		32.0	31.3		ug/L		98	44 - 136
2-Nitrophenol	ND		32.0	28.0		ug/L		88	38 - 141
3,3'-Dichlorobenzidine	ND		64.0	58.1		ug/L		91	10 - 150
3-Nitroaniline	ND		32.0	30.0		ug/L		94	32 - 150

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 480-198661-7 MS
Matrix: Water
Analysis Batch: 629177

Client Sample ID: MW-3D
Prep Type: Total/NA
Prep Batch: 628985

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
4,6-Dinitro-2-methylphenol	ND		64.0	46.8		ug/L		73	38 - 150
4-Bromophenyl phenyl ether	ND		32.0	32.8		ug/L		103	63 - 126
4-Chloro-3-methylphenol	ND		32.0	30.7		ug/L		96	64 - 127
4-Chloroaniline	ND		32.0	24.1		ug/L		75	16 - 124
4-Chlorophenyl phenyl ether	ND		32.0	33.6		ug/L		105	61 - 120
4-Methylphenol	ND		32.0	29.3		ug/L		92	36 - 120
4-Nitroaniline	ND		32.0	32.5		ug/L		102	32 - 150
4-Nitrophenol	ND		64.0	51.8		ug/L		81	23 - 132
Acenaphthene	0.86	J F1	32.0	45.6	F1	ug/L		140	48 - 120
Acenaphthylene	ND		32.0	28.8		ug/L		90	63 - 120
Acetophenone	ND		32.0	30.4		ug/L		95	53 - 120
Anthracene	ND		32.0	32.0		ug/L		100	65 - 122
Atrazine	ND		64.0	61.5		ug/L		96	50 - 150
Benzaldehyde	ND		64.0	58.4		ug/L		91	10 - 150
Benzo[a]anthracene	ND		32.0	30.5		ug/L		95	43 - 124
Benzo[a]pyrene	ND		32.0	27.7		ug/L		87	23 - 125
Benzo[b]fluoranthene	ND		32.0	33.0		ug/L		103	27 - 127
Benzo[g,h,i]perylene	ND		32.0	33.0		ug/L		103	16 - 147
Benzo[k]fluoranthene	ND		32.0	30.4		ug/L		95	20 - 124
Bis(2-chloroethoxy)methane	ND		32.0	28.3		ug/L		88	44 - 128
Bis(2-chloroethyl)ether	ND		32.0	28.2		ug/L		88	45 - 120
Bis(2-ethylhexyl) phthalate	ND		32.0	29.8		ug/L		93	16 - 150
Butyl benzyl phthalate	ND		32.0	32.1		ug/L		100	51 - 140
Caprolactam	ND		64.0	23.7		ug/L		37	10 - 120
Carbazole	ND		32.0	33.3		ug/L		104	16 - 148
Chrysene	ND		32.0	30.0		ug/L		94	44 - 122
Dibenz(a,h)anthracene	ND		32.0	32.3		ug/L		101	16 - 139
Di-n-butyl phthalate	ND		32.0	33.4		ug/L		104	65 - 129
Di-n-octyl phthalate	ND		32.0	29.8		ug/L		93	16 - 150
Dibenzofuran	ND		32.0	31.6		ug/L		99	60 - 120
Diethyl phthalate	ND		32.0	35.0		ug/L		109	53 - 133
Dimethyl phthalate	ND		32.0	34.6		ug/L		108	59 - 123
Fluoranthene	ND		32.0	33.6		ug/L		105	63 - 129
Fluorene	ND		32.0	33.2		ug/L		104	62 - 120
Hexachlorobenzene	ND		32.0	32.7		ug/L		102	57 - 121
Hexachlorobutadiene	ND		32.0	20.7		ug/L		65	37 - 120
Hexachlorocyclopentadiene	ND		32.0	13.6		ug/L		43	21 - 120
Hexachloroethane	ND		32.0	21.4		ug/L		67	16 - 130
Indeno[1,2,3-cd]pyrene	ND		32.0	31.7		ug/L		99	16 - 140
Isophorone	ND		32.0	30.9		ug/L		96	48 - 133
N-Nitrosodi-n-propylamine	ND		32.0	31.6		ug/L		99	49 - 120
N-Nitrosodiphenylamine	ND		32.0	31.5		ug/L		99	39 - 138
Naphthalene	ND		32.0	26.1		ug/L		82	45 - 120
Nitrobenzene	ND		32.0	27.9		ug/L		87	45 - 123
Pentachlorophenol	ND		64.0	20.4		ug/L		32	23 - 149
Phenanthrene	ND		32.0	31.8		ug/L		99	65 - 122
Phenol	ND		32.0	22.4		ug/L		70	16 - 120
Pyrene	ND		32.0	32.1		ug/L		100	58 - 128

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 480-198661-7 MS
Matrix: Water
Analysis Batch: 629177

Client Sample ID: MW-3D
Prep Type: Total/NA
Prep Batch: 628985

Surrogate	MS %Recovery	MS Qualifier	Limits
Nitrobenzene-d5 (Surr)	*85*		*46 - 120*
Phenol-d5 (Surr)	*60*		*22 - 120*
p-Terphenyl-d14 (Surr)	*78*		*60 - 148*
2,4,6-Tribromophenol (Surr)	*93*		*41 - 120*
2-Fluorobiphenyl	*94*		*48 - 120*
2-Fluorophenol (Surr)	*72*		*35 - 120*

Lab Sample ID: 480-198661-7 MSD
Matrix: Water
Analysis Batch: 629177

Client Sample ID: MW-3D
Prep Type: Total/NA
Prep Batch: 628985

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Biphenyl	ND		32.0	26.3		ug/L		82	57 - 120	7	20
bis (2-chloroisopropyl) ether	ND		32.0	26.8		ug/L		84	28 - 121	3	24
2,4,5-Trichlorophenol	ND		32.0	32.4		ug/L		101	65 - 126	0	18
2,4,6-Trichlorophenol	ND		32.0	31.3		ug/L		98	64 - 120	4	19
2,4-Dichlorophenol	ND		32.0	30.2		ug/L		94	48 - 132	2	19
2,4-Dimethylphenol	ND		32.0	29.2		ug/L		91	39 - 130	2	42
2,4-Dinitrophenol	ND		64.0	18.0		ug/L		28	21 - 150	10	22
2,4-Dinitrotoluene	ND		32.0	33.2		ug/L		104	54 - 138	2	20
2,6-Dinitrotoluene	ND		32.0	31.6		ug/L		99	17 - 150	2	15
2-Chloronaphthalene	ND		32.0	30.8		ug/L		96	52 - 124	4	21
2-Chlorophenol	ND		32.0	27.7		ug/L		87	48 - 120	6	25
2-Methylphenol	ND		32.0	27.5		ug/L		86	46 - 120	6	27
2-Methylnaphthalene	ND		32.0	22.9		ug/L		72	34 - 140	3	21
2-Nitroaniline	ND		32.0	28.8		ug/L		90	44 - 136	8	15
2-Nitrophenol	ND		32.0	27.7		ug/L		87	38 - 141	1	18
3,3'-Dichlorobenzidine	ND		64.0	59.8		ug/L		93	10 - 150	3	25
3-Nitroaniline	ND		32.0	28.9		ug/L		90	32 - 150	4	19
4,6-Dinitro-2-methylphenol	ND		64.0	46.6		ug/L		73	38 - 150	0	15
4-Bromophenyl phenyl ether	ND		32.0	31.6		ug/L		99	63 - 126	4	15
4-Chloro-3-methylphenol	ND		32.0	29.9		ug/L		94	64 - 127	2	27
4-Chloroaniline	ND		32.0	25.9		ug/L		81	16 - 124	7	22
4-Chlorophenyl phenyl ether	ND		32.0	31.4		ug/L		98	61 - 120	7	16
4-Methylphenol	ND		32.0	27.7		ug/L		87	36 - 120	6	24
4-Nitroaniline	ND		32.0	31.2		ug/L		98	32 - 150	4	24
4-Nitrophenol	ND		64.0	49.1		ug/L		77	23 - 132	5	48
Acenaphthene	0.86	J F1	32.0	36.3		ug/L		111	48 - 120	23	24
Acenaphthylene	ND		32.0	27.6		ug/L		86	63 - 120	4	18
Acetophenone	ND		32.0	29.4		ug/L		92	53 - 120	3	20
Anthracene	ND		32.0	31.2		ug/L		97	65 - 122	3	15
Atrazine	ND		64.0	63.3		ug/L		99	50 - 150	3	20
Benzaldehyde	ND		64.0	56.3		ug/L		88	10 - 150	4	20
Benzo[a]anthracene	ND		32.0	30.0		ug/L		94	43 - 124	2	15
Benzo[a]pyrene	ND		32.0	26.1		ug/L		82	23 - 125	6	15
Benzo[b]fluoranthene	ND		32.0	31.0		ug/L		97	27 - 127	6	15
Benzo[g,h,i]perylene	ND		32.0	30.8		ug/L		96	16 - 147	7	15
Benzo[k]fluoranthene	ND		32.0	29.6		ug/L		93	20 - 124	3	22

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 480-198661-7 MSD
Matrix: Water
Analysis Batch: 629177

Client Sample ID: MW-3D
Prep Type: Total/NA
Prep Batch: 628985

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-chloroethoxy)methane	ND		32.0	28.5		ug/L		89	44 - 128	1	17
Bis(2-chloroethyl)ether	ND		32.0	27.7		ug/L		87	45 - 120	2	21
Bis(2-ethylhexyl) phthalate	ND		32.0	29.9		ug/L		93	16 - 150	0	15
Butyl benzyl phthalate	ND		32.0	32.1		ug/L		100	51 - 140	0	16
Caprolactam	ND		64.0	23.1		ug/L		36	10 - 120	2	20
Carbazole	ND		32.0	32.7		ug/L		102	16 - 148	2	20
Chrysene	ND		32.0	29.6		ug/L		93	44 - 122	1	15
Dibenz(a,h)anthracene	ND		32.0	29.4		ug/L		92	16 - 139	9	15
Di-n-butyl phthalate	ND		32.0	32.8		ug/L		103	65 - 129	2	15
Di-n-octyl phthalate	ND		32.0	29.5		ug/L		92	16 - 150	1	16
Dibenzofuran	ND		32.0	30.3		ug/L		95	60 - 120	4	15
Diethyl phthalate	ND		32.0	33.9		ug/L		106	53 - 133	3	15
Dimethyl phthalate	ND		32.0	33.2		ug/L		104	59 - 123	4	15
Fluoranthene	ND		32.0	32.8		ug/L		103	63 - 129	2	15
Fluorene	ND		32.0	31.6		ug/L		99	62 - 120	5	15
Hexachlorobenzene	ND		32.0	31.7		ug/L		99	57 - 121	3	15
Hexachlorobutadiene	ND		32.0	20.0		ug/L		62	37 - 120	3	44
Hexachlorocyclopentadiene	ND		32.0	11.8		ug/L		37	21 - 120	14	49
Hexachloroethane	ND		32.0	20.2		ug/L		63	16 - 130	6	46
Indeno[1,2,3-cd]pyrene	ND		32.0	29.3		ug/L		92	16 - 140	8	15
Isophorone	ND		32.0	30.6		ug/L		96	48 - 133	1	17
N-Nitrosodi-n-propylamine	ND		32.0	29.8		ug/L		93	49 - 120	6	31
N-Nitrosodiphenylamine	ND		32.0	31.3		ug/L		98	39 - 138	1	15
Naphthalene	ND		32.0	25.2		ug/L		79	45 - 120	4	29
Nitrobenzene	ND		32.0	27.5		ug/L		86	45 - 123	2	24
Pentachlorophenol	ND		64.0	21.0		ug/L		33	23 - 149	3	37
Phenanthrene	ND		32.0	31.0		ug/L		97	65 - 122	2	15
Phenol	ND		32.0	20.9		ug/L		65	16 - 120	7	34
Pyrene	ND		32.0	31.5		ug/L		98	58 - 128	2	19

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*84*		*46 - 120*
Phenol-d5 (Surr)	*57*		*22 - 120*
p-Terphenyl-d14 (Surr)	*76*		*60 - 148*
2,4,6-Tribromophenol (Surr)	*93*		*41 - 120*
2-Fluorobiphenyl	*92*		*48 - 120*
2-Fluorophenol (Surr)	*69*		*35 - 120*

GC/MS VOA

Analysis Batch: 629615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-198661-1	PZ-2	Total/NA	Water	8260C	
480-198661-2	PZ-3	Total/NA	Water	8260C	
480-198661-3	PZ-4	Total/NA	Water	8260C	
480-198661-4	FILTER VAULT EFF	Total/NA	Water	8260C	
480-198661-5	MW-7D	Total/NA	Water	8260C	
MB 480-629615/8	Method Blank	Total/NA	Water	8260C	
LCS 480-629615/6	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 629684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-198661-6	BLIND DUPLICATE	Total/NA	Water	8260C	
480-198661-7	MW-3D	Total/NA	Water	8260C	
MB 480-629684/7	Method Blank	Total/NA	Water	8260C	
LCS 480-629684/5	Lab Control Sample	Total/NA	Water	8260C	
480-198661-7 MS	MW-3D	Total/NA	Water	8260C	
480-198661-7 MSD	MW-3D	Total/NA	Water	8260C	

GC/MS Semi VOA

Prep Batch: 628985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-198661-1	PZ-2	Total/NA	Water	3510C	
480-198661-2	PZ-3	Total/NA	Water	3510C	
480-198661-3	PZ-4	Total/NA	Water	3510C	
480-198661-4	FILTER VAULT EFF	Total/NA	Water	3510C	
480-198661-5	MW-7D	Total/NA	Water	3510C	
480-198661-6	BLIND DUPLICATE	Total/NA	Water	3510C	
480-198661-7	MW-3D	Total/NA	Water	3510C	
MB 480-628985/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-628985/2-A	Lab Control Sample	Total/NA	Water	3510C	
480-198661-7 MS	MW-3D	Total/NA	Water	3510C	
480-198661-7 MSD	MW-3D	Total/NA	Water	3510C	

Analysis Batch: 629177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-198661-1	PZ-2	Total/NA	Water	8270D	628985
480-198661-2	PZ-3	Total/NA	Water	8270D	628985
480-198661-3	PZ-4	Total/NA	Water	8270D	628985
480-198661-4	FILTER VAULT EFF	Total/NA	Water	8270D	628985
480-198661-5	MW-7D	Total/NA	Water	8270D	628985
480-198661-6	BLIND DUPLICATE	Total/NA	Water	8270D	628985
480-198661-7	MW-3D	Total/NA	Water	8270D	628985
MB 480-628985/1-A	Method Blank	Total/NA	Water	8270D	628985
LCS 480-628985/2-A	Lab Control Sample	Total/NA	Water	8270D	628985
480-198661-7 MS	MW-3D	Total/NA	Water	8270D	628985
480-198661-7 MSD	MW-3D	Total/NA	Water	8270D	628985

Client Sample ID: PZ-2
Lab Sample ID: 480-198661-1
Date Collected: 06/03/22 10:06
Matrix: Water
Date Received: 06/03/22 15:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	629615	06/11/22 05:14	AXK	TAL BUF
Total/NA	Prep	3510C			628985	06/07/22 08:17	MS	TAL BUF
Total/NA	Analysis	8270D		1	629177	06/08/22 18:30	JMM	TAL BUF

Client Sample ID: PZ-3
Lab Sample ID: 480-198661-2
Date Collected: 06/03/22 10:48
Matrix: Water
Date Received: 06/03/22 15:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	629615	06/11/22 05:37	AXK	TAL BUF
Total/NA	Prep	3510C			628985	06/07/22 08:17	MS	TAL BUF
Total/NA	Analysis	8270D		1	629177	06/08/22 18:58	JMM	TAL BUF

Client Sample ID: PZ-4
Lab Sample ID: 480-198661-3
Date Collected: 06/03/22 11:15
Matrix: Water
Date Received: 06/03/22 15:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	629615	06/11/22 06:00	AXK	TAL BUF
Total/NA	Prep	3510C			628985	06/07/22 08:17	MS	TAL BUF
Total/NA	Analysis	8270D		1	629177	06/08/22 19:26	JMM	TAL BUF

Client Sample ID: FILTER VAULT EFF
Lab Sample ID: 480-198661-4
Date Collected: 06/03/22 11:35
Matrix: Water
Date Received: 06/03/22 15:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	629615	06/11/22 06:23	AXK	TAL BUF
Total/NA	Prep	3510C			628985	06/07/22 08:19	MS	TAL BUF
Total/NA	Analysis	8270D		1	629177	06/08/22 19:54	JMM	TAL BUF

Client Sample ID: MW-7D
Lab Sample ID: 480-198661-5
Date Collected: 06/03/22 14:20
Matrix: Water
Date Received: 06/03/22 15:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	629615	06/11/22 06:47	AXK	TAL BUF
Total/NA	Prep	3510C			628985	06/07/22 08:19	MS	TAL BUF
Total/NA	Analysis	8270D		200	629177	06/08/22 20:22	JMM	TAL BUF

Client Sample ID: BLIND DUPLICATE
Lab Sample ID: 480-198661-6
Date Collected: 06/03/22 00:00
Matrix: Water
Date Received: 06/03/22 15:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	629684	06/11/22 13:33	CR	TAL BUF

Lab Chronicle

Client: Golder Associates Inc.
Job ID: 480-198661-1
Project/Site: Vandemark Chemical site

Client Sample ID: BLIND DUPLICATE
Lab Sample ID: 480-198661-6

Date Collected: 06/03/22 00:00
Matrix: Water
Date Received: 06/03/22 15:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			628985	06/07/22 08:37	MS	TAL BUF
Total/NA	Analysis	8270D		200	629177	06/08/22 20:49	JMM	TAL BUF

Client Sample ID: MW-3D
Lab Sample ID: 480-198661-7

Date Collected: 06/03/22 13:06
Matrix: Water
Date Received: 06/03/22 15:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	629684	06/11/22 13:56	CR	TAL BUF
Total/NA	Prep	3510C			628985	06/07/22 08:17	MS	TAL BUF
Total/NA	Analysis	8270D		1	629177	06/08/22 17:07	JMM	TAL BUF

Laboratory References:

TAL BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: Golder Associates Inc.
Job ID: 480-198661-1
Project/Site: Vandemark Chemical site

Laboratory: Eurofins Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-23

Method Summary

Client: Golder Associates Inc.
Job ID: 480-198661-1
Project/Site: Vandemark Chemical site

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL BUF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
5030C	Purge and Trap	SW846	TAL BUF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Golder Associates Inc.
Job ID: 480-198661-1
Project/Site: Vandemark Chemical site

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-198661-1	PZ-2	Water	06/03/22 10:06	06/03/22 15:45
480-198661-2	PZ-3	Water	06/03/22 10:48	06/03/22 15:45
480-198661-3	PZ-4	Water	06/03/22 11:15	06/03/22 15:45
480-198661-4	FILTER VAULT EFF	Water	06/03/22 11:35	06/03/22 15:45
480-198661-5	MW-7D	Water	06/03/22 14:20	06/03/22 15:45
480-198661-6	BLIND DUPLICATE	Water	06/03/22 00:00	06/03/22 15:45
480-198661-7	MW-3D	Water	06/03/22 13:06	06/03/22 15:45

Eurofins Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: JOSH VERNOY	Lab PM: Fischer, Brian J	Carrier Tracking No(s):	COC No: 480-174432-15389.1
Client Contact: Mr. Patrick Martin	Phone: 716-352-9278	E-Mail: Brian.Fischer@et.eurofinsus.com	State of Origin:	Page: Page 1 of 1
Company: Golder Associates Inc.	PWSID:			Job #:
Address: 455 Commerce Dr. Suite 8	Due Date Requested:			
City: Buffalo	TAT Requested (days):			
State, Zip: NY, 14228	Compliance Project: Δ Yes Δ No			
Phone: 716-204-5880(Tel)	PO #: 093-89168			
Email: patrick_martin@golder.com	WO #:			
Project Name: Vandemark Chemical site	Project #: 48010016			
Site: Lockport, NY	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270D - TCL SVOA - OLM04.2	8260C - TCL list OLM04.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	A		
PZ-2	6/3/22	1006	G	Water	N	N	2	3		
PZ-3		1048		Water						
PZ-4		1115		Water						
Filter Vault Eff		1135		Water						
MW-7D		1420		Water						
MW-3D MS		1306		Water		Y				
MW-3D MSD		1306		Water		Y				
Blind Duplicate		-		Water		N				
MW-3D		1306		Water		Y				

480-198661 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	6/3/22 @ 1545	WSP-Golder	Anton Grunsky	6/3/22 15:45	Eurofins
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.3.7 #1 ICE

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Golder Associates Inc.

Job Number: 480-198661-1

Login Number: 198661

List Source: Eurofins Buffalo

List Number: 1

Creator: Yeager, Brian A

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, 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.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers 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	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	WSP-GOLDER
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	