



Groundwater Monitoring Report-Year 1

**Long-Term Stewardship Plan:
OU-1 through OU-5
Former GM Wilmington Assembly Plant
(DE-1149)
Wilmington, Delaware**

RACER Trust

November 09, 2023

→ The Power of Commitment

Contents

Acronyms	iv
1. Introduction	1
1.1 Scope	1
1.2 Background	1
1.3 Geology	2
1.4 Hydrogeology	2
2. Groundwater Monitoring Activities	3
2.1 Monitoring Well Condition Assessment	3
2.2 Static Water Levels	3
2.3 Sample Collection and Handling	4
2.3.1 Sample Collection	4
2.3.2 Decontamination Procedures	4
2.3.3 Management of Investigation-Derived Waste	4
2.4 Data Validation	5
3. Groundwater Monitoring Results	5
3.1 Operable Unit 2 Results	5
3.2 Operable Unit 4 Results	6
3.2.1 Operable Unit 4 SVOC Results	6
3.2.2 Operable Unit 4 VOC Results	6
3.3 Operable Unit 5 Results	6
3.3.1 Operable Unit 5 TCE and Benzene Results	6
3.3.2 Operable Unit 5 Metals Results	6
3.3.3 Ecological Impacts to Surface Water	7
3.3.3.1 Estimated Surface Water Concentrations	7
4. Operable Unit 5 Cap Inspection	8
4.1 Year 1 Inspection	8
5. Summary, Conclusions, and Recommendations	8
5.1 Year 1 Monitoring Summary	8
5.2 Monitoring Plan Adjustments	9
5.2.1 Monitoring Plan: Step Up	9
5.2.2 Monitoring Plan: Step Down	9
5.3 Additional Actions	9
5.3.1 Repairs	9
5.3.2 Well Redevelopment	9
6. References	9

Table index

Table 1.1	Operable Unit Description	1
Table 2.1	Estimated Surface Water Concentrations	7
Table 1	Groundwater Elevation Data	
Table 2	Groundwater Analytical Results - Volatile Organic Compound Detections	
Table 3	Groundwater Analytical Results - Semi-Volatile Organic Compound Detections	
Table 4	Groundwater Analytical Results - Metal Detections	

Figure index

Figure 1	Site Location Map
Figure 2	Location of Operable Units
Figure 3.1	OU-2 Groundwater Monitoring Locations
Figure 3.2	OU-2 Groundwater VOC Exceedances
Figure 3.3	OU-2 Groundwater Contours
Figure 4.1	OU-4 Groundwater Monitoring Locations
Figure 4.2	OU-4 Groundwater VOC Exceedances
Figure 4.3	OU-4 Groundwater SVOC Exceedances
Figure 5.1	OU-5 Groundwater Monitoring Locations
Figure 5.2	OU-5 Groundwater VOC Exceedances
Figure 5.3	OU-5 Groundwater Metal Exceedances
Figure 5.4	OU-5 Groundwater Contours

Appendices

Appendix A	Well Completion Reports
Appendix B	Low Flow Sampling Purge Logs
Appendix C	Level 2 Laboratory Analytical Reports
Appendix D	Data Validation Memo
Appendix E	Historical Groundwater Analytical Results
Appendix F	OU-5 Groundwater Discharge to Little Mill Creek
Appendix G	OU-5 Cap Inspection Form

Acronyms

µg/l	micrograms per liter
AST	aboveground storage tank
BGS	below ground surface
CFC-11	trichlorofluoromethane
CLP	Contract Laboratory Program
COCs	constituents of concern
DNREC	Department of Natural Resources and Environmental Control
DO	dissolved oxygen
DOT	Department of Transportation
CFR	Code of Federal Regulations
GHD	GHD Services Inc.
GM	General Motors Corporation
HSCA	Hazardous Substance Cleanup Act
IDW	investigative-derived waste
LTS	Long-Term Stewardship Plan
MLC	Motors Liquidation Company
ORP	oxidation reduction potential
OU	Operable Unit
PCE	tetrachloroethene
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
RACER	Revitalizing Auto Communities Environmental Response
RCRA	Resource Recovery and Conservation
RI	Remedial Investigation
SVOCs	semi-volatile organic compounds
TCE	trichloroethylene
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VOCs	volatile organic compounds

1. Introduction

On behalf of the Revitalizing Auto Communities Environmental Response Trust (RACER Trust), GHD Services Inc. (GHD) has prepared this Groundwater Monitoring Report - Year 1 (Report) for the former General Motors Corporation (GM) Wilmington Assembly Plant (DE-1149) located at 851 and 1025 Boxwood Road in Wilmington, New Castle County, Delaware (Site), as shown on Figure 1. Historical environmental investigations have identified impacts to environmental media resulting from operations at the Site. A Long-Term Stewardship Plan (LTS) was developed and submitted to the Delaware Department of Natural Resources and Environmental Control (DNREC) on January 14, 2022, to manage post-remedial actions of soil and groundwater in the five operable units (OUs) at the Site where cleanup activities have been completed (OU-1 to OU-5; GHD 2022).

The Site was historically divided into six OUs (OU-1 to OU-6; see Figure 2). Site investigations have been conducted since at least 1990 on the six OUs. OU-6 is excluded from the LTS because the 2015 Remedial Investigation (RI) Report did not identify known or potential releases from historical operations in OU-6 (Conestoga-Rovers & Associates, 2015). A brief description of the OUs is provided in Table 1 below.

Table 1.1 Operable Unit Description

Operable Units	Description
OU-1	The pump house and aboveground storage tanks (AST) L through Tank O in the AST containment area.
OU-2	Large AST Area/Truck Unloading Rack and surrounding areas.
OU-3	Main Assembly Plant Area.
OU-4	Former Petroleum Dispensing and underground storage tank (UST).
OU-5	Former Test Track Area.
OU-6	Wooded Area adjacent to Little Mill Creek (not subject to LTS).

1.1 Scope

The LTS includes the impacted area in OU-1 (soil) and OU-2, OU-3, OU-4, and OU-5 (soil and groundwater). The LTS specifies no reduction in the groundwater monitoring program based on results during the first 5 years. Thereafter, if the groundwater data indicate that there are no significant variations in groundwater, RACER Trust may present a written request, including technical rationale, to DNREC to modify the scope of the groundwater monitoring plan. This report documents the results from Year 1 of the first 5 years of monitoring and recommendations for future action, as appropriate.

1.2 Background

The Site consists of real property located at 851 and 1025 Boxwood Road, Wilmington, New Castle County, Delaware. It comprises two tax parcels totaling approximately 142 acres of land (which includes the area of OU-6) which, formerly included a 3.2 million square foot main assembly building, wastewater treatment plant, pump houses, and powerhouse. GM developed the Site from 1945 to 1947 and used it for automobile assembly operations until July 2009. GM's automobile assembly operations included storage and use of petroleum products for fueling and heating, painting, wastewater treatment, parts cleaning, and hazardous waste storage. Each of these operations used various chemicals. Releases are believed to have occurred at the Site as a result of GM's operations, which have subsequently impacted the soil at and groundwater beneath the Site. DNREC removed the Site from Resource Recovery and Conservation Act (RCRA) in the early 2000s and placed it into the Brownfield/Superfund program which is governed by the Hazardous Substance Cleanup Act (HSCA).

During GM's 2009 bankruptcy, certain operating assets of GM were sold to the newly formed entity known as General Motors LLC. Assets that were not sold to General Motors LLC, including this Site, remained the property of GM, which by then had changed its name to Motors Liquidation Company (MLC). In its capacity as debtor in possession in the bankruptcy case, MLC sold the Site to Fisker Automotive, Inc. (Fisker) in July 2010. On March 31, 2011, the RACER Trust became effective, and since then RACER Trust has been conducting and managing cleanups at several dozen former GM properties, including this Site.

Between July 2009 and April 2014, the Site remained largely idle while Fisker evaluated opportunities to use the plant for assembly of Fisker automobiles. The Site was purchased by Wanxiang Delaware Real Estate Holdings (Wanxiang) in April 2014 as part of a purchase by Wanxiang of Fisker's assets. In October 2017, Harvey, Hanna & Associates, Inc.'s special purpose entity, Boxwood Industrial Park, LLC (Boxwood), purchased the Site from Wanxiang. On November 7, 2019, Dermody Properties' special purpose entity DPIF2 DE 1 New Castle, LLC (Dermody) purchased portions of the Site (OU-1, OU-2, and OU-3) from Boxwood. On January 29, 2020, Dermody purchased additional portions of the Site (OU-4 and OU-5) from Boxwood.

Dermody completed Site redevelopment activities in September 2021, which included an approximately 820,000 square foot logistics building in OU-1, OU-2, and OU-3 and an approximately 220,000 square foot warehouse building in OU-3 and OU-5. No buildings are currently planned in the OU-4 area, which has been developed as parking or landscaped areas; however, OU-4 may be developed with additional buildings or other improvements in the future. Dermody also reconfigured the Site into two tax parcels by legal subdivision, whereas there were formerly five total. DPIF2 DE 1 New Castle, LLC currently owns Lot 1 which contains the approximately 820,000 square foot building and associated improvements, and DPIF2 DE2 New Castle2, LLC currently owns Lot 2 which contains the approximately 220,000 square foot building and associated improvements.

1.3 Geology

Previous subsurface investigations completed at the Site have indicated that soils at the site consist primarily of fill underlain by unconsolidated sediments consisting primarily of silty sands and clays, from below the paved surface to a depth of approximately 8 to 10 feet below ground surface (ft. bgs) (BGS; Conestoga-Rovers & Associates, 2015). Gravel lenses are seen ranging in thickness from 1 to 10 feet at varying depths across the Site. Historical soil boring logs indicate a continuous sand layer ranging from 16 to 30 feet in thickness with starting depths ranging from approximately 7.8 to 11.5 ft. bgs and extending to depths ranging from approximately 23.8 to 40 ft. bgs¹. The historical logs also indicate that the sand layer is underlain by reddish brown clay of an undetermined thickness.

1.4 Hydrogeology

Groundwater was historically observed at an average depth of approximately 12 ft. bgs¹ during Site investigations from 2011 to 2013. The now-demolished main assembly building appeared to have created a groundwater divide at the Site, with groundwater on the east side flowing to the east toward Little Mill Creek and groundwater on the west side flowing to the west towards Red Clay Creek.

Historically, surface water flow across the Site was directed to the on-Site storm sewer system, which discharged to Little Mill Creek at Outfall 001. The redevelopment of the Site did not change the storm sewer system point of discharge to Little Mill Creek; however, some surface water flow is now first directed to three bio-basins before entering the on-Site storm sewer system which connects to Outfall 001. With the exception of Little Mill Creek which is located in OU-6, there were historically no surface water bodies or waterways (streams, rivers, lakes, etc.), including associated wetlands, floodplains, and riparian zones, present on or immediately adjacent to the Site.

Little Mill Creek is located in the wooded area along the eastern property boundary. Approximately 1,000 ft of this creek is located within the Site property. Little Mill Creek discharges to the Christina River approximately 1 mile downstream. Red Clay Creek is located approximately 1.1 miles west of the Site and also discharges to the Christina

¹ Based on the ground surface elevation at the site prior to redevelopment activities. Redevelopment at the site included regrading.

River. The Christina River is the major river draining this portion of New Castle County. There are no lakes or significant ponds within one mile of the Site.

2. Groundwater Monitoring Activities

As described in the LTS, groundwater monitoring is performed specific to each OU. Perimeter monitoring wells with historically low concentrations of constituents of concern (COCs) within OU-2, OU-4, and OU-5 were selected for annual monitoring. These wells were selected to monitor for the potential for impacted groundwater to be leaving the Site. A further description of the wells and analytes to be monitored is provided below.

- OU-2: Groundwater monitoring wells MW-8R, MW-9R and MW-19R², shown on Figure 3.1, were selected. These wells are located on the perimeter of OU-2, southwest of the source area. Volatile organic compounds (VOCs) were selected as the analytical parameters to be monitored in OU-2.
- OU-4: Groundwater monitoring wells MW-36S, MW-36D, DA-MW-40, DA-MW-41, and MW-50R³, shown on Figure 4.1, were selected. DA-MW-40 and DA-MW-41 have had low to non-detect concentrations of COCs and are located off-Site to the east of OU-4. VOCs and semi-volatile organic compounds (SVOCs) were selected as analytical parameters to be monitored in OU-4.
- OU-5: Groundwater monitoring wells MW-48R, MW-109R, MW-112 and MW-113R⁴, shown on Figure 5.1, were selected. Metals were selected as the analytical parameters to be monitored in OU-5, with samples from MW-48R also analyzed for benzene and trichloroethylene (TCE).

2.1 Monitoring Well Condition Assessment

A monitoring well condition assessment was conducted to verify the current condition of the LTS monitoring wells in OU-2, OU-4, and OU-5. The monitoring well assessment, consisting of a visual inspection, water level measurement, and well depth sounding was performed on January 9, 2023.

The well condition assessment identified the following deficiencies that need to be addressed:

- MW-36S (OU-4): The polyvinyl chloride (PVC) slip cap on the top of the well riser needs to be removed and replaced with a well plug, which was completed during groundwater monitoring.
- MW-109R (OU-5): The concrete well pad is loose and needs to be replaced. This repair will be made concurrently with the abandonment of off-Site monitoring wells no longer sampled in OU-4.⁵

The condition of the remaining LTS monitoring wells was good, with no additional deficiencies identified.

2.2 Static Water Levels

As detailed in the LTS, static water levels were collected from the LTS wells prior to sample collection. Specifically, water levels were measured from the following monitoring wells:

- OU-2: MW-8R, MW-9R and MW-19R;
- OU-4: MW-36S, MW-36D, and MW-50R; and

² OU-2 monitoring wells MW-8R, MW-9R, and MW-19R were installed as replacement wells for MW-8, MW-9, and MW-19, respectively, during the property redevelopment.

³ OU-4 monitoring well MW-50R was installed as a replacement for well MW-50 during the property redevelopment. The well completion report for MW-50R is included in Appendix A.

⁴ OU-5 monitoring wells MW-48R, MW-109R, and MW-113R were installed as replacement wells for MW-48, MW-109, and MW-113, respectively, during the property redevelopment. MW-112 was damaged during site redevelopment activities and was repaired and raised to the current grade. Well completion reports for MW-48R, MW-109R and MW-113R are included in Appendix A.

⁵ RACER Trust is currently in the process of obtaining site access with the property owners adjacent to OU-4 to abandon the no longer needed (e.g., not in the LTS) monitoring wells.

- OU-5: MW-28R⁶, MW-48R, MW-109R, MW-112 and MW-113R.

Static water levels were collected utilizing an oil-water interface probe. Depth to water and total well depth, recorded to the nearest hundredth of a foot, were collected from each monitoring well (utilizing the top of the well riser as a reference point). Water levels are presented in Table 1. Groundwater elevations in each OU are presented in Figures 3.1, 4.1, and 5.1 and groundwater elevation contours for OU-2 and OU-5 are presented in Figures 3.3 and 5.4, respectively. Groundwater flow direction in OU-2 is estimated to be to the southeast. Previous groundwater flow direction in OU-2, prior to redevelopment activities, was generally to the southwest. Groundwater flow direction in OU-5 is estimated to be to the northeast, similar to groundwater flow direction prior to redevelopment.

Water levels were unable to be collected from OU-4 off-Site monitoring wells DA-MW-40 and DA-MW-41 because RACER Trust has not yet been successful in obtaining access to this property, or the other properties with historical off-Site OU-4 monitoring locations. In addition, the LTS proposed the installation of a new monitoring well in OU-4, MW-51, to replace MW-49 that was removed as part of the Site redevelopment activities. MW-51 will be installed concurrently with abandonment of non-LTS wells in OU-4. Once installed, MW-51 will be gauged annually for static water levels and potential presence of LNAPL.

2.3 Sample Collection and Handling

Groundwater samples were collected and analyzed in accordance with the LTS. Groundwater samples collected from monitoring wells in each OU were analyzed for the following parameters:

- OU-2: VOCs via United States Environmental Protection Agency (USEPA) SW-846 Method 8260;
- OU-4: VOCs and SVOCs via USEPA SW-846 Methods 8260 and 8270, respectively; and
- OU-5: Total metals with mercury via USEPA SW-846 Methods 6020 and 7470, dissolved manganese via USEPA SW-846 Method 6020. In addition, samples collected from MW-48R were also analyzed for benzene and TCE.

2.3.1 Sample Collection

Groundwater samples were collected by GHD field staff from January 10 - 12, 2023. RACER Trust held completion of this report in hopes of gaining access to the off-Site monitoring wells. Samples were collected using low flow sampling techniques. Prior to groundwater sample collection, each monitoring well was purged until field parameters (pH, specific conductivity, temperature, dissolved oxygen (DO), oxidation reduction potential (ORP), and turbidity) stabilized. Low-flow purging logs for each monitoring well are included as Appendix B.

All samples were placed in laboratory-supplied sample containers and labelled with the sample identification number, date and time of sampling, the type of preservative used, the sampler's initials, and the types of analyses to be performed. The groundwater sample containers were placed in an iced cooler and transported under Chain-of-Custody to Eurofins Environment Testing Northeast, LLC of Edison, New Jersey (Eurofins). Samples were transported to the laboratory by a Eurofins courier.

2.3.2 Decontamination Procedures

Non-dedicated sampling equipment was decontaminated before each use. Decontamination rinsate was placed in a labelled 55-gallon United States Department of Transportation (DOT)-approved drum.

2.3.3 Management of Investigation-Derived Waste

Investigative-derived waste (IDW) generated during the groundwater sampling activities included purge water, decontamination rinsate, and expendable items such as gloves and tubing. The IDW was collected in DOT-approved

⁶ Only water levels are collected from MW-28R as part of the LTS. Analytical samples are not collected from this well.

55-gallon closed top drums. The IDW will be characterized and disposed of in accordance with federal and state requirements by RACER Trust.

2.4 Data Validation

Analytical results for groundwater samples collected during the Year 1 monitoring event are summarized on Tables 2 - 4. Analytical data were assessed by GHD's project chemist, and a full data validation performed. Full Contract Laboratory Program equivalent raw data deliverables were provided by the laboratory. Evaluation of the data was based on information obtained from the finished data sheets, raw data, Chain-of-Custody forms, calibration data, blank data, recovery data from surrogate spikes/laboratory control samples/matrix spike samples, and field Quality Assurance/Quality Control (QA/QC) samples. The assessment of analytical and in house data included checks for data consistency (by observing comparability of duplicate analyses), adherence to accuracy and precision criteria, and transmittal errors. The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

- National Functional Guidelines for Organic Superfund Methods Data Review, USEPA, 540-R-20-005, November 2020; and
- National Functional Guidelines for Inorganic Superfund Methods Data Review, USEPA, 542-R-20-006, November 2020.

The data validation determined the data to be acceptable, and data qualifiers were applied (as necessary). Appendix C contains the Level 2 analytical laboratory reports⁷. Appendix D includes the data validation memorandum. The validated groundwater analytical results are summarized in Tables 2 - 4.

3. Groundwater Monitoring Results

Following data validation, groundwater monitoring results were compared to the most recent (April 2023) DNREC HSCA screening level for groundwater. As stated in the LTS, groundwater results were also compared to the historical data for that compound. Year 1 groundwater monitoring data is presented on Tables 2 - 4. Historical groundwater data is presented in Appendix E. The following sections discuss groundwater monitoring results for each OU.

3.1 Operable Unit 2 Results

Samples collected from monitoring wells in OU-2 (MW-8R, MW-9R, and MW-19R) were analyzed for VOCs, as described above in Section 2. VOC data are summarized in Table 2. Groundwater samples from MW-8R and MW-9R did not exceed HSCA screening levels, with MW-8R detecting a concentration of tetrachloroethene (PCE) at 0.42 micrograms per liter (µg/l), and a concentration of 2.1 µg/l of trichlorofluoromethane (CFC-11), and MW-9R detecting CFC-11 at a concentration of 0.33 µg/l. The primary and duplicate samples collected from MW-19R had low-level VOC detections that exceeded the HSCA screening level for 1,2,4-trimethylbenzene (7.4 µg/l), ethylbenzene (3.3 µg/l), and vinyl chloride (0.45 µg/l). Historically, 1,2,4-trimethylbenzene, ethylbenzene, and vinyl chloride were mostly non-detect at MW-19; however, MW-19R is a replacement well installed approximately 230 ft west of the original MW-19, so a comparison to historical maximum concentrations is more appropriate (see Appendix E). The concentrations exceeding HSCA screening levels are multiple orders of magnitude below the historical maximum concentrations within OU-2 for 1,2,4-trimethylbenzene (180 µg/l), ethylbenzene (22,000 µg/l), and vinyl chloride (2.5 µg/l; see Table 2).

⁷ Given the large file size, the Level 4 analytical laboratory reports have not been included with this Year 1 Monitoring Report. The Level 2 analytical reports have been included as Appendix C.

3.2 Operable Unit 4 Results

Groundwater samples in OU-4 were collected from monitoring wells MW-36S, MW-36D, and MW-50R. As described in Section 2, samples were collected from these wells and analyzed for SVOCs and VOCs.

3.2.1 Operable Unit 4 SVOC Results

The sample collected from MW-50R was non-detect for SVOCs. An apparent odor, a slight sheen in the purge water, and an indication of free product by the oil/water interface probe was detected in MW-36S. Samples collected from MW-36S (primary and duplicate) exceeded the HSCA screening levels for 2-methylnaphthalene (64 µg/l), biphenyl (5.0 µg/l), dibenzofuran (1.9 µg/l), and naphthalene (92 µg/l). The sample from MW-36D exceeded the HSCA screening levels for 2-methylnaphthalene (7.3 µg/l) and naphthalene (57 µg/l). The concentrations exceeding HSCA screening levels are all less than the historical maximum concentrations for these compounds within OU-4 and at the individual monitoring wells MW-36S and MW-36D (see Table 3 and Appendix E).

3.2.2 Operable Unit 4 VOC Results

The groundwater sample collected from MW-50R was non-detect for VOCs. Groundwater samples from MW-36S and MW-36D exceeded HSCA screening levels for 1,2,4-trimethylbenzene (160 µg/l and 65 µg/l, respectively), benzene (140 µg/l and 37 µg/l, respectively), ethylbenzene (340 µg/l and 210 µg/l, respectively), and xylenes (480 µg/l and 480 µg/l, respectively). In addition, the sample collected from MW-36D also exceeded the HSCA screening level for toluene (130 µg/l). All VOC screening level exceedances in OU-4 were less than the historical maximum concentrations for these compounds within OU-4 and at the individual monitoring wells MW-36S and MW-36D (see Table 2 and Appendix E).

3.3 Operable Unit 5 Results

Groundwater samples in OU-5 were collected from monitoring wells MW-48R, MW-109R, MW-112 and MW-113R. As described in Section 2, samples were collected from these wells were analyzed for the following parameters:

- total metals and dissolved manganese: MW-48R, MW-109R, MW-112, and MW-113R; and
- benzene and TCE: MW-48R.

3.3.1 Operable Unit 5 TCE and Benzene Results

The groundwater sample collected from MW-48R was non-detect for benzene but exceeded HSCA screening level for TCE (3.8 µg/l). Historically, benzene and trichloroethene have been non-detect at MW-48 (see Appendix E). The TCE exceedance was slightly higher than the maximum historical TCE concentration of 3.6 µg/l from within OU-5 (see Table 2).

3.3.2 Operable Unit 5 Metals Results

The groundwater samples collected from MW-48R (parent and duplicate) exceeded HSCA screening levels for cobalt (7.3 µg/l), iron (1,950 µg/l) and total and dissolved manganese (7,170 and 7,910 µg/l, respectively). Cobalt and iron exceedances were less than the historical maximum concentrations for these compounds within OU-5 and at MW-48. Total and dissolved manganese exceedances were slightly higher than the historical maximum concentrations for these compounds within OU-5 (6,390 and 6,510 µg/l, respectively; see Table 4) and at MW-48R (6,050 and 6,370 µg/l, respectively; see Appendix E).

The groundwater sample collected from MW-109R exceeded HSCA screening levels for antimony (1.9 µg/l), arsenic (1.6 µg/l), cobalt (2.8 µg/l), iron (4,170 µg/l), total and dissolved manganese (125 and 67 µg/l, respectively), and mercury (0.10 µg/l). Exceedances of arsenic, cobalt, iron, and total and dissolved manganese were greater than the historical maximum concentrations at MW-109 (see Appendix E), but less than the historical maximum within OU-5

(see Table 4). Exceedances of antimony and mercury were greater than the historical maximum concentrations within OU-5, and both compounds were previously non-detect at MW-109.

The groundwater sample collected from MW-112 exceeded HSCA screening levels for arsenic (1 µg/l), cobalt (7.4 µg/l), iron (3,500 µg/l), and total and dissolved manganese (1,270 and 1,170 µg/l, respectively). Exceedances of arsenic, cobalt, and total and dissolved manganese were less than the historical maximum concentrations for these compounds within OU-5 (see Table 4) and at MW-112 while the exceedance of iron was less than the OU-5 historical maximum (see Appendix E), but greater than the historical maximum at MW-112.

The groundwater sample collected from MW-113R exceeded HSCA screening levels for cobalt (17.7 µg/l) and total and dissolved manganese (4,720 and 4,850 µg/l, respectively). These exceedances were less than the historical maximum within OU-5 (see Table 4) but slightly greater than the historical maximum concentrations at MW-113 (see Appendix E).

All metals exceedances in OU-5 wells were below maximum historical concentrations for the Site (see Table 4).

Concentrations at certain wells (MW-48R and MW-109R) were near historical levels in the OU. When reviewing the well installation logs for these replacement wells, the rate and volume of purging as part of well development was minimal. The elevated concentrations are likely results of an undeveloped (or improperly developed) well. It may be appropriate to re-develop these (and other) replacement well prior to the next sampling event.

3.3.3 Ecological Impacts to Surface Water

An evaluation of mass loading into the nearby stream, Little Mill Creek, was performed for constituents that exceeded the HSCA Ecological Surface Water Fresh (Eco Fresh) Screening Levels in groundwater. Groundwater data screened against HSCA Eco Fresh Screening Levels are presented in Appendix E. The mass loading evaluation is included in Appendix F. The following section summarizes the evaluation of the potential ecological impacts of OU-5 groundwater to surface water in Little Mill Creek by conservatively calculating surface water concentrations using the maximum detected groundwater concentrations.

3.3.3.1 Estimated Surface Water Concentrations

Surface water concentrations were conservatively calculated for the metals that exceeded HSCA Eco Fresh Screening Levels in groundwater from the OU-5 perimeter wells MW-48R, MW-109R, MW-112, and MW-113R, as presented below in Table 2 and detailed in Appendix F. The concentrations are significantly below the respective HSCA Eco Fresh Screening Levels.

Table 2.1 *Estimated Surface Water Concentrations*

Constituent	HSCA Eco Fresh Screening Level (ug/L)	Maximum Concentration (ug/L)	Estimated Surface Water Concentration (ug/L)
Aluminum	87	1,920	0.79
Barium	4	327	0.14
Copper	9	16.9	7.0x10 ⁻³
Iron	300	4,170	1.73
Lead	2.5	11.9	4.9x10 ⁻³
Manganese	120	7,910	3.3
Mercury	0.026	0.10	4.1x10 ⁻⁵

Based on these estimated surface water concentrations, even though mass loading from groundwater to Little Mill Creek surface water may be occurring, aquatic life in Little Mill Creek is not impacted by the migration of metals from OU-5 groundwater.

4. Operable Unit 5 Cap Inspection

The Final Plan of Remedial Action for OU-5 was approved in August 2019, which included a temporary asphalt cap over the Test Track Area that required quarterly cap inspections until a permanent cap was constructed. Quarterly cap inspections of the temporary cap ceased in December 2020 as requested in a December 4, 2020, letter to DNREC and approved by DNREC via email on December 14, 2020, due to ongoing redevelopment activities in OU-5. Dermody completed installation of the permanent cap in August 2021 consisting of a concrete building slab, landscaping, and concrete or pavement parking lots/roadways as documented in BrightFields' November 8, 2021, *Documentation of Cap Placement* letter (BrightFields 2021).

As described in the LTS, annual permanent cap inspections will be performed. The annual inspection will consist of a visual inspection of the cap covers (concrete slab, concrete and paved parking lots/roadways, landscaped areas) for potential breaches that could result in chronic direct contact exposure to the soil beneath the cap.

4.1 Year 1 Inspection

Inspection of the OU-5 permanent cap was completed on January 6, 2023. The cap inspection form is included as Appendix G. The cap inspection indicated the cap to be in overall good condition. No deficiencies or corrective actions were identified from the inspection.

5. Summary, Conclusions, and Recommendations

The following sections present a summary of the Year 1 Groundwater Monitoring Event, and a discussion of and recommendations on potential future monitoring plan adjustments.

5.1 Year 1 Monitoring Summary

As detailed above, this Year 1 Groundwater Monitoring Report describes implementation of Year 1 (January 2023) of the LTS for the Site. As detailed in the LTS, a well condition assessment was performed, water levels measured, and analytical samples were collected from select monitoring wells in OU-2, OU-4, and OU-5. The well inspection indicated that minor repairs are needed to monitoring wells MW-36S (OU-4), completed in the field, and MW-109R (OU-5), to be completed in the future concurrently with the abandonment of OU-4 off-Site monitoring wells.

Analytical data generated from the Year 1 Groundwater Monitoring Event indicated certain concentrations that exceed the HSCA groundwater screening levels in the LTS wells, except for MW-50R. Compounds that exceeded HSCA groundwater screening levels did not exceed the respective historical maximums within OU-2 and OU-4. However, in OU-5, exceedances of TCE and certain metals were greater than the historical maximum within OU-5 at MW-48R (TCE and metals) and MW-109R (metals only). Elevated concentrations in these wells may be a result of improperly developed wells, and as such, it is recommended to redevelop these wells prior to the next sampling event. As stated in the LTS, these wells are monitored to determine whether concentrations are increasing. Because the Year 1 results are within the range of or slightly greater than historical concentrations, no increasing trends are identified. At the completion of the 5-year monitoring period, the LTS groundwater data will be evaluated, and adjustments may be proposed to the monitoring plan (see Section 5.2), as appropriate.

In addition to groundwater monitoring, an inspection of the cap in OU-5 was performed (Appendix G). The inspection identified the cap to be in good condition. No maintenance or repairs to the cap are currently warranted.

5.2 Monitoring Plan Adjustments

The groundwater monitoring plan duration was set in the LTS as 5 years in total (four additional sampling events). Analytical data from the sampling events will be compared to historical data to determine if constituent concentrations are increasing or migrating. After five sampling events the monitoring plan will be adjusted, as appropriate, to increase or decrease frequency of sampling, as described in the following sections.

5.2.1 Monitoring Plan: Step Up

As stated in the LTS, following the completion of five sampling events, analytical results will be compared to historical data to determine if COC concentrations are increasing, decreasing or stable. If a statistically significant increase in concentration of COCs is observed, RACER Trust will contact DNREC to discuss the next steps including evaluating active remediation.

5.2.2 Monitoring Plan: Step Down

After five sampling events, analytical results will be compared to historical data, by OU, to determine if COC concentrations are increasing, decreasing or stable. If a statistically significant decrease in concentrations of COCs is observed at the perimeter wells, or they are non-detect for COCs, the monitoring frequency will decrease from annually to biennially. If COCs continually decrease or remain stable at the monitoring wells after eight consecutive biennial monitoring events (i.e., sixteen years) RACER Trust will submit a written request to DNREC to eliminate the groundwater monitoring program. This analysis will be conducted independently for OU-2, OU-4, and OU-5.

5.3 Additional Actions

5.3.1 Repairs

The well inspection indicated that minor repairs are needed to monitoring wells MW-36S (OU-4) and MW-109R (OU-5). The repair to the PVC slip cap at MW-36S was completed during sampling and no additional repairs are necessary at this location. The concrete pad at MW-109R in OU-5 is loose and needs to be replaced. This repair will be completed concurrent with the installation of MW-51 in OU-4 at a future date.

5.3.2 Well Redevelopment

The replacement wells in OU-5 should be re-developed prior to the next annual sampling to ensure the groundwater results are representative of dissolved phase concentrations and are free of as many fines and particulates as possible.

6. References

- Brightfields, Inc. 2021. Letter to Mr. Rick Galloway, DNREC, regarding Documentation of Cap Placement, Former GM Assembly Plant (DE-1149) - Operable Unit 5, Wilmington, Delaware, BrightFields 3963.03.52. November 8.
- Conestoga-Rovers & Associates. 2015. Remedial Investigation Report, Former GM Wilmington Assembly Plant, Prepared for RACER Trust. July.
- GHD. 2022. Long-Term Stewardship Plan: OU-1 through OU-5, Former GM Wilmington Assembly Plant, Wilmington, Delaware, RACER Trust. January 14.
- United States Environmental Protection Agency. 2020. National Functional Guidelines for Organic Superfund Methods Data Review, 540-R-20-005. November.

- United States Environmental Protection Agency. 2020. National Functional Guidelines for Inorganic Superfund Methods Data Review, 542-R-20-006, November.

Table 1

**Groundwater Elevation Data
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware**

Well	Coordinates		TOC Elevation (feet amsl)	Ground Elevation (feet amsl)	Total Depth (feet bgs)	Screen Length (feet)	Depth to Water (feet below TOC)	Water Elevation (feet amsl)
	Northing	Easting						
Operable Unit 2								
MW-8R	629287.640	600410.090	82.49	-	20.10	10	14.70	67.79
MW-9R	629873.770	600068.980	83.14	-	19.70	10	12.22	70.92
MW-19R	629593.420	600357.460	79.18	-	19.00	10	10.06	69.12
Operable Unit 4								
MW-36D	629200.289	602374.450	80.68	81.07	38.79	5	15.89	64.79
MW-36S	629188.746	602373.059	80.79	81.15	22.40	10	15.79	65.00
MW-50R	629260.179	602381.634	80.34	80.50	24.50	15	15.44	64.90
Operable Unit 5								
MW-28R	629916.450	602684.690	73.54	73.74	19.60	10	9.63	63.91
MW-48R	630325.799	603371.716	70.78	70.86	16.50	10	8.29	62.49
MW-109R	630691.629	603493.433	71.13	71.29	16.00	10	15.48	55.65
MW-112	630558.203	603446.161	71.39	71.71	18.10	10	11.28	60.11
MW-113R	630428.085	603409.008	70.44	70.57	17.50	10	9.09	61.35

Note:

TOC = top of casing; amsl = above mean sea level; bgs = below ground surface

Table 2
Groundwater Analytical Results - Volatile Organic Compounds Detections
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location:							OU-2 MW-8R GW-11222397-011123- ZB-07 01/11/2023	OU-2 MW-9R GW-11222397-011123- ZB-10 01/11/2023	OU-2 MW-19R GW-11222397-011123- MA-08 01/11/2023	OU-2 MW-19R GW-11222397-011123- MA-09 01/11/2023 (Duplicate)	OU-4 MW-36D GW-11222397-011023- ZB-02 01/10/2023	OU-4 MW-36S GW-11222397-011023- MA-03 01/10/2023	OU-4 MW-50R GW-11222397-011023- ZB-05 01/10/2023	OU-5 MW-48R GW-11222397-011123- MA-13 01/11/2023
Sample ID:		Historical Maximum	Historical Maximum	Historical Maximum	Historical Maximum	HSCA								
Sample Date:		Concentration Exceeding HSCA ^(a)	Concentration OU-2	Concentration OU-4	Concentration OU-5	Groundwater April 2023 ^(c)								
Parameters		Units												
VOCs														
1,2,4-Trimethylbenzene	µg/l	2800	180	2800	9.1	5.6	0.37 U	0.37 U	7.1	7.4	65	160	0.37 U	--
1,2-Dibromo-3-chloropropane (DBCP)	µg/l	--	--	--	--	0.00033	0.38 UJ	0.38 UJ	0.38 UJ	0.38 UJ	0.38 UJ	0.38 UJ	0.38 UJ	--
1,2-Dichloropropane	µg/l	--	--	--	--	0.82	0.35 U	0.35 U	0.35 J	0.38 J	0.35 U	0.35 U	0.35 U	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/l	--	--	--	--	560	1.9 U	1.9 U	15	14	1.9 U	7.9	1.9 U	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/l	1900 J	1900 J	30	2.2 J	630	1.3 U	1.3 U	3.7 J	3.8 J	1.3 U	1.3 U	1.3 U	--
Acetone	µg/l	470000 J	470000 J	280 J	32 J	1800	4.4 U	4.4 U	70	74	9.7	15	4.4 U	--
Benzene	µg/l	1500	1200	1500	15	0.46	0.20 U	0.20 U	0.26 J	0.35 J	37	140	0.20 U	0.20 U
Carbon disulfide	µg/l	--	--	--	--	81	0.82 U	0.82 U	14	17	0.82 U	0.82 U	0.82 U	--
Chloromethane (Methyl chloride)	µg/l	--	--	--	--	19	0.40 U	0.40 U	0.40 U	0.40 U	7.9	0.40 U	0.40 U	--
cis-1,2-Dichloroethene	µg/l	9.2	7.1 J	1.3	9.2	2.5	0.22 U	0.22 U	1.1	1.1	0.22 U	0.22 U	0.22 U	--
Cyclohexane	µg/l	--	--	--	--	1300	0.32 U	0.32 U	0.32 U	0.32 U	100	110	0.32 U	--
Ethylbenzene	µg/l	22000	22000	2400	29	1.5	0.30 U	0.30 U	3.3	3.3	210	340	0.30 U	--
Isopropyl benzene	µg/l	560	560	130	2.5	45	0.34 U	0.34 U	0.34 U	0.34 J	17	11	0.34 U	--
Methyl cyclohexane	µg/l	--	--	--	--	--	0.71 U	0.71 U	0.71 U	0.71 U	52	36	0.71 U	--
Methyl tert butyl ether (MTBE)	µg/l	1400	1400	1.6 J	0.82 J	10	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.28 J	0.22 U	--
Methylene chloride	µg/l	91	--	--	--	5	0.32 U	0.32 U	0.35 J	0.32 U	0.32 U	0.32 U	0.32 U	--
Styrene	µg/l	--	--	--	--	100	0.42 U	0.42 U	1.6	1.8	0.42 U	0.42 U	0.42 U	--
Tetrachloroethene	µg/l	8.9	0.8 J	1.3 J	--	1	0.42 J	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--
Toluene	µg/l	190000	19000	6100	31	110	0.38 U	0.38 U	2.0	2.0	130	49	0.38 U	--
Trichloroethene	µg/l	9.5	3	9.5	3.6	0.28	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	3.8
Trichlorofluoromethane (CFC-11)	µg/l	--	--	--	--	520	2.1	0.33 J	3.4	3.1	0.32 UJ	0.32 UJ	0.32 U	--
Vinyl chloride	µg/l	42	2.5 J	23	42	0.019	0.17 U	0.17 U	0.45 J	0.39 J	0.17 U	0.17 U	0.17 U	--
Xylenes (total)	µg/l	35000	35000	13000	140	19	0.65 U	0.65 U	17	19	480	480	0.65 U	--

Notes:
For clarity, only compounds detected above reporting limits are shown.
µg/L= micrograms per liter; DNREC = Department of Natural Resources and Environmental Control; HSCA = Hazardous Substance Cleanup Act; J = estimated concentration; VOCs = volatile organic compounds; U = not detected at the associated reporting limit; UJ = not detected, associated reporting limit
Red values exceed the Delaware DNREC HSCA Groundwater Screening Levels, updated April 2023.
a) Maximum historical concentration of analyte exceeding the HSCA Groundwater Screening Levels, April 2023 across the Site
b) Maximum historical concentration of analyte exceeding the HSCA Groundwater Screening Levels at individual operable units OU-2, OU-4, and OU-5
c) Hazardous Substance Cleanup Act (HSCA) Groundwater Screening Levels, April 2023
"--" compound was not analyzed for

Table 3

Groundwater Analytical Results - Semi-Volatile Organic Compound Detections
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:		Historical Maximum Concentration Exceeding HSCA ^(a)	Historical Maximum Concentration OU4 ^(b)	HSCA Groundwater April 2023 ^(c)	OU-4 MW-36D GW-11222397-011023-ZB-02 01/10/2023	OU-4 MW-36S GW-11222397-011023-MA-03 01/10/2023	OU-4 MW-36S GW-11222397-011023-MA-04 01/10/2023 (Duplicate)	OU-4 MW-50R GW-11222397-011023-ZB-05 01/10/2023
Parameters	Units							
SVOCs								
2,4-Dimethylphenol	µg/l	600	33	36	1.7 J	19	16	0.62 U
2,4-Dinitrophenol	µg/l	--	--	3.9	2.6 UJ	2.6 UJ	2.6 UJ	2.6 UJ
2-Methylnaphthalene	µg/l	180	180	3.6	7.3 J	64	63	0.53 U
2-Methylphenol	µg/l	290	21	93	0.67 U	9.6 J	7.8 J	0.67 U
4,6-Dinitro-2-methylphenol	µg/l	--	--	0.15	3.0 UJ	3.0 UJ	3.0 UJ	3.0 UJ
4-Methylphenol	µg/l	770	130	37	0.75 J	0.65 U	0.65 U	0.65 U
Acenaphthene	µg/l	--	--	53	1.1 U	1.1 U	1.3 J	1.1 U
Benzaldehyde	µg/l	140	--	19	2.1 UJ	2.1 UJ	2.1 UJ	2.1 UJ
Biphenyl (1,1-Biphenyl)	µg/l	12	12	0.083	1.2 U	5.0 J	4.6 J	1.2 U
Dibenzofuran	µg/l	3.8	3.8	0.79	1.1 U	1.8 J	1.9 J	1.1 U
Fluorene	µg/l	--	--	29	0.91 U	2.2 J	2.2 J	0.91 U
Naphthalene	µg/l	3200	270	0.12	57	92	91	0.54 U
Phenanthrene	µg/l	--	--	12	1.3 U	1.6 J	1.5 J	1.3 U

Notes:

For clarity, only compounds detected above reporting limits are shown.

µg/L= micrograms per liter; DNREC = Department of Natural Resources and Environmental Control; HSCA = Hazardous Substance Cleanup Act; J = estimated concentration; SVOCs = semi-volatile organic compounds; U = not detected at the associated reporting limit; UJ = not detected, associated reporting limit is estimated.

Red values exceed the Delaware DNREC HSCA Groundwater Screening Levels, updated April 2023.

a) Maximum historical concentration of analyte exceeding the HSCA Groundwater Screening Levels, April 2023 across the Site

b) Maximum historical concentration of analyte exceeding the HSCA Groundwater Screening Levels at OU-4

c) Hazardous Substance Cleanup Act (HSCA) Groundwater Screening Levels, April 2023

"--" compound was not analyzed for

Table 4
Groundwater Analytical Data - Metal Detections
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:		Historical Maximum Concentration Exceeding HSCA ^(a)	Historical Maximum Concentration OU5 ^(b)	HSCA Groundwater April 2023 ^(c)	OU-5 MW-48R GW-11222397-011123-MA- 13 01/11/2023	OU-5 MW-48R GW-11222397-011123-MA- 14 01/11/2023 (Duplicate)	OU-5 MW-109R GW - 11222397- 011223- MA-16 01/12/2023	OU-5 MW-112 GW-11222397-011123-ZB- 12 01/11/2023	OU-5 MW-113R GW - 11222397- 011223- MA-15 01/12/2023
Parameters	Units								
Metals									
Aluminum	µg/l	77700	2890	2000	94.4 J	1290 J	1200	1920	1040
Antimony	µg/l	6.7	0.79 J	0.78	0.76 U	0.76 U	1.9 J	0.76 U	0.76 U
Arsenic	µg/l	47.8	9.6	0.052	0.89 U	0.89 U	1.6 J	1.0 J	0.89 U
Barium	µg/l	1390	1390	380	271	290	55.0	327	264
Calcium	µg/l	--	--	--	35200	38100	90800	74300	36600
Chromium (Trivalent and compounds)	µg/l	251	3.9 J	2200	2.5 UJ	8.7 J	7.3	3.4 J	2.6 J
Cobalt	µg/l	234	53.4	0.6	6.0	7.3	2.8 J	7.4	17.7
Copper	µg/l	--	--	80	2.5 U	3.6 U	16.9	5.1 U	2.5 U
Iron	µg/l	285000	78400	1400	90.3 J	1950 J	4170	3500	833
Lead	µg/l	124	0.55 J	15	0.84 UJ	8.7 J	11.9	2.7	0.84 J
Magnesium	µg/l	--	--	--	37600	41200	33800	52700	31400
Manganese	µg/l	32400	6390	43	6780	7170	125	1270	4720
Manganese (dissolved)	µg/l	32400	6510	43	7910	7890	67.0	1170	4850
Mercury	µg/l	4	No Detections	0.063	0.091 U	0.091 U	0.10 J	0.091 U	0.091 U
Nickel	µg/l	76.7	27.5 J	39	5.1 U	5.5 U	6.0	9.3 U	3.4 J
Potassium	µg/l	--	--	--	3370	3520	35100	8730	4550
Sodium	µg/l	--	--	--	106000	105000	49900	84800	74300
Vanadium	µg/l	199	8.8 J	8.6	0.76 J	5.6 J	6.7	5.3	3.8 J
Zinc	µg/l	--	--	600	10 J	17.7	20.8	20.5	6.5 U

Notes:

For clarity, only compounds detected above reporting limits are shown.

µg/L= micrograms per liter; DNREC = Department of Natural Resources and Environmental Control; HSCA = Hazardous Substance Cleanup Act; J = estimated concentration; U = not detected at the associated reporting limit; UJ = not detected, associated reporting limit is estimated.

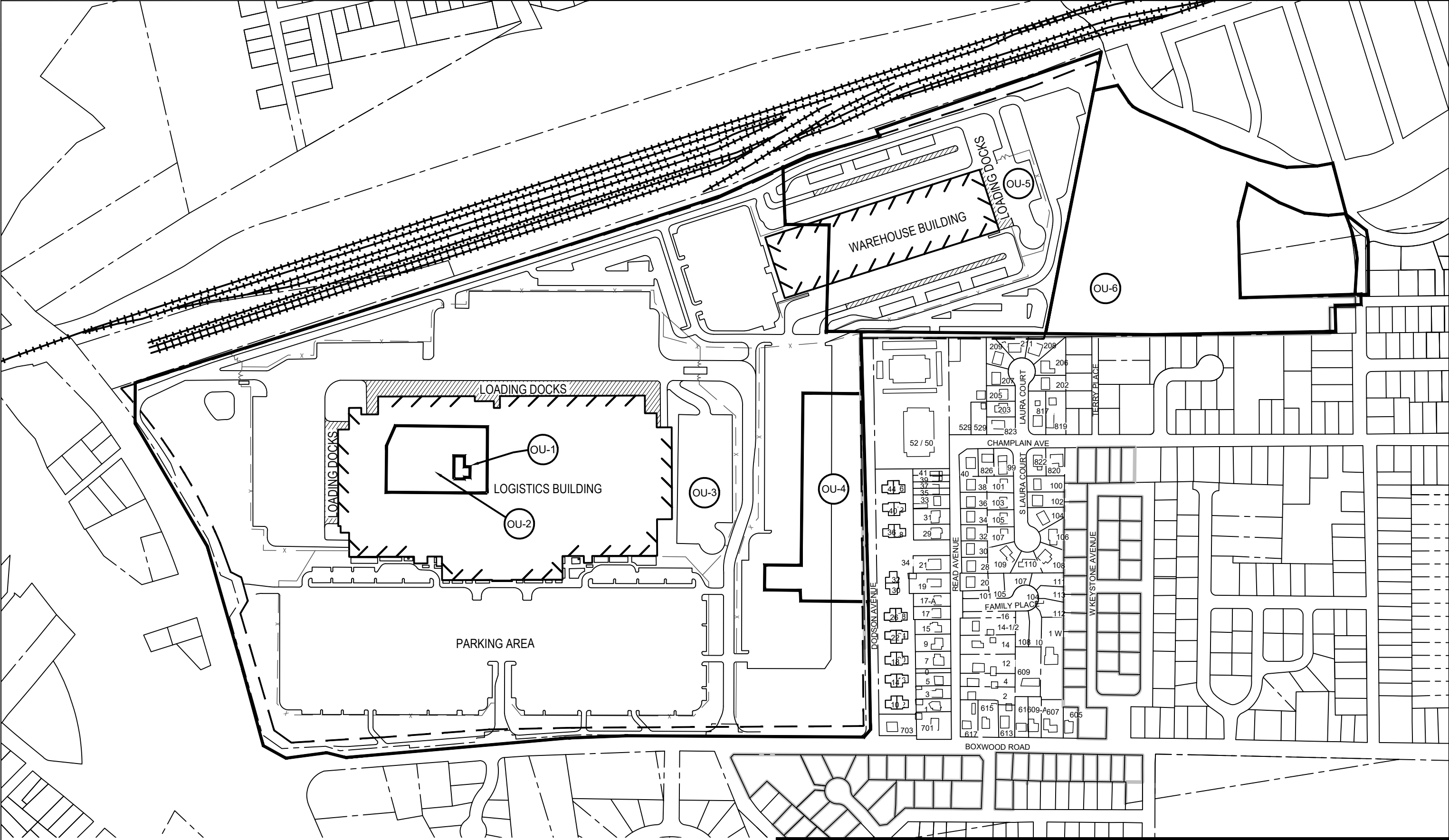
Red values exceed the Delaware DNREC Hazardous Substance Cleanup Act Groundwater Screening Levels, updated April 2023.

a) Maximum historical concentration of analyte exceeding the HSCA Groundwater Screening Levels, April 2023 across the Site

b) Maximum historical concentration of analyte exceeding the HSCA Groundwater Screening Levels at OU-5

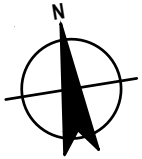
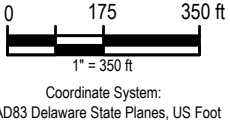
c) Hazardous Substance Cleanup Act (HSCA) Groundwater Screening Levels, April 2023

"--" compound was not analyzed for



LEGEND

- APPROXIMATE FACILITY BOUNDARY
- OPERABLE UNIT (OU) BOUNDARY
- ++++ RAILWAY
- - - FENCELINE



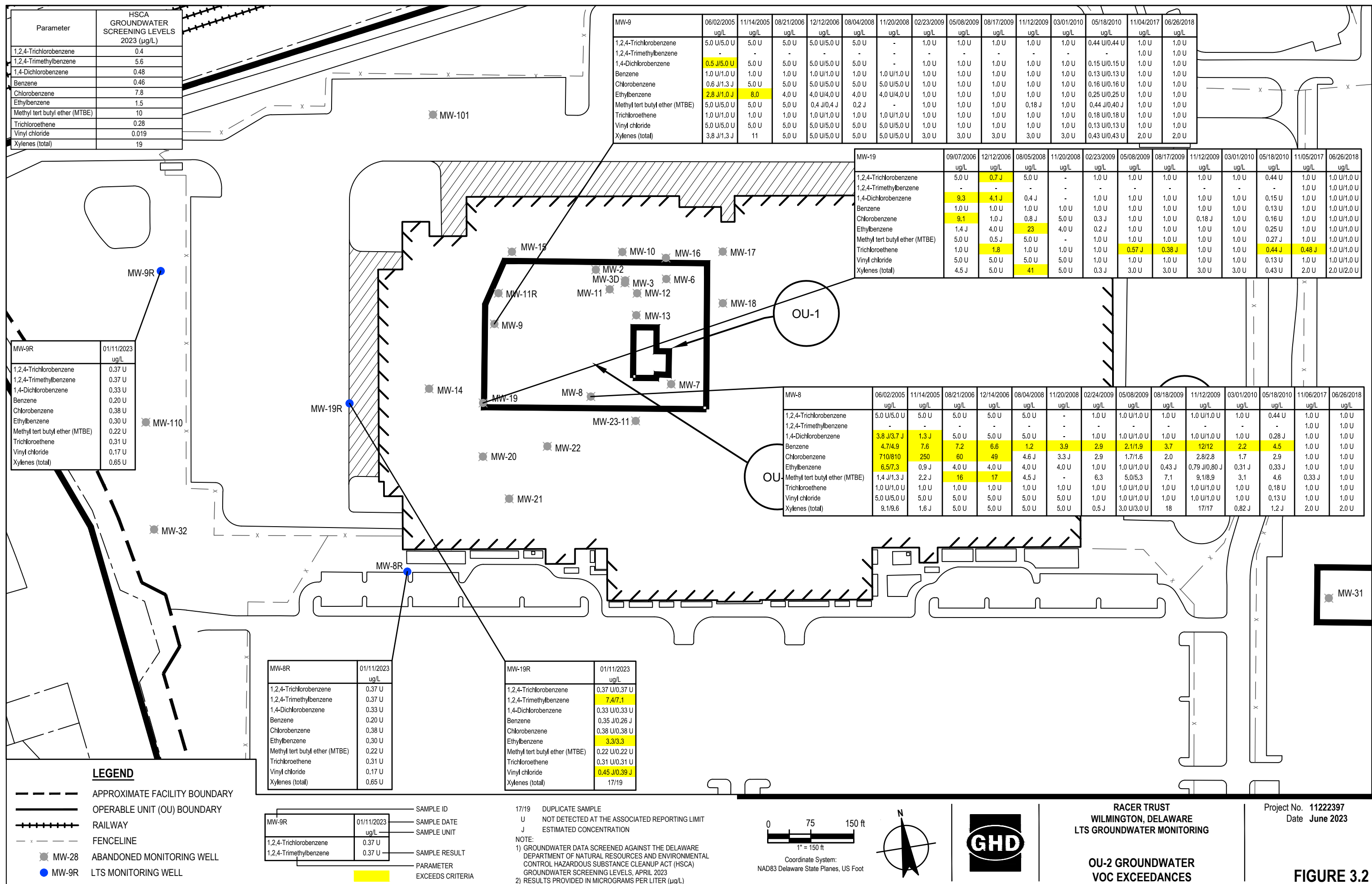
RACER TRUST
WILMINGTON, DELAWARE
LTS GROUNDWATER MONITORING

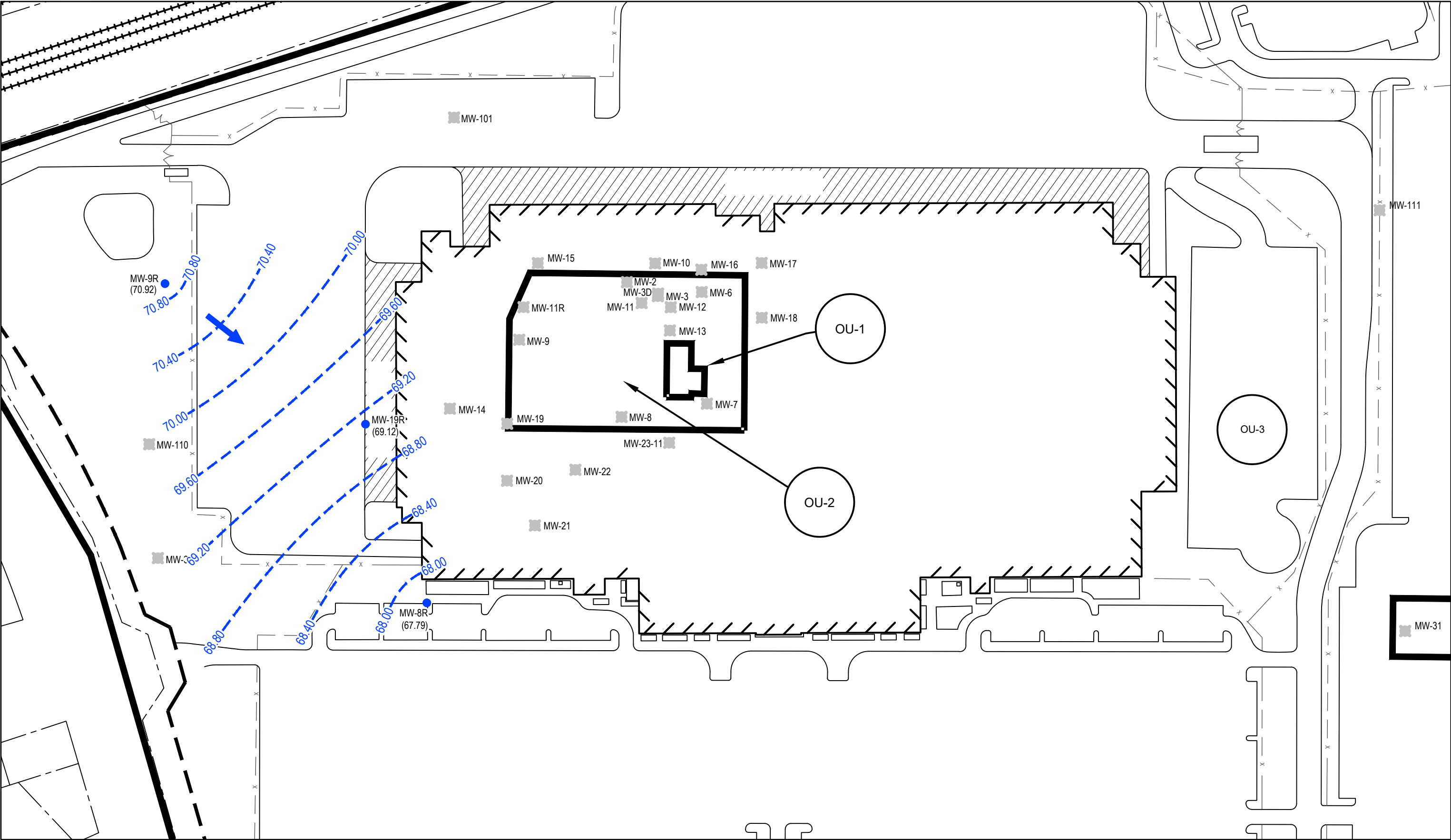
Project No. 11222397
Date June 2023

LOCATION OF OPERABLE UNITS

FIGURE 2







LEGEND

--- APPROXIMATE FACILITY BOUNDARY

--- OPERABLE UNIT (OU) BOUNDARY

++++ RAILWAY

-x-x- FENCELINE

MW-28 ABANDONED MONITORING WELL

MW-9R (70.92) LTS MONITORING WELL

MW-19R (69.12) GROUNDWATER ELEVATION MEASURED ON JANUARY 9, 2023

MW-8R (67.79)

68.00 ESTIMATED GROUNDWATER ELEVATION CONTOUR

→ ESTIMATED GROUNDWATER FLOW DIRECTION

0 75 150 ft

1" = 150 ft

Coordinate System: NAD83 Delaware State Planes, US Foot

N

GHD

RACER TRUST
WILMINGTON, DELAWARE
LTS GROUNDWATER MONITORING

OU-2 GROUNDWATER CONTOURS

Project No. 11222397
Date June 2023

FIGURE 3.3



LEGEND

- APPROXIMATE FACILITY BOUNDARY
- OPERABLE UNIT (OU) BOUNDARY
- ++++ RAILWAY
- - - FENCELINE

MW-109 MONITORING WELL TO BE ABANDONED WITH ACCESS

MW-28 ABANDONED MONITORING WELL

MW-51 PLANNED MONITORING WELL

MW-50 LTS MONITORING WELL

(64.90) GROUNDWATER ELEVATION MEASURED JANUARY 9, 2023

0 75 150 ft

1" = 150 ft

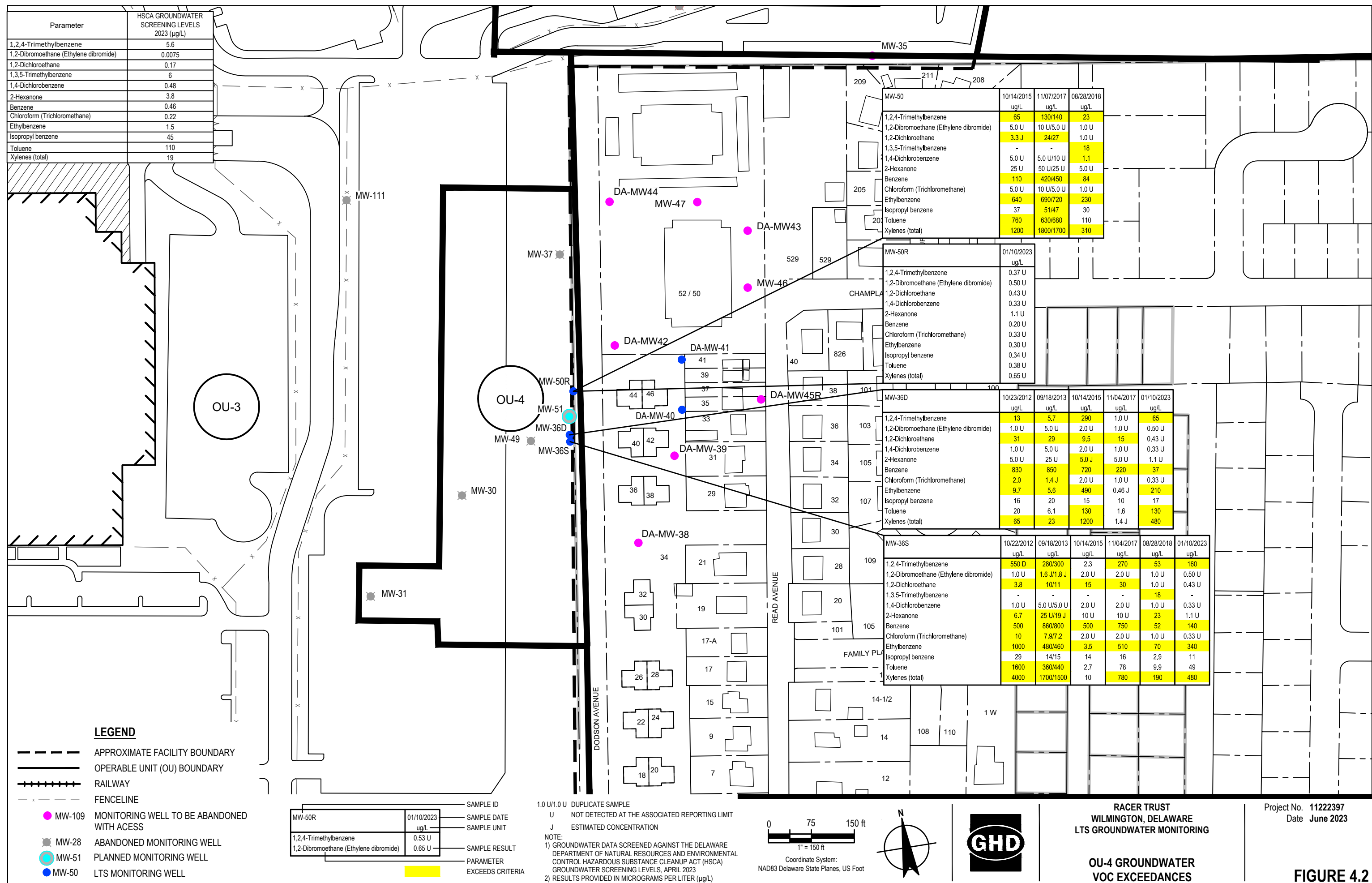
Coordinate System:
NAD83 Delaware State Planes, US Foot

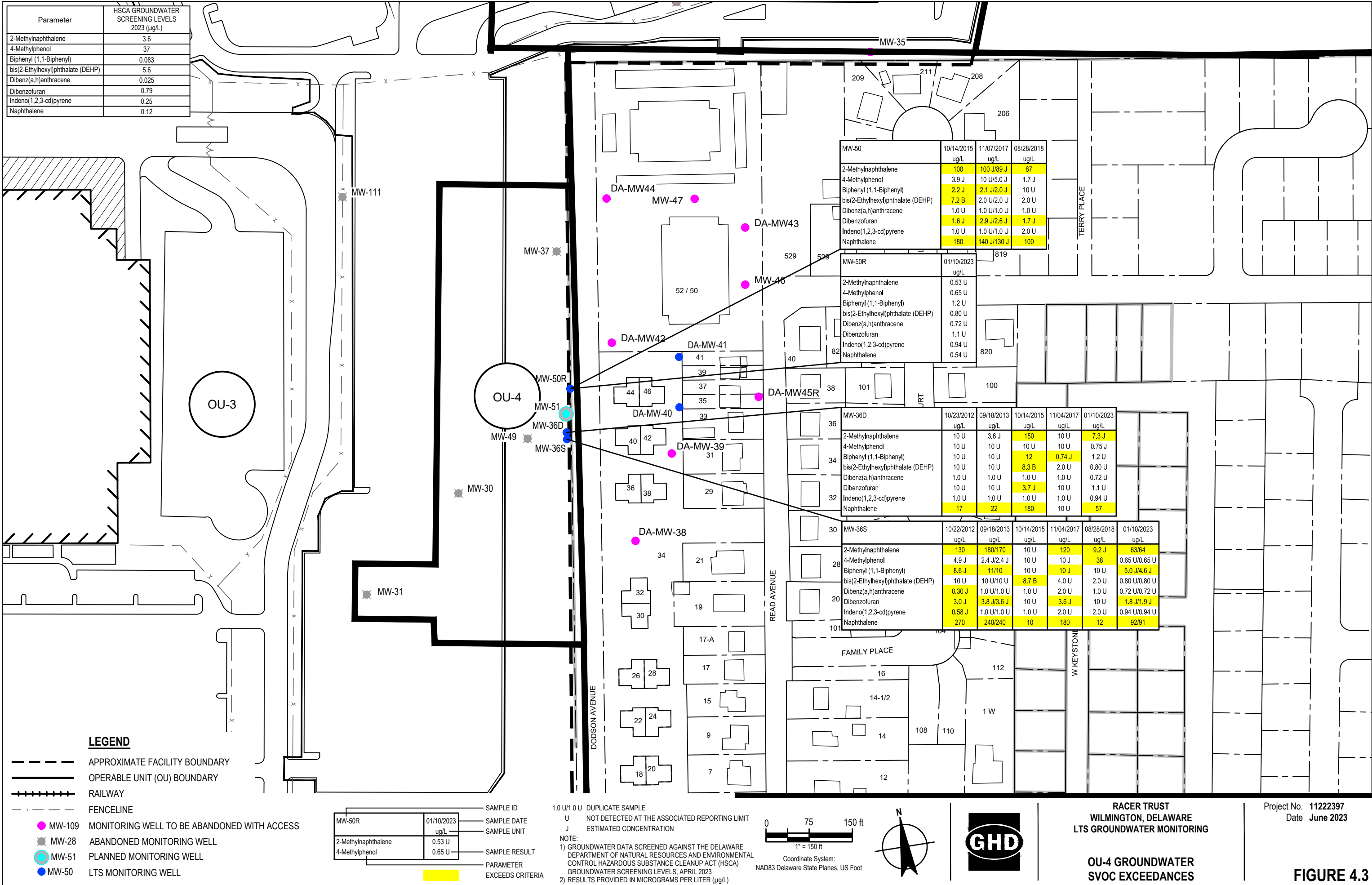
RACER TRUST
WILMINGTON, DELAWARE
LTS GROUNDWATER MONITORING

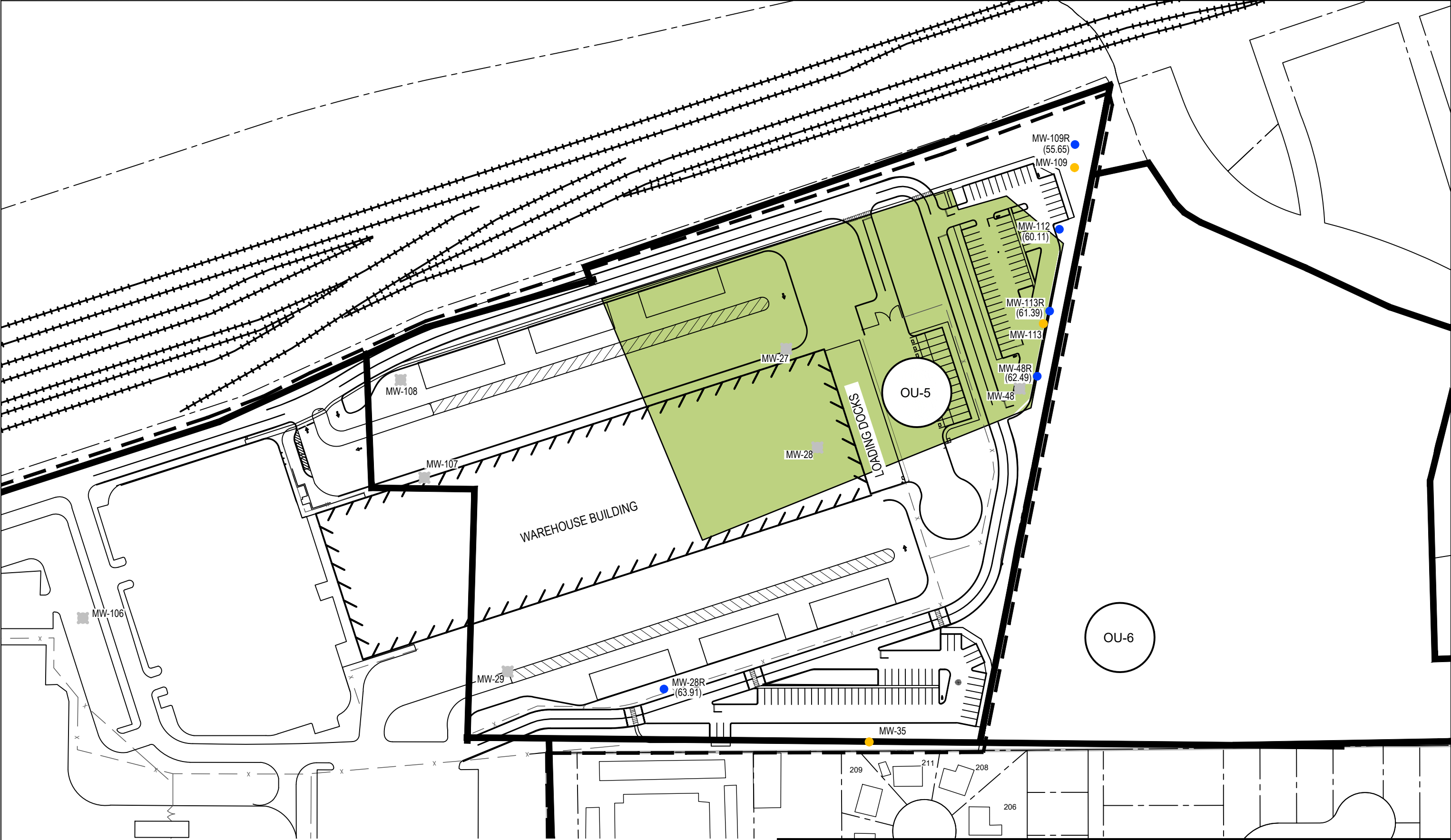
**OU-4 GROUNDWATER
MONITORING LOCATIONS**

Project No. 11222397
Date June 2023

FIGURE 4.1







LEGEND

---	APPROXIMATE FACILITY BOUNDARY	● MW-48R	LTS MONITORING WELL	■	CAP AREA EXTENT
—	OPERABLE UNIT (OU) BOUNDARY	● MW-109	INACCESSIBLE MONITORING WELL		
++++	RAILWAY	■ MW-106	ABANDONED MONITORING WELL		
-x-x-	FENCELINE	(62.49)	GROUNDWATER ELEVATION MEASURED JANUARY 9, 2023		

0 75 150 ft
1" = 150 ft
Coordinate System:
NAD83 Delaware State Planes, US Foot

N

GHD

**RACER TRUST
WILMINGTON, DELAWARE
LTS GROUNDWATER MONITORING**

**OU-5 GROUNDWATER
MONITORING LOCATIONS**

Project No. 11222397
Date June 2023

FIGURE 5.1

Parameter	HSCA GROUNDWATER SCREENING LEVELS 2023 (µg/L)
Trichloroethene	0.28

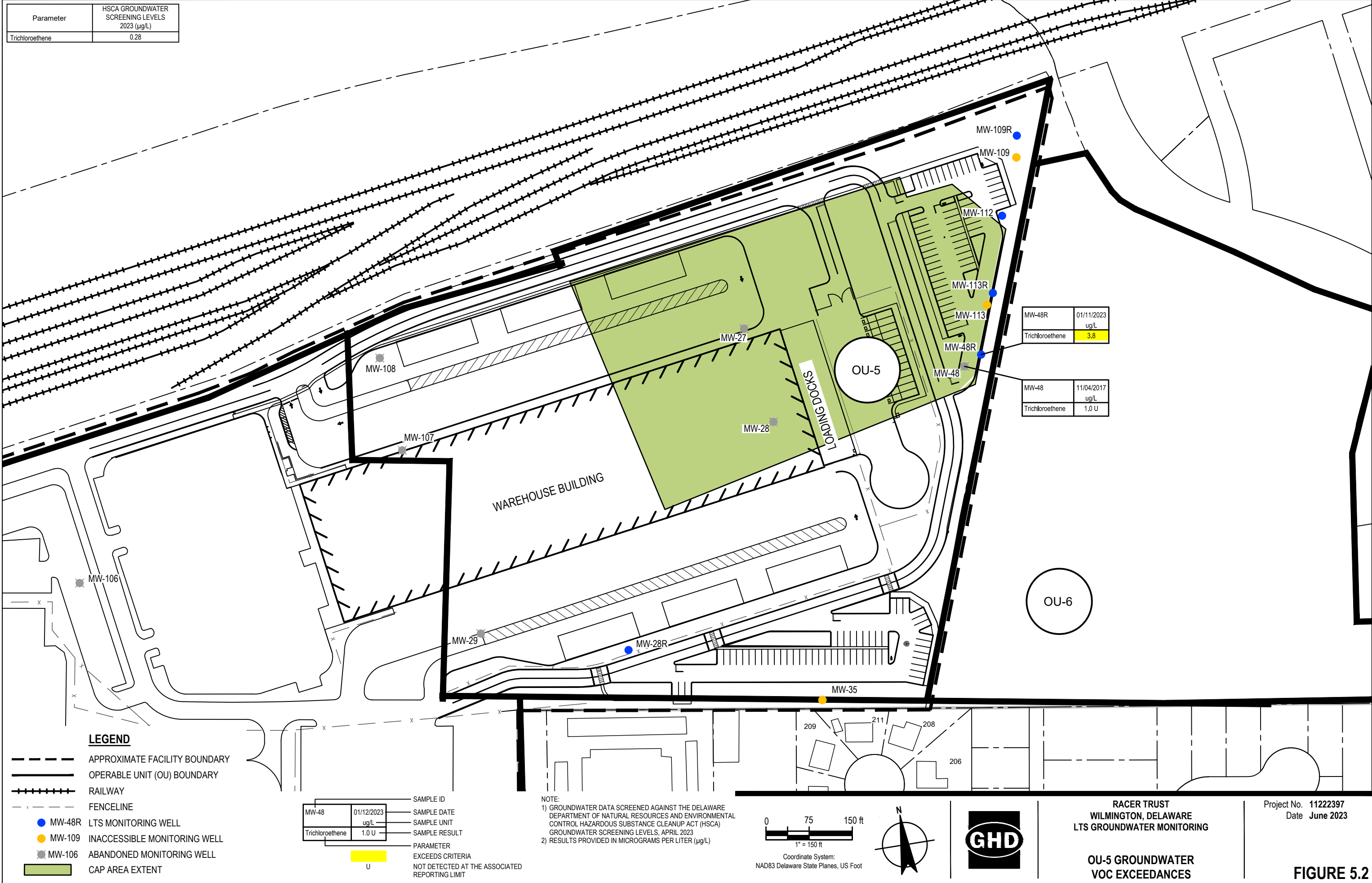
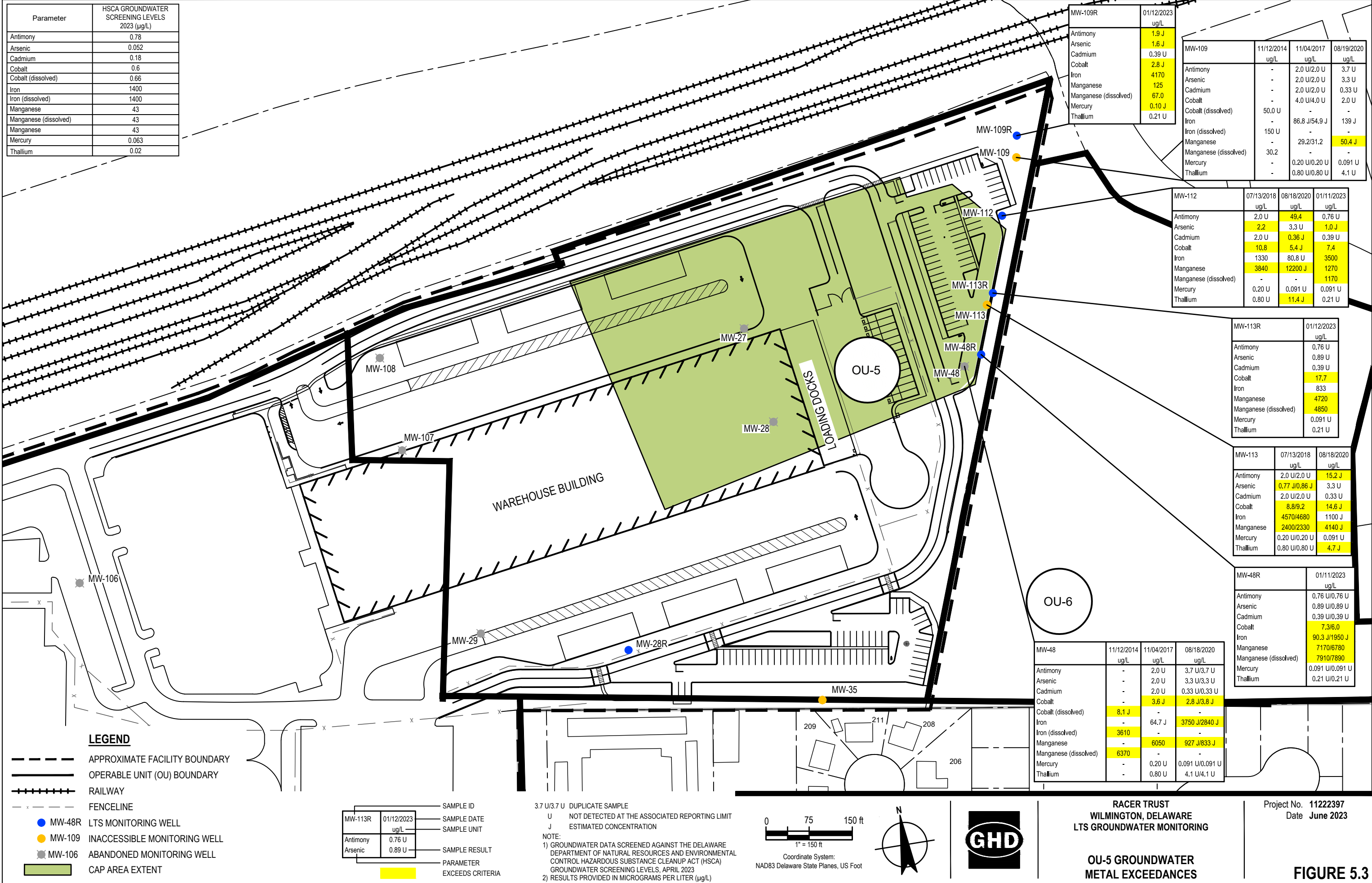
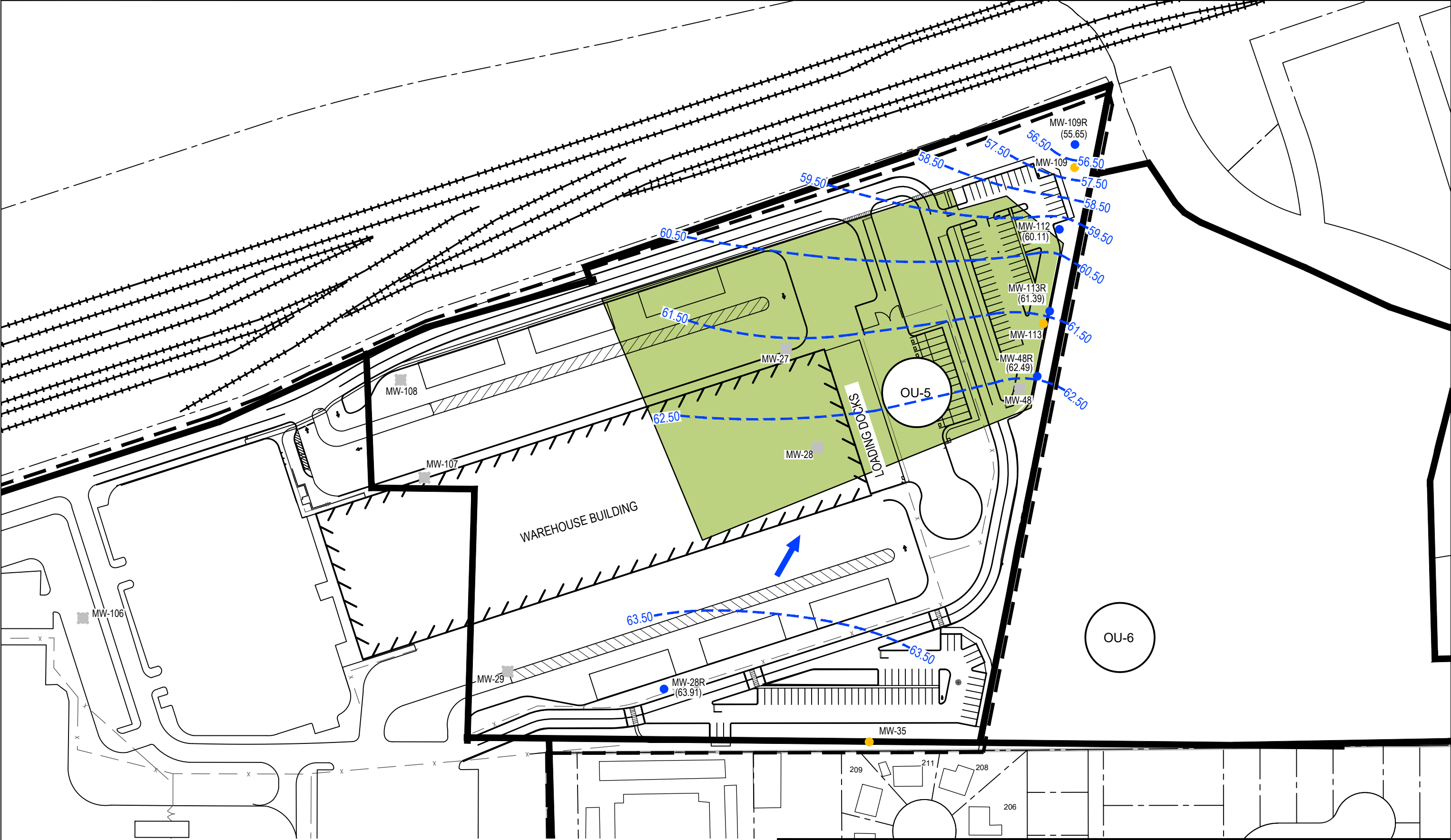


FIGURE 5.2





LEGEND

---	APPROXIMATE FACILITY BOUNDARY	● MW-28R	LTS MONITORING WELL	■	CAP AREA EXTENT	—62.50—	ESTIMATED GROUNDWATER ELEVATION CONTOUR
---	OPERABLE UNIT (OU) BOUNDARY	● MW-109	INACCESSIBLE MONITORING WELL	---		➡	ESTIMATED GROUNDWATER FLOW DIRECTION
+++++	RAILWAY	■ MW-106 (63.91)	ABANDONED MONITORING WELL				
-x-x-	FENCELINE						

0 75 150 ft
1" = 150 ft
Coordinate System:
NAD83 Delaware State Planes, US Foot

N

GHD

**RACER TRUST
WILMINGTON, DELAWARE
LTS GROUNDWATER MONITORING**

OU-5 GROUNDWATER CONTOURS

Project No. 11222397
Date June 2023

FIGURE 5.4

Appendices

Appendix A

Well Completion Reports

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER
RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: 302-739-9944
FAX: 302-739-7764

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

WELL COMPLETION REPORT

<http://www.dnrec.state.de.us/>

APPLICATION MUST BE SUBMITTED
AND PERMIT RECEIVED BEFORE
DRILLING IS STARTED.

- OFFICIAL USE ONLY -

PAGE # ____ OF ____ PAGES
PERMIT #: **275334**

Owner: DPIF2 DE 2 NEW CASTLE 2 LLC	LOCATION MAP - ROAD MAP			
Address: 67 East Park Place, 67 East Park Place Morristown NJ US 07960	County: New Castle	Tax Parcel: 07-038.40-052		
Telephone: (302)656-9600	Lot #:			
Email:	WELL HEAD COMPLETION			
Permit #: 275334	Type: Pad Mount			
Local ID: MW-48R	Other:			
Licensed Preparer / WC: Northeast Regional Probing Inc	Well Head Completed: 3.00 in.			
License #: 4223	Below Ground Surface			
Well Driller in Charge:	Was the Well Tag attached in accordance with current regulations?			
License #: 4234	Yes			
Construction Method: Geo-Probe	Comments:			
Total Depth of Excavation: 16.00 feet				
Construction Date: 8/24/2021				
Casing	Top	Bottom	Diameter	Material
Inner Casing	0.00	6.00	0.75	PVC
Screen Material: PVC		Diameter: 0.75		
Top: 6.00		Bottom: 16.00		
Type of Grout: None				
Top: 0.00		Bottom: 0.00		
Gravel Pack Interval:				
Top: 6.00		Bottom: 16.00		
Type of Non-Grout Backfill of Well Annulus: Bentonite				
Top: 0.00		Bottom: 6.00		
Screen Slot Size: 10				
Gravel Pack Size: 2				
Static Water Level: 6.00 ft.	Below Ground Surface			
Date: 8/24/2021				
Pumping Water Level: 1.0000 ft.				
Date: 8/24/2021				
After: 1.00 hrs.				
Pumping at: 1.00 GPM				
Was a Geophysical Log Taken? Yes				
I HEREBY AFFIRM THE INFORMATION I HAVE SUBMITTED IS ACCURATE AND CORRECT.				
Signature - Licensed Preparer/Well Contractor		Date		
Signature - Property Owner		Date		
				

Ref#: 55804

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER
RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: 302-739-9944
FAX: 302-739-7764

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

WELL COMPLETION REPORT

<http://www.dnrec.state.de.us/>

APPLICATION MUST BE SUBMITTED
AND PERMIT RECEIVED BEFORE
DRILLING IS STARTED.

- OFFICIAL USE ONLY -

PAGE # ____ OF ____ PAGES

PERMIT #: _____

FORMATION LOG

Formation Type:	Fine Sand	Other:	
Formation Type With:	Silt	Other:	
From:	0.00	To:	16.00
Color:	brown		
Texture	Fine	Other:	
To:	Fine	Other:	
Cement:		Other	
Sorting:		Other:	
Hardness:		Other:	
Comment:			

Ref#: 55804

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER
RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: 302-739-9944
FAX: 302-739-7764

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

WELL COMPLETION REPORT

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PAGE # ____ OF ____ PAGES

PERMIT #: 275332

Owner: DPIF2 DE 2 NEW CASTLE 2 LLC	LOCATION MAP - ROAD MAP			
Address: 67 East Park Place, 67 East Park Place Morristown NJ US 07960	County: New Castle			
Telephone:	Tax Parcel: 07-038.40-052			
Email:	Lot #:			
Permit #: 275332	WELL HEAD COMPLETION			
Local ID: MW-109R	Type: Pad Mount			
Licensed Preparer / WC: Northeast Regional Probing Inc	Other:			
License #: 4223	Well Head Completed: 3.00 in.			
Well Driller in Charge:	Below Ground Surface			
License #: 4234	Was the Well Tag attached in accordance with current regulations?			
Construction Method: Geo-Probe	Yes			
Total Depth of Excavation: 17.00 feet	Comments:			
Construction Date: 8/24/2021				
Casing	Top	Bottom	Diameter	Material
Inner Casing	0.00	7.00	0.75	PVC
Screen Material: PVC	Diameter: 0.75			
Top: 7.00	Bottom: 17.00			
Type of Grout: None				
Top: 0.00	Bottom: 0.00			
Gravel Pack Interval:				
Top: 5.00	Bottom: 17.00			
Type of Non-Grout Backfill of Well Annulus: Bentonite				
Top: 0.00	Bottom: 5.00			
Screen Slot Size: 10				
Gravel Pack Size: 2				
Static Water Level: 7.00 ft.	Below Ground Surface			
Date: 8/24/2021				
Pumping Water Level: 1.0000 ft.				
Date: 8/24/2021				
After: 1.00 hrs.				
Pumping at: 1.00 GPM				
Was a Geophysical Log Taken? Yes				
I HEREBY AFFIRM THE INFORMATION I HAVE SUBMITTED IS ACCURATE AND CORRECT.				
Signature - Licensed Preparer/Well Contractor	Date			
Signature - Property Owner	Date			
				

Ref#: 55810

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER
RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: 302-739-9944
FAX: 302-739-7764

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

WELL COMPLETION REPORT

<http://www.dnrec.state.de.us/>

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AND PERMIT RECEIVED BEFORE
DRILLING IS STARTED.

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PAGE # ____ OF ____ PAGES

PERMIT #: _____

FORMATION LOG

Formation Type:	Fine Sand	Other:	
Formation Type With:	Silt	Other:	
From:	0.00	To:	17.00
Color:	brown		
Texture	Fine	Other:	
To:	Fine	Other:	
Cement:		Other	
Sorting:		Other:	
Hardness:		Other:	
Comment:			

Ref#: 55810

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER
RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: 302-739-9944
FAX: 302-739-7764

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

WELL COMPLETION REPORT

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DRILLING IS STARTED.

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PAGE # ____ OF ____ PAGES
PERMIT #: **275333**

Owner: DPIF2 DE 2 NEW CASTLE 2 LLC					LOCATION MAP - ROAD MAP	
Address: 67 East Park Place, 67 East Park Place Morristown NJ US 07960					County: New Castle	
Telephone:					Tax Parcel: 07-038.40-052	
Email:					Lot #:	
Permit #: 275333					WELL HEAD COMPLETION	
Local ID: MW-113R					Type: Pad Mount	
Licensed Preparer / WC: Northeast Regional Probing Inc					Other:	
License #: 4223					Well Head Completed: 3.00 in.	
Well Driller in Charge:					Below Ground Surface	
License #: 4234					Was the Well Tag attached in accordance with current regulations?	
Construction Method: Geo-Probe					Yes	
Total Depth of Excavation: 18.00 feet					Comments:	
Construction Date: 8/24/2021						
Casing	Top	Bottom	Diameter	Material		
Inner Casing	0.00	7.50	0.75	PVC		
Screen Material: PVC		Diameter: 0.75				
Top: 7.50		Bottom: 17.50				
Type of Grout: None						
Top: 0.00		Bottom: 0.00				
Gravel Pack Interval:						
Top: 5.50		Bottom: 17.50				
Type of Non-Grout Backfill of Well Annulus: Bentonite						
Top: 0.00		Bottom: 5.50				
Screen Slot Size: 10						
Gravel Pack Size: 2						
Static Water Level: 6.00 ft.		Below Ground Surface				
Date: 8/24/2021						
Pumping Water Level: 1.0000 ft.						
Date: 8/24/2021						
After: 1.00 hrs.						
Pumping at: 1.00 GPM						
Was a Geophysical Log Taken? Yes					X: 183924.84	
I HEREBY AFFIRM THE INFORMATION I HAVE SUBMITTED IS ACCURATE AND CORRECT.					Y: 192174.01	
Signature - Licensed Preparer/Well Contractor						
Date						
Signature - Property Owner						
Date						
						

Ref#: 55808

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER
RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: 302-739-9944
FAX: 302-739-7764

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

WELL COMPLETION REPORT

<http://www.dnrec.state.de.us/>

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AND PERMIT RECEIVED BEFORE
DRILLING IS STARTED.

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PAGE # ____ OF ____ PAGES

PERMIT #: _____

FORMATION LOG

Formation Type:	Fine Sand	Other:	
Formation Type With:	Silt	Other:	
From:	0.00	To:	18.00
Color:	brown		
Texture	Fine	Other:	
To:	Fine	Other:	
Cement:		Other	
Sorting:		Other:	
Hardness:		Other:	
Comment:			

Ref#: 55808

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER
RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: 302-739-9944
FAX: 302-739-7764



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PAGE # ____ OF ____ PAGES

PERMIT #:

WELL COMPLETION REPORT

Owner: Dpif2 Delaware 2 New Castle 2 Llc	LOCATION MAP - ROAD MAP										
Address: 67 East Park Place Morristown NJ US 07960	County: New Castle										
Telephone:	Tax Parcel: 07-038.40-052										
Email:	Lot #:										
Permit #: 276560	WELL HEAD COMPLETION										
Local ID: MW-50R	Type: Pad Mount										
Licensed Preparer / WC: Subsurface Environmental Technologies, LLC	Other:										
License #: 5395	Well Head Completed: 1.00 in.										
Well Driller in Charge:	Below Ground Surface										
License #: 5439	Was the Well Tag attached in accordance with current regulations?										
Construction Method: Augered	Yes										
Total Depth of Excavation: 25.00 feet	Comments:										
Construction Date: 12/17/2021											
<table border="1"><thead><tr><th>Casing</th><th>Top</th><th>Bottom</th><th>Diameter</th><th>Material</th></tr></thead><tbody><tr><td>Inner Casing</td><td>0.00</td><td>10.00</td><td>2.00</td><td>PVC</td></tr></tbody></table>	Casing	Top	Bottom	Diameter	Material	Inner Casing	0.00	10.00	2.00	PVC	
Casing	Top	Bottom	Diameter	Material							
Inner Casing	0.00	10.00	2.00	PVC							
Screen Material: PVC	Diameter: 2.00										
Top: 10.00	Bottom: 25.00										
Type of Grout: Bentonite/Cement Mixture											
Top: 0.00	Bottom: 8.00										
Gravel Pack Interval:											
Top: 8.00	Bottom: 25.00										
Type of Non-Grout Backfill of Well Annulus: None											
Top: 0.00	Bottom: 0.00										
Screen Slot Size: 0											
Gravel Pack Size: 2											
Static Water Level: 15.00 ft.	Below Ground Surface										
Date: 12/17/2021											
Pumping Water Level: 15.0000 ft.	X: 183604.40										
Date: 12/17/2021	Y: 191824.14										
After: 1.00 hrs.											
Pumping at: 2.00 GPM											
Was a Geophysical Log Taken? Yes											

An aerial photograph of a residential area. A yellow line outlines a specific lot. A red dot is placed on the lot, indicating the location of the well. The surrounding area includes houses, streets, and some commercial buildings.

Ref#: 57670

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER
RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: 302-739-9944
FAX: 302-739-7764



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AND PERMIT RECEIVED BEFORE
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PERMIT #:

WELL COMPLETION REPORT

MAIL TO:

WATER SUPPLY SECTION
DIVISION OF WATER
RESOURCES
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PHONE: 302-739-9944
FAX: 302-739-7764



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PAGE # ____ OF ____ PAGES

PERMIT #:

FORMATION LOG

Formation Type:	Medium Sand	Other:
Formation Type With:	Clay	Other:
From:	0.00	To: 15.00
Color:	Brown	
Texture	Medium	Other:
To:	Medium	Other:
Cement:		Other
Sorting:		Other:
Hardness:		Other:
Comment:		

Formation Type:	Gravel	Other:
Formation Type With:	Silt	Other:
From:	15.00	To: 25.00
Color:	Grey	
Texture		Other:
To:		Other:
Cement:		Other
Sorting:		Other:
Hardness:		Other:
Comment:		

Ref#: 57670

Appendix B

Low Flow Sampling Purge Logs

DATE: 1/9/23

Well ID / OU	Operable Unit	DTP	DTW	DTB	Time
MW-8R	OU-2	—	14.70	20.1	
MW-9R	OU-2	—	12.22	19.7	
MW-19R	OU-2	—	10.06	19	
MW-36D	OU-4	—	15.89	38.79	
MW-36S	OU-4	—	15.79	22.4	cap cannot be removed -
MW-50R	OU-4	—	15.44	24.5	
MW-28R	OU-5	—	9.63	19.6	
MW-48R	OU-5	—	8.29	16.5	
MW-109R	OU-5	—	15.48	16	
MW-112	OU-5	—	11.28	18.1	
MW-113R	OU-5	—	9.09	17.5	

NOTES:

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: Racer
Ref. No.: 11222397

Date: 01/10/2023
Personnel: M. Altense

Monitoring Well Data:

Well No.: MW-365
Vapour PID (ppm): 0.0
Measurement Point: TOC
Constructed Well Depth (m/ft): _____
Measured Well Depth (m/ft): _____
Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
Depth to Pump Intake (m/ft)⁽¹⁾: _____
Well Diameter, D (cm/in): 1"
Well Screen Volume, V_s (L)⁽²⁾: _____
Initial Depth to Water (m/ft): 15.79"

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁶⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1130	180			12.47	1.23	12.1	0.52	6.32	-112		
1135	180			12.90	1.24	19.7	0.36	6.33	-99		
1140	180			13.01	1.24	16.3	0.00	6.33	-99		
1145	180			13.30	1.25	13.1	0.00	6.33	-99		
1150	180			13.67	1.27	13.6	0.00	6.34	-101		
1155	180			13.84	1.30	13.9	0.00	6.44	-100		
1200	180			14.00	1.30	13.9	0.00	6.38	-160		
1205	180			14.08	1.31	13.8	0.00	6.36	-99		
1210	180			14.08	1.31	13.4	0.00	6.36	-99		

Sample ID: GW-11222397-011023-MA-03

Sample Time: 1212 Duplicate SVOL's only @ 1227

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Upon opening well lid an odor of product none detected by interface probe, purge water had a very slight sheen as well as the samples

* RB-11222397-011023-ZB-01 @ 0930

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: Racer
Ref. No.: _____

Date: 1/10/23
Personnel: ZB

Monitoring Well Data:

Well No.: MW-360
Vapour PID (ppm): 0.0
Measurement Point: TOL
Constructed Well Depth (m/ft): _____
Measured Well Depth (m/ft): 38.79
Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
Depth to Pump Intake (m/ft)⁽¹⁾: 36'
Well Diameter, D (cm/in): 1
Well Screen Volume, V_s (L)⁽²⁾: _____
Initial Depth to Water (m/ft): 15.84 69

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
11:10	180	16.59	—	13.77	0.686	5.1	1.69	6.59	-65		
11:20		—	—	14.56	0.648	337	0	6.62	-85		
11:25		16.66		14.82	0.643	283	0	6.63	-92		
11:30		—		15.29	0.637	170	0	6.64	-94		
11:35		16.58		15.22	0.636	173	0	6.64	-93		
11:40		16.60		15.22	0.636	172	0	6.65	-96		
11:45	✓	—		15.22	0.637	169	0	6.67	-95		

Sample ID: GW-11222397-011023-ZB-02 MS/MSD taken on _____ Sample Time: 1145

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: Racer
Ref. No.: 11222397

Date: 1/10/23
Personnel: ZB

Monitoring Well Data:

Well No.: MW-SOR
Vapour PID (ppm): 0.6
Measurement Point: TOC
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 24.5
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)⁽¹⁾: 23
Well Diameter, D (cm/in): 2
Well Screen Volume, V_s (L)⁽²⁾:
Initial Depth to Water (m/ft): 15.35

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
121 1220	160	—	—	14.10	0.851	<1000	2.01	6.67	-34		
1225	↓	15.49		14.41	0.968	973	0	6.67	-11		
1230		—		14.51	0.977	495	0	6.67	14		
1235		15.49		14.35	0.981	320	0	6.67	34		
1240		—		14.84	0.983	234	0	6.66	46		
1245		15.51		15.00	0.983	180	0	6.66	54		
1250		—		14.98	0.983	114	0	6.66	64		
1255		15.51		15.03	0.982	110	0	6.64	70		
1300		—		15.01	0.983	111	0	6.64	73		

Sample ID: GW-11222397-011023-ZB-05

Sample Time: 1300

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r ($r=D/2$) and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: face
Ref. No.: 1122397

Date: 01/11/23
Personnel: M. AIGUASC

Monitoring Well Data:

Well No.: MW-812
Vapour PID (ppm): 0.0
Measurement Point: TOC
Constructed Well Depth (m/ft): _____
Measured Well Depth (m/ft): _____
Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
Depth to Pump Intake (m/ft)⁽¹⁾: _____
Well Diameter, D (cm/in): _____
Well Screen Volume, V_s (L)⁽²⁾: _____
Initial Depth to Water (m/ft): 14.89

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁶⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
0955	180	14.93		15.74	0.422	140	4.00	6.74	210		
1000	180	15.04		15.85	0.416	125	4.39	6.50	208		
1005	180	15.03		15.19	0.372	44.9	4.78	6.40	206		
1010	180	15.09		16.22	0.370	37.7	4.95	6.38	207		
1015	180	15.07		16.32	0.358	11.5	4.61	6.34	207		
1020	180	15.03		16.32	0.347	3.6	4.71	6.33	208		
1025	180	15.05		16.39	0.338	0.0	4.76	6.31	209		
1030	180	15.05		16.40	0.339	0.0	4.78	6.30	211		

Sample ID: GW-1122397-011123-ZB-07 MS + MTD Taken

Sample Time: 1630

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Calibrated Horiba - auto cal solution

Lot #: 22010218

Exp.: 02/28/2023

pH: 3.94

Cond: 4.54

NTU: 0.1

DO: 15.43

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: Race
Ref. No.: 1122397

Date: 01/11/23
Personnel: _____

Monitoring Well Data:

Well No.: MW-1912
Vapour PID (ppm): 0.0
Measurement Point: JOL
Constructed Well Depth (m/ft): _____
Measured Well Depth (m/ft): _____
Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
Depth to Pump Intake (m/ft)⁽¹⁾: _____
Well Diameter, D (cm/in): _____
Well Screen Volume, V_s (L)⁽²⁾: _____
Initial Depth to Water (m/ft): 10.06



Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1205	200	10.10		14.52	0.040	52.3	0.00	6.87	-14		
1210	200	10.12		14.53	0.041	45.4	0.00	6.87	-15		
1215	200	10.09		14.78	0.057	28.0	0.00	6.95	-25		
1220	200	10.10		14.79	0.064	33.7	0.00	6.99	-27		
1225	200	10.10		14.82	0.065	33.4	0.00	7.00	-29		
1230	200	10.12		14.80	0.064	33.1	0.00	7.00	-30		

Sample ID: GW-1122397-01123-MA-08

Sample Time: 1230

Notes: GW-1122397-01123-MA-09 (duplicate)

1245

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r ($r = D/2$) and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches.
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p/V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ± 0.005 mS/cm or where conductivity >1 mS/cm ± 0.01 mS/cm.

RB-1122397-01/123-ZB-06 @ 0930

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: PACOR
Ref. No.: 1122397

Date: 1/11/23
Personnel: ZB

Monitoring Well Data:

Well No.: MW-9R
Vapour PID (ppm): 0
Measurement Point: TOL
Constructed Well Depth (m/ft): 19
Measured Well Depth (m/ft): 19.7
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)⁽¹⁾:
Well Diameter, D (cm/in): 2
Well Screen Volume, V_s (L)⁽²⁾:
Initial Depth to Water (m/ft): 12.43

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1150	190	12.69		14.84	0.998	1100	2.03	5.38	197		
1155		—		15.15	0.989	675	1.33	5.13	258		
1200		12.53		15.28	0.977	453	1.0	5.13	276		
1205		—		15.31	0.930	394	0.81	5.15	282		
1210		12.53		15.36	0.927	337	0.71	5.17	284		
1215		—		15.39	0.885	253	0.54	5.21	287		
1220		12.53		15.37	0.869	207	0.46	5.22	288		
1225	✓	—		15.34	0.868	199	0.46	5.23	288		
1230		12.53		15.36	0.868	204	0.45	5.25	289		

Sample ID: GW-1122397-01/123-ZB-10

Sample Time: 1230

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

* RB-11222397-01123 - ZB-11 @ 1320

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: Racer
Ref. No.: _____

Date: 1/11/23
Personnel: ZB

Monitoring Well Data:

Well No.: MW-112
Vapour PID (ppm): 0
Measurement Point: TDC
Constructed Well Depth (m/ft): 16.5
Measured Well Depth (m/ft): _____
Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
Depth to Pump Intake (m/ft)⁽¹⁾: _____
Well Diameter, D (cm/in): _____
Well Screen Volume, V_s (L)⁽²⁾: _____
Initial Depth to Water (m/ft): 11.37

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1330	200	—		14.59	1.11	341	0	6.42	163		
1345		12.26		14.82	1.10	267	0	6.47	99		
1350		—		15.00	1.10	165	0	6.47	102		
1355		12.34		15.18	1.10	130	0	6.47	101		
1400		—		15.13	1.10	129	0	6.48	99		
1405		12.40		15.12	1.10	125	0	6.49	102		

Sample ID: GW-11222397-01123-ZB-12 MS/MSD taken

Sample Time: 1405

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches.
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Monitoring Well Record for Low-Flow Purging
(Form SP-09)

Project Data:

Project Name: RACER
Ref. No.: 1122399

Date: 01/11/23
Personnel: M. Aikens

Monitoring Well Data:

Well No.: MW-48R
Vapour PID (ppm): 0.0
Measurement Point: TOL
Constructed Well Depth (m/ft): _____
Measured Well Depth (m/ft): _____
Depth of Sediment (m/ft): _____

Saturated Screen Length (m/ft): _____
Depth to Pump Intake (m/ft)⁽¹⁾: _____
Well Diameter, D (cm/in): _____
Well Screen Volume, V_s (L)⁽²⁾: _____
Initial Depth to Water (m/ft): 8.29

Time	Pumping Rate (mL/min)	Depth to Water (m/ft)	Drawdown from Initial Water Level ⁽³⁾ (m/ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
1345	160	8.34		12.00	1.10	729	0.00	6.76	57		
1350	160	8.34		11.99	1.11	17.9	0.00	6.79	86		
1355	160	8.37		12.00	1.11	16.4	0.00	6.79	88		
1400	160	8.36		11.99	1.11	6.3	0.00	6.84	93		

Sample ID: GW - 1122397 - 011123 - MA - 13

Sample Time: 1400

Notes: GW - 1122397 - 011123 - MA - 14

1415

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Project Data:

Date: 01/12/23
Personnel: M. Alfense

Monitoring Well Data:

Saturated Screen Length (m/ft): _____
 Depth to Pump Intake (m/ft)⁽¹⁾: _____
 Well Diameter, D (cm/in): _____
 Well Screen Volume, V_s (L)⁽²⁾: _____
 Initial Depth to Water (m/ft): 9.09

[illegible]

Sample Time: 1040

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches. For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r (r=D/2) and L are in cm.
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s .
- (5) For conductivity, the average value of three readings $<1 \text{ mS/cm} \pm 0.005 \text{ mS/cm}$ or where conductivity $>1 \text{ mS/cm} \pm 0.01 \text{ mS/cm}$.

Calibrated Horiba pH: 4.00
Cond: 4.50
NTU: 0.0
DO: 13.15

Project Data:

Date: 01/12/13
Personnel: M. Alfense

Well No.: MW-109R

Vapour PID (ppm): 0.0
Measurement Point: Top
Constructed Well Depth (m/ft):
Measured Well Depth (m/ft): 16
Depth of Sediment (m/ft):

Saturated Screen Length (m/ft):
Depth to Pump Intake (m/ft)⁽¹⁾:
Well Diameter, D (cm/in):
Well Screen Volume, V_s (L)⁽²⁾:
Initial Depth to Water (m/ft): 15.48

Sample ID:

GW-11222397-G11223-MA-10

Sample Time: 1145

Notes:

- Notes:
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
 - (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in mL, where r ($r=D/2$) and L are in cm.
For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
 - (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 500 mL/min.
 - (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p/V_s .
 - (5) For conductivity, the average value of three readings <1 mS/cm ± 0.005 mS/cm or where conductivity >1 mS/cm ± 0.01 mS/cm.

stabilizing), No. of Well Screen Volumes Pumped - 4.114
For conductivity, the average value of three readings $< 1 \text{ mS/cm} \pm 0.005 \text{ mS/cm}$ or where conductivity $> 1 \text{ mS/cm} \pm 0.01 \text{ mS/cm}$.

★ Well began to dry out, about 4.114 took third reading and turned off pump to see if well would recover, after 25 min the well had recovered to 15.39 was able to collect both samples before well ran dry.

August 8, 2017

**Environment Testing
America**

TAL-8210

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact		Project Manager: <u>Francis R</u>		Site Contact:		Date: <u>11/1/23</u>		COC No:					
Company Name: <u>GHD SERVICES</u>		Tel/Email: <u>215-553-3281</u>		Lab Contact:		Carrier: <u>Exel</u>		1 of 1 COCs					
Address: <u>410 Eagleview Blvd</u>		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) <u>8260 VOC</u> <u>6020/7470 DIGITAL IONS</u> <u>8200-GAS MN FULL RPT</u> <u>8200-BENTON & TEE</u>				Sampler: <u>2 BOSTON 215 776-4111</u>					
City/State/Zip: <u>FAIR PA</u>		☐ CALENDAR DAYS ☐ WORKING DAYS						For Lab Use Only:					
Phone: <u>215 776-0177</u>		TAT if different from Below <u>215 776-0177</u>						Walk-in Client:					
Fax:		☐ 2 weeks						Lab Sampling:					
Project Name: <u>ROCK 1122397</u>		☐ 1 week											
Site:		☐ 2 days						Job / SDG No.:					
P O #		☐ 1 day											
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes:						
RB-1122397-011123-ZB-06		11/1/23	0930	G	RB	3							
GW-1122397-011123-ZB-07			1030	G	GW	9							
GW-1122397-011123-MA-08			1230	G	GW	3							
GW-1122397-011123-MA-09			1245	G	GW	3							
GW-1122397-011123-ZB-10			1230	G	GW	3							
RB-1122397-011123-ZB-11			1320	G	RB	2							
GW-1122397-011123-ZB-12			1405	G	GW	6							
GW-1122397-011123-MA-13			1400	G	GW	5							
GW-1122397-011123-MA-14			1415	G	GW	2							
TRIP BLANK		11/5/22	-	-	RB	2							
TRIP BLANK		11/5/22	-	-	RB	2							
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)											
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.		☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown							☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months				
Special Instructions/QC Requirements & Comments: <u>NO/NOV 11/23 @ ZB 07 & ZB 12</u>													
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____		Corr'd: _____		Therm ID No.:					
Relinquished by: <u>Z. BOSON</u>		Company: <u>GHD</u>		Date/Time: <u>11/1/23 1445</u>		Received by: <u>[Signature]</u>		Company: <u>GTH</u>					
Relinquished by:		Company:		Date/Time:		Received by:		Company:					
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:					

**Environment Testing
America**

TAL-8210

Regulatory Program:

Client Contact		Project Manager: Maffei, Peter		Site Contact:		Date: 10/18		COC No:			
Company Name: GHD		Tel/Email: Maffei@ghd.com		Lab Contact:		Carrier: FedEx		_____ of _____ COCs			
Address: 410 Eggert Ave Bldg		Analysis Turnaround Time								Sampler:	
City/State/Zip: Ewing PA 19341		☐ CALENDAR DAYS ☐ WORKING DAYS								For Lab Use Only:	
Phone: 215-776-0127		TAT if different from Below _____								Walk-in Client:	
Fax:		☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day								Lab Sampling:	
Project Name: Racer - H222397										Job / SDG No.:	
Site:											
P O #											
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	TCL VOC's 8260	TCL SVOC's 8270	Sample Specific Notes:	
R3-H222397-011023-ZB-01	11/1/23	0930	G	RB	5	NN	3	2			
GW-H222397-011023-ZB-02		1145	G	GW	9	NY	3	6			
GW-H222397-011023-MA-03		1212	G	GW	5	NN	3	2			
GW-H222397-011023-MA-04		1227	G	GW	2	NN		2			
GW-H222397-011023-ZB-05		1300	G	GW	5	NN	3	2			
TRIP BLANKS	11/5/22	-	-	TB	2						
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____											
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months					
Special Instructions/QC Requirements & Comments: MS/MSD 1-8260 @ GW H222397 011023-ZB-02 ON SVOC 2 ONLY											
Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____		Corr'd: _____		Therm ID No.: _____				
Relinquished by: Z. P. Sarno/GHD	Company: GHD		Date/Time: 11/1/23/1330	Received by: [Signature]		Company: ETA		Date/Time: 11/1/23 1330			
Relinquished by:	Company:		Date/Time:	Received by:		Company:		Date/Time:			
Relinquished by:	Company:		Date/Time:	Received in Laboratory by:		Company:		Date/Time:			

614809 @eurofins

Environment Testing
America

2000-2001

Regulatory Program: ☐ CMA ☐ SECOS ☐ ASRA ☐ Other[illegible]

Appendix C

Level 2 Laboratory Analytical Reports

ANALYTICAL REPORT

PREPARED FOR

Attn: Michelle Kukta
GHD Services Inc.
2055 Niagara Falls Blvd., Suite 3
Niagara Falls, New York 14304

Generated 1/19/2023 9:29:54 AM

JOB DESCRIPTION

11222397- RACER

JOB NUMBER

460-272726-1

Eurofins Edison

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing Northeast, LLC Edison and its client. All questions regarding this report should be directed to the Eurofins Environment Testing Northeast, LLC Edison Project Manager or designee who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northeast, LLC Project Manager.

Authorization



Generated
1/19/2023 9:29:54 AM

Authorized for release by
Elizabeth Flannery, Project Manager I
Elizabeth.Flannery@et.eurofinsus.com
(732)549-3900

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	8
Client Sample Results	10
Surrogate Summary	24
QC Sample Results	25
QC Association Summary	43
Lab Chronicle	44
Certification Summary	46
Method Summary	49
Sample Summary	50
Chain of Custody	51
Receipt Checklists	53



Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

GC/MS VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
N	This flag indicates the presumptive evidence of a compound.

GC/MS Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD 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, high biased.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Job ID: 460-272726-1

Laboratory: Eurofins Edison

Narrative

CASE NARRATIVE

Client: GHD Services Inc.

Project: 11222397- RACER

Report Number: 460-272726-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 1/10/2023 8:00 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 1.4° C.

Receipt Exceptions

Per laboratory policy the Trip Blank sample date/time was changed to reflect the latest sample date/time of the sampling event.

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. No TAT recorded on the COC.

The following sample was canceled for VOCs by the client on 1/12/23: RB-11222397-011023-ZB-01 (460-272726-1).

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples GW-11222397-011023-ZB-02 (460-272726-2), GW-11222397-011023-MA-03 (460-272726-3), GW-11222397-011023-ZB-05 (460-272726-5) and TRIP BLANKS (460-272726-6) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260DEL. The samples were analyzed on 01/16/2023 and 01/17/2023.

The continuing calibration verification (CCV) associated with batch 460-888265 recovered outside acceptance criteria, low biased, for 1,2-Dibromo-3-Chloropropane. 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 continuing calibration verification (CCV) associated with batch 460-888393 recovered above the upper control limit for Bromomethane and Trichlorofluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No other difficulties were encountered during the volatiles analysis.

Case Narrative

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Job ID: 460-272726-1 (Continued)

Laboratory: Eurofins Edison (Continued)

All other quality control parameters were within the acceptance limits.

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples RB-11222397-011023-ZB-01 (460-272726-1), GW-11222397-011023-ZB-02 (460-272726-2), GW-11222397-011023-MA-03 (460-272726-3), GW-11222397-011023-MA-04 (460-272726-4) and GW-11222397-011023-ZB-05 (460-272726-5) were analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8270CDEL. The samples were prepared on 01/11/2023 and analyzed on 01/12/2023.

The continuing calibration verification (CCV) analyzed in batch 460-887803 was outside the method criteria for the following analyte(s): Benzaldehyde. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The continuing calibration verification (CCV) associated with batch 460-887803 recovered above the upper control limit for 2,4-Dinitrophenol and 4,6-Dinitro-2-methylphenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The closing continuing calibration verification (CCVC) associated with batch 460-887803 recovered above the upper control limit for 2,4-Dinitrophenol and 4,6-Dinitro-2-methylphenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The capping continuing calibration verification (CCV) analyzed in batch 460-887803 was outside the method criteria for the following analyte(s): Benzaldehyde. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 460-887672 and analytical batch 460-887803 recovered outside control limits for the following analytes: 2,4-Dinitrophenol, 2,6-Dinitrotoluene, 2,4-Dinitrotoluene, 4,6-Dinitro-2-methylphenol and 4-Nitroaniline. These analytes were biased high in the LCS/LCSD and were not detected in the associated samples; therefore, the data have been reported.

Six surrogates are used for this analysis. The laboratory's SOP allows one acid and one base of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following samples contained an allowable number of surrogate compounds outside limits: RB-11222397-011023-ZB-01 (460-272726-1), GW-11222397-011023-ZB-02 (460-272726-2) and GW-11222397-011023-ZB-05 (460-272726-5). These results have been reported and qualified.

2,4,6-Tribromophenol (Surr) failed the surrogate recovery criteria high for RB-11222397-011023-ZB-01 (460-272726-1).
2,4,6-Tribromophenol (Surr) failed the surrogate recovery criteria high for GW-11222397-011023-ZB-02 (460-272726-2).
2,4,6-Tribromophenol (Surr) failed the surrogate recovery criteria high for GW-11222397-011023-ZB-05 (460-272726-5).
2,4,6-Tribromophenol (Surr) failed the surrogate recovery criteria high for GW-11222397-011023-ZB-02MS (460-272726-2MS).
2,4,6-Tribromophenol (Surr) failed the surrogate recovery criteria high for GW-11222397-011023-ZB-02MSD (460-272726-2MSD).

2,4-Dinitrophenol and 4,6-Dinitro-2-methylphenol failed the recovery criteria high for LCS 460-887672/2-A. 2,4-Dinitrophenol, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, 4,6-Dinitro-2-methylphenol and 4-Nitroaniline failed the recovery criteria high for LCSD 460-887672/3-A.

Several analytes failed the recovery criteria high for the MS of sample GW-11222397-011023-ZB-02MS (460-272726-2) in batch 460-887803.

Several analytes failed the recovery criteria high for the MSD of sample GW-11222397-011023-ZB-02MSD (460-272726-2) in batch 460-887803. Caprolactam exceeded the RPD limit.

Refer to the QC report for details.

Case Narrative

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Job ID: 460-272726-1 (Continued)

Laboratory: Eurofins Edison (Continued)

No other difficulties were encountered during the semivolatiles analysis.

All other quality control parameters were within the acceptance limits.

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Detection Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Client Sample ID: RB-11222397-011023-ZB-01

Lab Sample ID: 460-272726-1

No Detections.

Client Sample ID: GW-11222397-011023-ZB-02

Lab Sample ID: 460-272726-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	65		1.0	0.37	ug/L	1		8260B	Total/NA
Acetone	9.7		5.0	4.4	ug/L	1		8260B	Total/NA
Benzene	37		1.0	0.20	ug/L	1		8260B	Total/NA
Chloromethane	7.9		1.0	0.40	ug/L	1		8260B	Total/NA
Cyclohexane	100		1.0	0.32	ug/L	1		8260B	Total/NA
Ethylbenzene	210		1.0	0.30	ug/L	1		8260B	Total/NA
Isopropylbenzene	17		1.0	0.34	ug/L	1		8260B	Total/NA
Methylcyclohexane	52		1.0	0.71	ug/L	1		8260B	Total/NA
Toluene	130		1.0	0.38	ug/L	1		8260B	Total/NA
Xylenes, Total	480		2.0	0.65	ug/L	1		8260B	Total/NA
2,4-Dimethylphenol	1.7	J	10	0.62	ug/L	1		8270C	Total/NA
2-Methylnaphthalene	7.3	J	10	0.53	ug/L	1		8270C	Total/NA
4-Methylphenol	0.75	J	10	0.65	ug/L	1		8270C	Total/NA
Naphthalene	57		2.0	0.54	ug/L	1		8270C	Total/NA

Client Sample ID: GW-11222397-011023-MA-03

Lab Sample ID: 460-272726-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	160		1.0	0.37	ug/L	1		8260B	Total/NA
2-Butanone (MEK)	7.9		5.0	1.9	ug/L	1		8260B	Total/NA
Acetone	15		5.0	4.4	ug/L	1		8260B	Total/NA
Benzene	140		1.0	0.20	ug/L	1		8260B	Total/NA
Cyclohexane	110		1.0	0.32	ug/L	1		8260B	Total/NA
Ethylbenzene	340		1.0	0.30	ug/L	1		8260B	Total/NA
Isopropylbenzene	11		1.0	0.34	ug/L	1		8260B	Total/NA
Methyl tert-butyl ether	0.28	J	1.0	0.22	ug/L	1		8260B	Total/NA
Methylcyclohexane	36		1.0	0.71	ug/L	1		8260B	Total/NA
Toluene	49		1.0	0.38	ug/L	1		8260B	Total/NA
Xylenes, Total	480		2.0	0.65	ug/L	1		8260B	Total/NA
1,1'-Biphenyl	5.0	J	10	1.2	ug/L	1		8270C	Total/NA
2,4-Dimethylphenol	19		10	0.62	ug/L	1		8270C	Total/NA
2-Methylnaphthalene	64		10	0.53	ug/L	1		8270C	Total/NA
2-Methylphenol	9.6	J	10	0.67	ug/L	1		8270C	Total/NA
Dibenzofuran	1.8	J	10	1.1	ug/L	1		8270C	Total/NA
Fluorene	2.2	J	10	0.91	ug/L	1		8270C	Total/NA
Naphthalene	92		2.0	0.54	ug/L	1		8270C	Total/NA
Phenanthrene	1.6	J	10	1.3	ug/L	1		8270C	Total/NA

Client Sample ID: GW-11222397-011023-MA-04

Lab Sample ID: 460-272726-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1'-Biphenyl	4.6	J	10	1.2	ug/L	1		8270C	Total/NA
2,4-Dimethylphenol	16		10	0.62	ug/L	1		8270C	Total/NA
2-Methylnaphthalene	63		10	0.53	ug/L	1		8270C	Total/NA
2-Methylphenol	7.8	J	10	0.67	ug/L	1		8270C	Total/NA
Acenaphthene	1.3	J	10	1.1	ug/L	1		8270C	Total/NA
Dibenzofuran	1.9	J	10	1.1	ug/L	1		8270C	Total/NA
Fluorene	2.2	J	10	0.91	ug/L	1		8270C	Total/NA
Naphthalene	91		2.0	0.54	ug/L	1		8270C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Edison

Detection Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Client Sample ID: GW-11222397-011023-MA-04 (Continued)

Lab Sample ID: 460-272726-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Phenanthrene	1.5	J	10	1.3	ug/L	1		8270C	Total/NA

Client Sample ID: GW-11222397-011023-ZB-05

Lab Sample ID: 460-272726-5

No Detections.

Client Sample ID: TRIP BLANKS

Lab Sample ID: 460-272726-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Edison

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Client Sample ID: RB-11222397-011023-ZB-01

Lab Sample ID: 460-272726-1

Date Collected: 01/10/23 09:30

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8270C - Semivolatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	1.2	U	10	1.2	ug/L		01/11/23 19:28	01/12/23 16:34	1
2,2'-oxybis[1-chloropropane]	0.63	U	10	0.63	ug/L		01/11/23 19:28	01/12/23 16:34	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		01/11/23 19:28	01/12/23 16:34	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		01/11/23 19:28	01/12/23 16:34	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		01/11/23 19:28	01/12/23 16:34	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		01/11/23 19:28	01/12/23 16:34	1
2,4-Dinitrophenol	2.6	U **	40	2.6	ug/L		01/11/23 19:28	01/12/23 16:34	1
2,4-Dinitrotoluene	1.0	U **	10	1.0	ug/L		01/11/23 19:28	01/12/23 16:34	1
2,6-Dinitrotoluene	0.83	U **	2.0	0.83	ug/L		01/11/23 19:28	01/12/23 16:34	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		01/11/23 19:28	01/12/23 16:34	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		01/11/23 19:28	01/12/23 16:34	1
2-Methylnaphthalene	0.53	U	10	0.53	ug/L		01/11/23 19:28	01/12/23 16:34	1
2-Methylphenol	0.67	U	10	0.67	ug/L		01/11/23 19:28	01/12/23 16:34	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		01/11/23 19:28	01/12/23 16:34	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 16:34	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		01/11/23 19:28	01/12/23 16:34	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		01/11/23 19:28	01/12/23 16:34	1
4,6-Dinitro-2-methylphenol	3.0	U **	20	3.0	ug/L		01/11/23 19:28	01/12/23 16:34	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 16:34	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		01/11/23 19:28	01/12/23 16:34	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		01/11/23 19:28	01/12/23 16:34	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		01/11/23 19:28	01/12/23 16:34	1
4-Methylphenol	0.65	U	10	0.65	ug/L		01/11/23 19:28	01/12/23 16:34	1
4-Nitroaniline	1.2	U **	10	1.2	ug/L		01/11/23 19:28	01/12/23 16:34	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		01/11/23 19:28	01/12/23 16:34	1
Acenaphthene	1.1	U	10	1.1	ug/L		01/11/23 19:28	01/12/23 16:34	1
Acenaphthylene	0.82	U	10	0.82	ug/L		01/11/23 19:28	01/12/23 16:34	1
Acetophenone	2.3	U	10	2.3	ug/L		01/11/23 19:28	01/12/23 16:34	1
Anthracene	1.3	U	10	1.3	ug/L		01/11/23 19:28	01/12/23 16:34	1
Atrazine	1.3	U	2.0	1.3	ug/L		01/11/23 19:28	01/12/23 16:34	1
Benzaldehyde	2.1	U	10	2.1	ug/L		01/11/23 19:28	01/12/23 16:34	1
Benzo[a]anthracene	0.59	U	1.0	0.59	ug/L		01/11/23 19:28	01/12/23 16:34	1
Benzo[a]pyrene	0.41	U	1.0	0.41	ug/L		01/11/23 19:28	01/12/23 16:34	1
Benzo[b]fluoranthene	0.68	U	2.0	0.68	ug/L		01/11/23 19:28	01/12/23 16:34	1
Benzo[g,h,i]perylene	0.70	U	10	0.70	ug/L		01/11/23 19:28	01/12/23 16:34	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		01/11/23 19:28	01/12/23 16:34	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		01/11/23 19:28	01/12/23 16:34	1
Bis(2-chloroethyl)ether	0.63	U	1.0	0.63	ug/L		01/11/23 19:28	01/12/23 16:34	1
Bis(2-ethylhexyl) phthalate	0.80	U	2.0	0.80	ug/L		01/11/23 19:28	01/12/23 16:34	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		01/11/23 19:28	01/12/23 16:34	1
Caprolactam	2.2	U	10	2.2	ug/L		01/11/23 19:28	01/12/23 16:34	1
Carbazole	0.68	U	10	0.68	ug/L		01/11/23 19:28	01/12/23 16:34	1
Chrysene	0.91	U	2.0	0.91	ug/L		01/11/23 19:28	01/12/23 16:34	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		01/11/23 19:28	01/12/23 16:34	1
Dibenzofuran	1.1	U	10	1.1	ug/L		01/11/23 19:28	01/12/23 16:34	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		01/11/23 19:28	01/12/23 16:34	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		01/11/23 19:28	01/12/23 16:34	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		01/11/23 19:28	01/12/23 16:34	1
Di-n-octyl phthalate	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 16:34	1

Eurolins Edison

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Client Sample ID: RB-11222397-011023-ZB-01

Lab Sample ID: 460-272726-1

Date Collected: 01/10/23 09:30

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8270C - Semivolatile Organics (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	0.84	U	10	0.84	ug/L		01/11/23 19:28	01/12/23 16:34	1
Fluorene	0.91	U	10	0.91	ug/L		01/11/23 19:28	01/12/23 16:34	1
Hexachlorobenzene	0.40	U	1.0	0.40	ug/L		01/11/23 19:28	01/12/23 16:34	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		01/11/23 19:28	01/12/23 16:34	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		01/11/23 19:28	01/12/23 16:34	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		01/11/23 19:28	01/12/23 16:34	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		01/11/23 19:28	01/12/23 16:34	1
Isophorone	0.80	U	10	0.80	ug/L		01/11/23 19:28	01/12/23 16:34	1
Naphthalene	0.54	U	2.0	0.54	ug/L		01/11/23 19:28	01/12/23 16:34	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		01/11/23 19:28	01/12/23 16:34	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		01/11/23 19:28	01/12/23 16:34	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		01/11/23 19:28	01/12/23 16:34	1
Pentachlorophenol	1.4	U	20	1.4	ug/L		01/11/23 19:28	01/12/23 16:34	1
Phenanthrene	1.3	U	10	1.3	ug/L		01/11/23 19:28	01/12/23 16:34	1
Phenol	0.29	U	10	0.29	ug/L		01/11/23 19:28	01/12/23 16:34	1
Pyrene	1.6	U	10	1.6	ug/L		01/11/23 19:28	01/12/23 16:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	152	S1+	37 - 150	01/11/23 19:28	01/12/23 16:34	1
2-Fluorobiphenyl	118		46 - 139	01/11/23 19:28	01/12/23 16:34	1
2-Fluorophenol (Surr)	57		19 - 80	01/11/23 19:28	01/12/23 16:34	1
Nitrobenzene-d5 (Surr)	110		52 - 137	01/11/23 19:28	01/12/23 16:34	1
Phenol-d5 (Surr)	39		10 - 56	01/11/23 19:28	01/12/23 16:34	1
Terphenyl-d14 (Surr)	114		22 - 150	01/11/23 19:28	01/12/23 16:34	1

Client Sample ID: GW-11222397-011023-ZB-02

Lab Sample ID: 460-272726-2

Date Collected: 01/10/23 11:45

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/17/23 03:27	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			01/17/23 03:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	1.0	0.31	ug/L			01/17/23 03:27	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			01/17/23 03:27	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			01/17/23 03:27	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			01/17/23 03:27	1
1,2,4-Trichlorobenzene	0.37	U	1.0	0.37	ug/L			01/17/23 03:27	1
1,2,4-Trimethylbenzene	65		1.0	0.37	ug/L			01/17/23 03:27	1
1,2-Dibromo-3-Chloropropane	0.38	U	1.0	0.38	ug/L			01/17/23 03:27	1
1,2-Dibromoethane	0.50	U	1.0	0.50	ug/L			01/17/23 03:27	1
1,2-Dichlorobenzene	0.21	U	1.0	0.21	ug/L			01/17/23 03:27	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			01/17/23 03:27	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			01/17/23 03:27	1
1,3-Dichlorobenzene	0.34	U	1.0	0.34	ug/L			01/17/23 03:27	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			01/17/23 03:27	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			01/17/23 03:27	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			01/17/23 03:27	1
4-Methyl-2-pentanone (MIBK)	1.3	U	5.0	1.3	ug/L			01/17/23 03:27	1
Acetone	9.7		5.0	4.4	ug/L			01/17/23 03:27	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Client Sample ID: GW-11222397-011023-ZB-02

Lab Sample ID: 460-272726-2

Date Collected: 01/10/23 11:45

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	37		1.0	0.20	ug/L			01/17/23 03:27	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			01/17/23 03:27	1
Bromoform	0.54	U	1.0	0.54	ug/L			01/17/23 03:27	1
Bromomethane	0.55	U	1.0	0.55	ug/L			01/17/23 03:27	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			01/17/23 03:27	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			01/17/23 03:27	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			01/17/23 03:27	1
Chloroethane	0.32	U	1.0	0.32	ug/L			01/17/23 03:27	1
Chloroform	0.33	U	1.0	0.33	ug/L			01/17/23 03:27	1
Chloromethane	7.9		1.0	0.40	ug/L			01/17/23 03:27	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			01/17/23 03:27	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/17/23 03:27	1
Cyclohexane	100		1.0	0.32	ug/L			01/17/23 03:27	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			01/17/23 03:27	1
Dichlorodifluoromethane	0.31	U	1.0	0.31	ug/L			01/17/23 03:27	1
Ethylbenzene	210		1.0	0.30	ug/L			01/17/23 03:27	1
Isopropylbenzene	17		1.0	0.34	ug/L			01/17/23 03:27	1
Methyl acetate	0.79	U	5.0	0.79	ug/L			01/17/23 03:27	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			01/17/23 03:27	1
Methylcyclohexane	52		1.0	0.71	ug/L			01/17/23 03:27	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			01/17/23 03:27	1
Styrene	0.42	U	1.0	0.42	ug/L			01/17/23 03:27	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			01/17/23 03:27	1
Toluene	130		1.0	0.38	ug/L			01/17/23 03:27	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			01/17/23 03:27	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/17/23 03:27	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			01/17/23 03:27	1
Trichlorofluoromethane	0.32	U	1.0	0.32	ug/L			01/17/23 03:27	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			01/17/23 03:27	1
Xylenes, Total	480		2.0	0.65	ug/L			01/17/23 03:27	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Butane, 2-methyl-	590	J N	ug/L		1.76	78-78-4		01/17/23 03:27	1
Pentane	280	J N	ug/L		1.91	109-66-0		01/17/23 03:27	1
Cyclopropane, 1,2-dimethyl-, cis-	190	J N	ug/L		2.10	930-18-7		01/17/23 03:27	1
Pentane, 2-methyl-	250	J N	ug/L		2.49	107-83-5		01/17/23 03:27	1
Cyclopentane, methyl-	320	J N	ug/L		3.32	96-37-7		01/17/23 03:27	1
Benzene, 1-ethyl-3-methyl-	220	J N	ug/L		9.70	620-14-4		01/17/23 03:27	1
Benzene, 1-ethyl-2-methyl-	150	J N	ug/L		9.96	611-14-3		01/17/23 03:27	1
Benzene, 1,2,3-trimethyl-	160	J N	ug/L		10.48	526-73-8		01/17/23 03:27	1
Benzene, 1-ethenyl-2-methyl-	320	J N	ug/L		10.64	611-15-4		01/17/23 03:27	1
1H-Indene, 2,3-dihydro-4-methyl-	170	J N	ug/L		11.68	824-22-6		01/17/23 03:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		70 - 128		01/17/23 03:27	1
4-Bromofluorobenzene	100		76 - 120		01/17/23 03:27	1
Dibromofluoromethane (Surr)	91		77 - 124		01/17/23 03:27	1
Toluene-d8 (Surr)	94		80 - 120		01/17/23 03:27	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Client Sample ID: GW-11222397-011023-ZB-02

Lab Sample ID: 460-272726-2

Date Collected: 01/10/23 11:45

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8270C - Semivolatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	1.2	U F1	10	1.2	ug/L		01/11/23 19:28	01/12/23 16:13	1
2,2'-oxybis[1-chloropropane]	0.63	U	10	0.63	ug/L		01/11/23 19:28	01/12/23 16:13	1
2,4,5-Trichlorophenol	0.88	U F1	10	0.88	ug/L		01/11/23 19:28	01/12/23 16:13	1
2,4,6-Trichlorophenol	0.86	U F1	10	0.86	ug/L		01/11/23 19:28	01/12/23 16:13	1
2,4-Dichlorophenol	1.1	U F1	10	1.1	ug/L		01/11/23 19:28	01/12/23 16:13	1
2,4-Dimethylphenol	1.7	J	10	0.62	ug/L		01/11/23 19:28	01/12/23 16:13	1
2,4-Dinitrophenol	2.6	U F1 **	40	2.6	ug/L		01/11/23 19:28	01/12/23 16:13	1
2,4-Dinitrotoluene	1.0	U F1 **	10	1.0	ug/L		01/11/23 19:28	01/12/23 16:13	1
2,6-Dinitrotoluene	0.83	U F1 **	2.0	0.83	ug/L		01/11/23 19:28	01/12/23 16:13	1
2-Chloronaphthalene	1.2	U F1	10	1.2	ug/L		01/11/23 19:28	01/12/23 16:13	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		01/11/23 19:28	01/12/23 16:13	1
2-Methylnaphthalene	7.3	J	10	0.53	ug/L		01/11/23 19:28	01/12/23 16:13	1
2-Methylphenol	0.67	U	10	0.67	ug/L		01/11/23 19:28	01/12/23 16:13	1
2-Nitroaniline	0.47	U F1	10	0.47	ug/L		01/11/23 19:28	01/12/23 16:13	1
2-Nitrophenol	0.75	U F1	10	0.75	ug/L		01/11/23 19:28	01/12/23 16:13	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		01/11/23 19:28	01/12/23 16:13	1
3-Nitroaniline	1.9	U F1	10	1.9	ug/L		01/11/23 19:28	01/12/23 16:13	1
4,6-Dinitro-2-methylphenol	3.0	U F1 **	20	3.0	ug/L		01/11/23 19:28	01/12/23 16:13	1
4-Bromophenyl phenyl ether	0.75	U F1	10	0.75	ug/L		01/11/23 19:28	01/12/23 16:13	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		01/11/23 19:28	01/12/23 16:13	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		01/11/23 19:28	01/12/23 16:13	1
4-Chlorophenyl phenyl ether	1.3	U F1	10	1.3	ug/L		01/11/23 19:28	01/12/23 16:13	1
4-Methylphenol	0.75	J	10	0.65	ug/L		01/11/23 19:28	01/12/23 16:13	1
4-Nitroaniline	1.2	U F1 **	10	1.2	ug/L		01/11/23 19:28	01/12/23 16:13	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		01/11/23 19:28	01/12/23 16:13	1
Acenaphthene	1.1	U F1	10	1.1	ug/L		01/11/23 19:28	01/12/23 16:13	1
Acenaphthylene	0.82	U F1	10	0.82	ug/L		01/11/23 19:28	01/12/23 16:13	1
Acetophenone	2.3	U F1	10	2.3	ug/L		01/11/23 19:28	01/12/23 16:13	1
Anthracene	1.3	U F1	10	1.3	ug/L		01/11/23 19:28	01/12/23 16:13	1
Atrazine	1.3	U F1	2.0	1.3	ug/L		01/11/23 19:28	01/12/23 16:13	1
Benzaldehyde	2.1	U	10	2.1	ug/L		01/11/23 19:28	01/12/23 16:13	1
Benzo[a]anthracene	0.59	U F1	1.0	0.59	ug/L		01/11/23 19:28	01/12/23 16:13	1
Benzo[a]pyrene	0.41	U	1.0	0.41	ug/L		01/11/23 19:28	01/12/23 16:13	1
Benzo[b]fluoranthene	0.68	U F1	2.0	0.68	ug/L		01/11/23 19:28	01/12/23 16:13	1
Benzo[g,h,i]perylene	0.70	U F1	10	0.70	ug/L		01/11/23 19:28	01/12/23 16:13	1
Benzo[k]fluoranthene	0.67	U F1	1.0	0.67	ug/L		01/11/23 19:28	01/12/23 16:13	1
Bis(2-chloroethoxy)methane	0.59	U F1	10	0.59	ug/L		01/11/23 19:28	01/12/23 16:13	1
Bis(2-chloroethyl)ether	0.63	U	1.0	0.63	ug/L		01/11/23 19:28	01/12/23 16:13	1
Bis(2-ethylhexyl) phthalate	0.80	U F1	2.0	0.80	ug/L		01/11/23 19:28	01/12/23 16:13	1
Butyl benzyl phthalate	0.85	U F1	10	0.85	ug/L		01/11/23 19:28	01/12/23 16:13	1
Caprolactam	2.2	U F2	10	2.2	ug/L		01/11/23 19:28	01/12/23 16:13	1
Carbazole	0.68	U F1	10	0.68	ug/L		01/11/23 19:28	01/12/23 16:13	1
Chrysene	0.91	U F1	2.0	0.91	ug/L		01/11/23 19:28	01/12/23 16:13	1
Dibenz(a,h)anthracene	0.72	U F1	1.0	0.72	ug/L		01/11/23 19:28	01/12/23 16:13	1
Dibenzofuran	1.1	U F1	10	1.1	ug/L		01/11/23 19:28	01/12/23 16:13	1
Diethyl phthalate	0.98	U F1	10	0.98	ug/L		01/11/23 19:28	01/12/23 16:13	1
Dimethyl phthalate	0.77	U F1	10	0.77	ug/L		01/11/23 19:28	01/12/23 16:13	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		01/11/23 19:28	01/12/23 16:13	1
Di-n-octyl phthalate	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 16:13	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Client Sample ID: GW-11222397-011023-ZB-02

Lab Sample ID: 460-272726-2

Date Collected: 01/10/23 11:45

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8270C - Semivolatile Organics (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	0.84	U F1	10	0.84	ug/L		01/11/23 19:28	01/12/23 16:13	1
Fluorene	0.91	U F1	10	0.91	ug/L		01/11/23 19:28	01/12/23 16:13	1
Hexachlorobenzene	0.40	U F1	1.0	0.40	ug/L		01/11/23 19:28	01/12/23 16:13	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		01/11/23 19:28	01/12/23 16:13	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		01/11/23 19:28	01/12/23 16:13	1
Hexachloroethane	0.80	U F1	2.0	0.80	ug/L		01/11/23 19:28	01/12/23 16:13	1
Indeno[1,2,3-cd]pyrene	0.94	U F1	2.0	0.94	ug/L		01/11/23 19:28	01/12/23 16:13	1
Isophorone	0.80	U F1	10	0.80	ug/L		01/11/23 19:28	01/12/23 16:13	1
Naphthalene	57		2.0	0.54	ug/L		01/11/23 19:28	01/12/23 16:13	1
Nitrobenzene	0.57	U F1	1.0	0.57	ug/L		01/11/23 19:28	01/12/23 16:13	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		01/11/23 19:28	01/12/23 16:13	1
N-Nitrosodiphenylamine	0.89	U F1	10	0.89	ug/L		01/11/23 19:28	01/12/23 16:13	1
Pentachlorophenol	1.4	U F1	20	1.4	ug/L		01/11/23 19:28	01/12/23 16:13	1
Phenanthrene	1.3	U F1	10	1.3	ug/L		01/11/23 19:28	01/12/23 16:13	1
Phenol	0.29	U	10	0.29	ug/L		01/11/23 19:28	01/12/23 16:13	1
Pyrene	1.6	U F1	10	1.6	ug/L		01/11/23 19:28	01/12/23 16:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	161	S1+	37 - 150	01/11/23 19:28	01/12/23 16:13	1
2-Fluorobiphenyl	119		46 - 139	01/11/23 19:28	01/12/23 16:13	1
2-Fluorophenol (Surr)	59		19 - 80	01/11/23 19:28	01/12/23 16:13	1
Nitrobenzene-d5 (Surr)	114		52 - 137	01/11/23 19:28	01/12/23 16:13	1
Phenol-d5 (Surr)	37		10 - 56	01/11/23 19:28	01/12/23 16:13	1
Terphenyl-d14 (Surr)	102		22 - 150	01/11/23 19:28	01/12/23 16:13	1

Client Sample ID: GW-11222397-011023-MA-03

Lab Sample ID: 460-272726-3

Date Collected: 01/10/23 12:12

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/17/23 03:49	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			01/17/23 03:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	1.0	0.31	ug/L			01/17/23 03:49	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			01/17/23 03:49	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			01/17/23 03:49	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			01/17/23 03:49	1
1,2,4-Trichlorobenzene	0.37	U	1.0	0.37	ug/L			01/17/23 03:49	1
1,2,4-Trimethylbenzene	160		1.0	0.37	ug/L			01/17/23 03:49	1
1,2-Dibromo-3-Chloropropane	0.38	U	1.0	0.38	ug/L			01/17/23 03:49	1
1,2-Dibromoethane	0.50	U	1.0	0.50	ug/L			01/17/23 03:49	1
1,2-Dichlorobenzene	0.21	U	1.0	0.21	ug/L			01/17/23 03:49	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			01/17/23 03:49	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			01/17/23 03:49	1
1,3-Dichlorobenzene	0.34	U	1.0	0.34	ug/L			01/17/23 03:49	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			01/17/23 03:49	1
2-Butanone (MEK)	7.9		5.0	1.9	ug/L			01/17/23 03:49	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			01/17/23 03:49	1
4-Methyl-2-pentanone (MIBK)	1.3	U	5.0	1.3	ug/L			01/17/23 03:49	1
Acetone	15		5.0	4.4	ug/L			01/17/23 03:49	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Client Sample ID: GW-11222397-011023-MA-03

Lab Sample ID: 460-272726-3

Date Collected: 01/10/23 12:12

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	140		1.0	0.20	ug/L			01/17/23 03:49	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			01/17/23 03:49	1
Bromoform	0.54	U	1.0	0.54	ug/L			01/17/23 03:49	1
Bromomethane	0.55	U	1.0	0.55	ug/L			01/17/23 03:49	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			01/17/23 03:49	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			01/17/23 03:49	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			01/17/23 03:49	1
Chloroethane	0.32	U	1.0	0.32	ug/L			01/17/23 03:49	1
Chloroform	0.33	U	1.0	0.33	ug/L			01/17/23 03:49	1
Chloromethane	0.40	U	1.0	0.40	ug/L			01/17/23 03:49	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			01/17/23 03:49	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/17/23 03:49	1
Cyclohexane	110		1.0	0.32	ug/L			01/17/23 03:49	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			01/17/23 03:49	1
Dichlorodifluoromethane	0.31	U	1.0	0.31	ug/L			01/17/23 03:49	1
Ethylbenzene	340		1.0	0.30	ug/L			01/17/23 03:49	1
Isopropylbenzene	11		1.0	0.34	ug/L			01/17/23 03:49	1
Methyl acetate	0.79	U	5.0	0.79	ug/L			01/17/23 03:49	1
Methyl tert-butyl ether	0.28	J	1.0	0.22	ug/L			01/17/23 03:49	1
Methylcyclohexane	36		1.0	0.71	ug/L			01/17/23 03:49	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			01/17/23 03:49	1
Styrene	0.42	U	1.0	0.42	ug/L			01/17/23 03:49	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			01/17/23 03:49	1
Toluene	49		1.0	0.38	ug/L			01/17/23 03:49	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			01/17/23 03:49	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/17/23 03:49	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			01/17/23 03:49	1
Trichlorofluoromethane	0.32	U	1.0	0.32	ug/L			01/17/23 03:49	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			01/17/23 03:49	1
Xylenes, Total	480		2.0	0.65	ug/L			01/17/23 03:49	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Butane	300	J N	ug/L		1.46	106-97-8		01/17/23 03:49	1
Butane, 2-methyl-	480	J N	ug/L		1.76	78-78-4		01/17/23 03:49	1
Pentane	340	J N	ug/L		1.92	109-66-0		01/17/23 03:49	1
Cyclopropane, 1,2-dimethyl-, cis-	250	J N	ug/L		2.11	930-18-7		01/17/23 03:49	1
2-Pentene, 3-methyl-, (Z)-	190	J N	ug/L		3.20	922-62-3		01/17/23 03:49	1
Cyclopentane, methyl-	330	J N	ug/L		3.33	96-37-7		01/17/23 03:49	1
Benzene, 1-ethyl-3-methyl-	310	J N	ug/L		9.70	620-14-4		01/17/23 03:49	1
Benzene, 1,2,3-trimethyl-	190	J N	ug/L		10.48	526-73-8		01/17/23 03:49	1
Indane	200	J N	ug/L		10.64	496-11-7		01/17/23 03:49	1
Naphthalene	220	J N	ug/L		12.16	91-20-3		01/17/23 03:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		70 - 128		01/17/23 03:49	1
4-Bromofluorobenzene	107		76 - 120		01/17/23 03:49	1
Dibromofluoromethane (Surr)	94		77 - 124		01/17/23 03:49	1
Toluene-d8 (Surr)	104		80 - 120		01/17/23 03:49	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Client Sample ID: GW-11222397-011023-MA-03

Lab Sample ID: 460-272726-3

Date Collected: 01/10/23 12:12

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8270C - Semivolatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	5.0	J	10	1.2	ug/L		01/11/23 19:28	01/12/23 16:55	1
2,2'-oxybis[1-chloropropane]	0.63	U	10	0.63	ug/L		01/11/23 19:28	01/12/23 16:55	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		01/11/23 19:28	01/12/23 16:55	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		01/11/23 19:28	01/12/23 16:55	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		01/11/23 19:28	01/12/23 16:55	1
2,4-Dimethylphenol	19		10	0.62	ug/L		01/11/23 19:28	01/12/23 16:55	1
2,4-Dinitrophenol	2.6	U **	40	2.6	ug/L		01/11/23 19:28	01/12/23 16:55	1
2,4-Dinitrotoluene	1.0	U **	10	1.0	ug/L		01/11/23 19:28	01/12/23 16:55	1
2,6-Dinitrotoluene	0.83	U **	2.0	0.83	ug/L		01/11/23 19:28	01/12/23 16:55	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		01/11/23 19:28	01/12/23 16:55	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		01/11/23 19:28	01/12/23 16:55	1
2-Methylnaphthalene	64		10	0.53	ug/L		01/11/23 19:28	01/12/23 16:55	1
2-Methylphenol	9.6	J	10	0.67	ug/L		01/11/23 19:28	01/12/23 16:55	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		01/11/23 19:28	01/12/23 16:55	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 16:55	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		01/11/23 19:28	01/12/23 16:55	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		01/11/23 19:28	01/12/23 16:55	1
4,6-Dinitro-2-methylphenol	3.0	U **	20	3.0	ug/L		01/11/23 19:28	01/12/23 16:55	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 16:55	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		01/11/23 19:28	01/12/23 16:55	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		01/11/23 19:28	01/12/23 16:55	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		01/11/23 19:28	01/12/23 16:55	1
4-Methylphenol	0.65	U	10	0.65	ug/L		01/11/23 19:28	01/12/23 16:55	1
4-Nitroaniline	1.2	U **	10	1.2	ug/L		01/11/23 19:28	01/12/23 16:55	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		01/11/23 19:28	01/12/23 16:55	1
Acenaphthene	1.1	U	10	1.1	ug/L		01/11/23 19:28	01/12/23 16:55	1
Acenaphthylene	0.82	U	10	0.82	ug/L		01/11/23 19:28	01/12/23 16:55	1
Acetophenone	2.3	U	10	2.3	ug/L		01/11/23 19:28	01/12/23 16:55	1
Anthracene	1.3	U	10	1.3	ug/L		01/11/23 19:28	01/12/23 16:55	1
Atrazine	1.3	U	2.0	1.3	ug/L		01/11/23 19:28	01/12/23 16:55	1
Benzaldehyde	2.1	U	10	2.1	ug/L		01/11/23 19:28	01/12/23 16:55	1
Benzo[a]anthracene	0.59	U	1.0	0.59	ug/L		01/11/23 19:28	01/12/23 16:55	1
Benzo[a]pyrene	0.41	U	1.0	0.41	ug/L		01/11/23 19:28	01/12/23 16:55	1
Benzo[b]fluoranthene	0.68	U	2.0	0.68	ug/L		01/11/23 19:28	01/12/23 16:55	1
Benzo[g,h,i]perylene	0.70	U	10	0.70	ug/L		01/11/23 19:28	01/12/23 16:55	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		01/11/23 19:28	01/12/23 16:55	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		01/11/23 19:28	01/12/23 16:55	1
Bis(2-chloroethyl)ether	0.63	U	1.0	0.63	ug/L		01/11/23 19:28	01/12/23 16:55	1
Bis(2-ethylhexyl) phthalate	0.80	U	2.0	0.80	ug/L		01/11/23 19:28	01/12/23 16:55	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		01/11/23 19:28	01/12/23 16:55	1
Caprolactam	2.2	U	10	2.2	ug/L		01/11/23 19:28	01/12/23 16:55	1
Carbazole	0.68	U	10	0.68	ug/L		01/11/23 19:28	01/12/23 16:55	1
Chrysene	0.91	U	2.0	0.91	ug/L		01/11/23 19:28	01/12/23 16:55	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		01/11/23 19:28	01/12/23 16:55	1
Dibenzofuran	1.8	J	10	1.1	ug/L		01/11/23 19:28	01/12/23 16:55	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		01/11/23 19:28	01/12/23 16:55	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		01/11/23 19:28	01/12/23 16:55	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		01/11/23 19:28	01/12/23 16:55	1
Di-n-octyl phthalate	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 16:55	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Client Sample ID: GW-11222397-011023-MA-03

Lab Sample ID: 460-272726-3

Date Collected: 01/10/23 12:12

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8270C - Semivolatile Organics (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	0.84	U	10	0.84	ug/L		01/11/23 19:28	01/12/23 16:55	1
Fluorene	2.2	J	10	0.91	ug/L		01/11/23 19:28	01/12/23 16:55	1
Hexachlorobenzene	0.40	U	1.0	0.40	ug/L		01/11/23 19:28	01/12/23 16:55	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		01/11/23 19:28	01/12/23 16:55	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		01/11/23 19:28	01/12/23 16:55	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		01/11/23 19:28	01/12/23 16:55	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		01/11/23 19:28	01/12/23 16:55	1
Isophorone	0.80	U	10	0.80	ug/L		01/11/23 19:28	01/12/23 16:55	1
Naphthalene	92		2.0	0.54	ug/L		01/11/23 19:28	01/12/23 16:55	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		01/11/23 19:28	01/12/23 16:55	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		01/11/23 19:28	01/12/23 16:55	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		01/11/23 19:28	01/12/23 16:55	1
Pentachlorophenol	1.4	U	20	1.4	ug/L		01/11/23 19:28	01/12/23 16:55	1
Phenanthrene	1.6	J	10	1.3	ug/L		01/11/23 19:28	01/12/23 16:55	1
Phenol	0.29	U	10	0.29	ug/L		01/11/23 19:28	01/12/23 16:55	1
Pyrene	1.6	U	10	1.6	ug/L		01/11/23 19:28	01/12/23 16:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	149		37 - 150	01/11/23 19:28	01/12/23 16:55	1
2-Fluorobiphenyl	114		46 - 139	01/11/23 19:28	01/12/23 16:55	1
2-Fluorophenol (Surr)	70		19 - 80	01/11/23 19:28	01/12/23 16:55	1
Nitrobenzene-d5 (Surr)	112		52 - 137	01/11/23 19:28	01/12/23 16:55	1
Phenol-d5 (Surr)	41		10 - 56	01/11/23 19:28	01/12/23 16:55	1
Terphenyl-d14 (Surr)	80		22 - 150	01/11/23 19:28	01/12/23 16:55	1

Client Sample ID: GW-11222397-011023-MA-04

Lab Sample ID: 460-272726-4

Date Collected: 01/10/23 12:27

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8270C - Semivolatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	4.6	J	10	1.2	ug/L		01/11/23 19:28	01/12/23 17:17	1
2,2'-oxybis[1-chloropropane]	0.63	U	10	0.63	ug/L		01/11/23 19:28	01/12/23 17:17	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		01/11/23 19:28	01/12/23 17:17	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		01/11/23 19:28	01/12/23 17:17	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		01/11/23 19:28	01/12/23 17:17	1
2,4-Dimethylphenol	16		10	0.62	ug/L		01/11/23 19:28	01/12/23 17:17	1
2,4-Dinitrophenol	2.6	U **	40	2.6	ug/L		01/11/23 19:28	01/12/23 17:17	1
2,4-Dinitrotoluene	1.0	U **	10	1.0	ug/L		01/11/23 19:28	01/12/23 17:17	1
2,6-Dinitrotoluene	0.83	U **	2.0	0.83	ug/L		01/11/23 19:28	01/12/23 17:17	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		01/11/23 19:28	01/12/23 17:17	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		01/11/23 19:28	01/12/23 17:17	1
2-Methylnaphthalene	63		10	0.53	ug/L		01/11/23 19:28	01/12/23 17:17	1
2-Methylphenol	7.8	J	10	0.67	ug/L		01/11/23 19:28	01/12/23 17:17	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		01/11/23 19:28	01/12/23 17:17	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 17:17	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		01/11/23 19:28	01/12/23 17:17	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		01/11/23 19:28	01/12/23 17:17	1
4,6-Dinitro-2-methylphenol	3.0	U **	20	3.0	ug/L		01/11/23 19:28	01/12/23 17:17	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 17:17	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Client Sample ID: GW-11222397-011023-MA-04

Lab Sample ID: 460-272726-4

Date Collected: 01/10/23 12:27

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8270C - Semivolatile Organics (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		01/11/23 19:28	01/12/23 17:17	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		01/11/23 19:28	01/12/23 17:17	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		01/11/23 19:28	01/12/23 17:17	1
4-Methylphenol	0.65	U	10	0.65	ug/L		01/11/23 19:28	01/12/23 17:17	1
4-Nitroaniline	1.2	U **	10	1.2	ug/L		01/11/23 19:28	01/12/23 17:17	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		01/11/23 19:28	01/12/23 17:17	1
Acenaphthene	1.3	J	10	1.1	ug/L		01/11/23 19:28	01/12/23 17:17	1
Acenaphthylene	0.82	U	10	0.82	ug/L		01/11/23 19:28	01/12/23 17:17	1
Acetophenone	2.3	U	10	2.3	ug/L		01/11/23 19:28	01/12/23 17:17	1
Anthracene	1.3	U	10	1.3	ug/L		01/11/23 19:28	01/12/23 17:17	1
Atrazine	1.3	U	2.0	1.3	ug/L		01/11/23 19:28	01/12/23 17:17	1
Benzaldehyde	2.1	U	10	2.1	ug/L		01/11/23 19:28	01/12/23 17:17	1
Benzo[a]anthracene	0.59	U	1.0	0.59	ug/L		01/11/23 19:28	01/12/23 17:17	1
Benzo[a]pyrene	0.41	U	1.0	0.41	ug/L		01/11/23 19:28	01/12/23 17:17	1
Benzo[b]fluoranthene	0.68	U	2.0	0.68	ug/L		01/11/23 19:28	01/12/23 17:17	1
Benzo[g,h,i]perylene	0.70	U	10	0.70	ug/L		01/11/23 19:28	01/12/23 17:17	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		01/11/23 19:28	01/12/23 17:17	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		01/11/23 19:28	01/12/23 17:17	1
Bis(2-chloroethyl)ether	0.63	U	1.0	0.63	ug/L		01/11/23 19:28	01/12/23 17:17	1
Bis(2-ethylhexyl) phthalate	0.80	U	2.0	0.80	ug/L		01/11/23 19:28	01/12/23 17:17	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		01/11/23 19:28	01/12/23 17:17	1
Caprolactam	2.2	U	10	2.2	ug/L		01/11/23 19:28	01/12/23 17:17	1
Carbazole	0.68	U	10	0.68	ug/L		01/11/23 19:28	01/12/23 17:17	1
Chrysene	0.91	U	2.0	0.91	ug/L		01/11/23 19:28	01/12/23 17:17	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		01/11/23 19:28	01/12/23 17:17	1
Dibenzofuran	1.9	J	10	1.1	ug/L		01/11/23 19:28	01/12/23 17:17	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		01/11/23 19:28	01/12/23 17:17	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		01/11/23 19:28	01/12/23 17:17	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		01/11/23 19:28	01/12/23 17:17	1
Di-n-octyl phthalate	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 17:17	1
Fluoranthene	0.84	U	10	0.84	ug/L		01/11/23 19:28	01/12/23 17:17	1
Fluorene	2.2	J	10	0.91	ug/L		01/11/23 19:28	01/12/23 17:17	1
Hexachlorobenzene	0.40	U	1.0	0.40	ug/L		01/11/23 19:28	01/12/23 17:17	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		01/11/23 19:28	01/12/23 17:17	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		01/11/23 19:28	01/12/23 17:17	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		01/11/23 19:28	01/12/23 17:17	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		01/11/23 19:28	01/12/23 17:17	1
Isophorone	0.80	U	10	0.80	ug/L		01/11/23 19:28	01/12/23 17:17	1
Naphthalene	91		2.0	0.54	ug/L		01/11/23 19:28	01/12/23 17:17	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		01/11/23 19:28	01/12/23 17:17	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		01/11/23 19:28	01/12/23 17:17	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		01/11/23 19:28	01/12/23 17:17	1
Pentachlorophenol	1.4	U	20	1.4	ug/L		01/11/23 19:28	01/12/23 17:17	1
Phenanthrene	1.5	J	10	1.3	ug/L		01/11/23 19:28	01/12/23 17:17	1
Phenol	0.29	U	10	0.29	ug/L		01/11/23 19:28	01/12/23 17:17	1
Pyrene	1.6	U	10	1.6	ug/L		01/11/23 19:28	01/12/23 17:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	140		37 - 150	01/11/23 19:28	01/12/23 17:17	1
2-Fluorobiphenyl	109		46 - 139	01/11/23 19:28	01/12/23 17:17	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 1122397- RACER

Job ID: 460-272726-1

Client Sample ID: GW-1122397-011023-MA-04

Lab Sample ID: 460-272726-4

Date Collected: 01/10/23 12:27

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8270C - Semivolatile Organics (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorophenol (Surr)	56		19 - 80	01/11/23 19:28	01/12/23 17:17	1
Nitrobenzene-d5 (Surr)	107		52 - 137	01/11/23 19:28	01/12/23 17:17	1
Phenol-d5 (Surr)	31		10 - 56	01/11/23 19:28	01/12/23 17:17	1
Terphenyl-d14 (Surr)	71		22 - 150	01/11/23 19:28	01/12/23 17:17	1

Client Sample ID: GW-1122397-011023-ZB-05

Lab Sample ID: 460-272726-5

Date Collected: 01/10/23 13:00

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/16/23 14:15	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			01/16/23 14:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	1.0	0.31	ug/L			01/16/23 14:15	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			01/16/23 14:15	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			01/16/23 14:15	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			01/16/23 14:15	1
1,2,4-Trichlorobenzene	0.37	U	1.0	0.37	ug/L			01/16/23 14:15	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			01/16/23 14:15	1
1,2-Dibromo-3-Chloropropane	0.38	U	1.0	0.38	ug/L			01/16/23 14:15	1
1,2-Dibromoethane	0.50	U	1.0	0.50	ug/L			01/16/23 14:15	1
1,2-Dichlorobenzene	0.21	U	1.0	0.21	ug/L			01/16/23 14:15	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			01/16/23 14:15	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			01/16/23 14:15	1
1,3-Dichlorobenzene	0.34	U	1.0	0.34	ug/L			01/16/23 14:15	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			01/16/23 14:15	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			01/16/23 14:15	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			01/16/23 14:15	1
4-Methyl-2-pentanone (MIBK)	1.3	U	5.0	1.3	ug/L			01/16/23 14:15	1
Acetone	4.4	U	5.0	4.4	ug/L			01/16/23 14:15	1
Benzene	0.20	U	1.0	0.20	ug/L			01/16/23 14:15	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			01/16/23 14:15	1
Bromoform	0.54	U	1.0	0.54	ug/L			01/16/23 14:15	1
Bromomethane	0.55	U	1.0	0.55	ug/L			01/16/23 14:15	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			01/16/23 14:15	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			01/16/23 14:15	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			01/16/23 14:15	1
Chloroethane	0.32	U	1.0	0.32	ug/L			01/16/23 14:15	1
Chloroform	0.33	U	1.0	0.33	ug/L			01/16/23 14:15	1
Chloromethane	0.40	U	1.0	0.40	ug/L			01/16/23 14:15	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			01/16/23 14:15	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 14:15	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			01/16/23 14:15	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			01/16/23 14:15	1
Dichlorodifluoromethane	0.31	U	1.0	0.31	ug/L			01/16/23 14:15	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			01/16/23 14:15	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			01/16/23 14:15	1
Methyl acetate	0.79	U	5.0	0.79	ug/L			01/16/23 14:15	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			01/16/23 14:15	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Client Sample ID: GW-11222397-011023-ZB-05

Lab Sample ID: 460-272726-5

Date Collected: 01/10/23 13:00

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.71	U	1.0	0.71	ug/L			01/16/23 14:15	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			01/16/23 14:15	1
Styrene	0.42	U	1.0	0.42	ug/L			01/16/23 14:15	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			01/16/23 14:15	1
Toluene	0.38	U	1.0	0.38	ug/L			01/16/23 14:15	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			01/16/23 14:15	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 14:15	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			01/16/23 14:15	1
Trichlorofluoromethane	0.32	U	1.0	0.32	ug/L			01/16/23 14:15	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			01/16/23 14:15	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			01/16/23 14:15	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					01/16/23 14:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 128		01/16/23 14:15	1
4-Bromofluorobenzene	100		76 - 120		01/16/23 14:15	1
Dibromofluoromethane (Surr)	98		77 - 124		01/16/23 14:15	1
Toluene-d8 (Surr)	100		80 - 120		01/16/23 14:15	1

Method: SW846 8270C - Semivolatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	1.2	U	10	1.2	ug/L		01/11/23 19:28	01/12/23 17:38	1
2,2'-oxybis[1-chloropropane]	0.63	U	10	0.63	ug/L		01/11/23 19:28	01/12/23 17:38	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		01/11/23 19:28	01/12/23 17:38	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		01/11/23 19:28	01/12/23 17:38	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		01/11/23 19:28	01/12/23 17:38	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		01/11/23 19:28	01/12/23 17:38	1
2,4-Dinitrophenol	2.6	U **	40	2.6	ug/L		01/11/23 19:28	01/12/23 17:38	1
2,4-Dinitrotoluene	1.0	U **	10	1.0	ug/L		01/11/23 19:28	01/12/23 17:38	1
2,6-Dinitrotoluene	0.83	U **	2.0	0.83	ug/L		01/11/23 19:28	01/12/23 17:38	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		01/11/23 19:28	01/12/23 17:38	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		01/11/23 19:28	01/12/23 17:38	1
2-Methylnaphthalene	0.53	U	10	0.53	ug/L		01/11/23 19:28	01/12/23 17:38	1
2-Methylphenol	0.67	U	10	0.67	ug/L		01/11/23 19:28	01/12/23 17:38	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		01/11/23 19:28	01/12/23 17:38	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 17:38	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		01/11/23 19:28	01/12/23 17:38	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		01/11/23 19:28	01/12/23 17:38	1
4,6-Dinitro-2-methylphenol	3.0	U **	20	3.0	ug/L		01/11/23 19:28	01/12/23 17:38	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 17:38	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		01/11/23 19:28	01/12/23 17:38	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		01/11/23 19:28	01/12/23 17:38	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		01/11/23 19:28	01/12/23 17:38	1
4-Methylphenol	0.65	U	10	0.65	ug/L		01/11/23 19:28	01/12/23 17:38	1
4-Nitroaniline	1.2	U **	10	1.2	ug/L		01/11/23 19:28	01/12/23 17:38	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		01/11/23 19:28	01/12/23 17:38	1
Acenaphthene	1.1	U	10	1.1	ug/L		01/11/23 19:28	01/12/23 17:38	1
Acenaphthylene	0.82	U	10	0.82	ug/L		01/11/23 19:28	01/12/23 17:38	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 1122397- RACER

Job ID: 460-272726-1

Client Sample ID: GW-1122397-011023-ZB-05

Lab Sample ID: 460-272726-5

Date Collected: 01/10/23 13:00

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8270C - Semivolatile Organics (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetophenone	2.3	U	10	2.3	ug/L		01/11/23 19:28	01/12/23 17:38	1
Anthracene	1.3	U	10	1.3	ug/L		01/11/23 19:28	01/12/23 17:38	1
Atrazine	1.3	U	2.0	1.3	ug/L		01/11/23 19:28	01/12/23 17:38	1
Benzaldehyde	2.1	U	10	2.1	ug/L		01/11/23 19:28	01/12/23 17:38	1
Benzo[a]anthracene	0.59	U	1.0	0.59	ug/L		01/11/23 19:28	01/12/23 17:38	1
Benzo[a]pyrene	0.41	U	1.0	0.41	ug/L		01/11/23 19:28	01/12/23 17:38	1
Benzo[b]fluoranthene	0.68	U	2.0	0.68	ug/L		01/11/23 19:28	01/12/23 17:38	1
Benzo[g,h,i]perylene	0.70	U	10	0.70	ug/L		01/11/23 19:28	01/12/23 17:38	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		01/11/23 19:28	01/12/23 17:38	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		01/11/23 19:28	01/12/23 17:38	1
Bis(2-chloroethyl)ether	0.63	U	1.0	0.63	ug/L		01/11/23 19:28	01/12/23 17:38	1
Bis(2-ethylhexyl) phthalate	0.80	U	2.0	0.80	ug/L		01/11/23 19:28	01/12/23 17:38	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		01/11/23 19:28	01/12/23 17:38	1
Caprolactam	2.2	U	10	2.2	ug/L		01/11/23 19:28	01/12/23 17:38	1
Carbazole	0.68	U	10	0.68	ug/L		01/11/23 19:28	01/12/23 17:38	1
Chrysene	0.91	U	2.0	0.91	ug/L		01/11/23 19:28	01/12/23 17:38	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		01/11/23 19:28	01/12/23 17:38	1
Dibenzofuran	1.1	U	10	1.1	ug/L		01/11/23 19:28	01/12/23 17:38	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		01/11/23 19:28	01/12/23 17:38	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		01/11/23 19:28	01/12/23 17:38	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		01/11/23 19:28	01/12/23 17:38	1
Di-n-octyl phthalate	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 17:38	1
Fluoranthene	0.84	U	10	0.84	ug/L		01/11/23 19:28	01/12/23 17:38	1
Fluorene	0.91	U	10	0.91	ug/L		01/11/23 19:28	01/12/23 17:38	1
Hexachlorobenzene	0.40	U	1.0	0.40	ug/L		01/11/23 19:28	01/12/23 17:38	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		01/11/23 19:28	01/12/23 17:38	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		01/11/23 19:28	01/12/23 17:38	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		01/11/23 19:28	01/12/23 17:38	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		01/11/23 19:28	01/12/23 17:38	1
Isophorone	0.80	U	10	0.80	ug/L		01/11/23 19:28	01/12/23 17:38	1
Naphthalene	0.54	U	2.0	0.54	ug/L		01/11/23 19:28	01/12/23 17:38	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		01/11/23 19:28	01/12/23 17:38	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		01/11/23 19:28	01/12/23 17:38	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		01/11/23 19:28	01/12/23 17:38	1
Pentachlorophenol	1.4	U	20	1.4	ug/L		01/11/23 19:28	01/12/23 17:38	1
Phenanthrene	1.3	U	10	1.3	ug/L		01/11/23 19:28	01/12/23 17:38	1
Phenol	0.29	U	10	0.29	ug/L		01/11/23 19:28	01/12/23 17:38	1
Pyrene	1.6	U	10	1.6	ug/L		01/11/23 19:28	01/12/23 17:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	160	S1+	37 - 150	01/11/23 19:28	01/12/23 17:38	1
2-Fluorobiphenyl	120		46 - 139	01/11/23 19:28	01/12/23 17:38	1
2-Fluorophenol (Surr)	59		19 - 80	01/11/23 19:28	01/12/23 17:38	1
Nitrobenzene-d5 (Surr)	117		52 - 137	01/11/23 19:28	01/12/23 17:38	1
Phenol-d5 (Surr)	39		10 - 56	01/11/23 19:28	01/12/23 17:38	1
Terphenyl-d14 (Surr)	89		22 - 150	01/11/23 19:28	01/12/23 17:38	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Client Sample ID: TRIP BLANKS

Lab Sample ID: 460-272726-6

Date Collected: 01/10/23 13:00

Matrix: Water

Date Received: 01/10/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/16/23 12:30	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			01/16/23 12:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	1.0	0.31	ug/L			01/16/23 12:30	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			01/16/23 12:30	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			01/16/23 12:30	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			01/16/23 12:30	1
1,2,4-Trichlorobenzene	0.37	U	1.0	0.37	ug/L			01/16/23 12:30	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			01/16/23 12:30	1
1,2-Dibromo-3-Chloropropane	0.38	U	1.0	0.38	ug/L			01/16/23 12:30	1
1,2-Dibromoethane	0.50	U	1.0	0.50	ug/L			01/16/23 12:30	1
1,2-Dichlorobenzene	0.21	U	1.0	0.21	ug/L			01/16/23 12:30	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			01/16/23 12:30	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			01/16/23 12:30	1
1,3-Dichlorobenzene	0.34	U	1.0	0.34	ug/L			01/16/23 12:30	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			01/16/23 12:30	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			01/16/23 12:30	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			01/16/23 12:30	1
4-Methyl-2-pentanone (MIBK)	1.3	U	5.0	1.3	ug/L			01/16/23 12:30	1
Acetone	4.4	U	5.0	4.4	ug/L			01/16/23 12:30	1
Benzene	0.20	U	1.0	0.20	ug/L			01/16/23 12:30	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			01/16/23 12:30	1
Bromoform	0.54	U	1.0	0.54	ug/L			01/16/23 12:30	1
Bromomethane	0.55	U	1.0	0.55	ug/L			01/16/23 12:30	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			01/16/23 12:30	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			01/16/23 12:30	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			01/16/23 12:30	1
Chloroethane	0.32	U	1.0	0.32	ug/L			01/16/23 12:30	1
Chloroform	0.33	U	1.0	0.33	ug/L			01/16/23 12:30	1
Chloromethane	0.40	U	1.0	0.40	ug/L			01/16/23 12:30	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			01/16/23 12:30	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 12:30	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			01/16/23 12:30	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			01/16/23 12:30	1
Dichlorodifluoromethane	0.31	U	1.0	0.31	ug/L			01/16/23 12:30	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			01/16/23 12:30	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			01/16/23 12:30	1
Methyl acetate	0.79	U	5.0	0.79	ug/L			01/16/23 12:30	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			01/16/23 12:30	1
Methylcyclohexane	0.71	U	1.0	0.71	ug/L			01/16/23 12:30	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			01/16/23 12:30	1
Styrene	0.42	U	1.0	0.42	ug/L			01/16/23 12:30	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			01/16/23 12:30	1
Toluene	0.38	U	1.0	0.38	ug/L			01/16/23 12:30	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			01/16/23 12:30	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 12:30	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			01/16/23 12:30	1
Trichlorofluoromethane	0.32	U	1.0	0.32	ug/L			01/16/23 12:30	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			01/16/23 12:30	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			01/16/23 12:30	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Client Sample ID: TRIP BLANKS

Lab Sample ID: 460-272726-6

Date Collected: 01/10/23 13:00

Matrix: Water

Date Received: 01/10/23 20:00

<i>Tentatively Identified Compound</i>	<i>Est. Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>RT</i>	<i>CAS No.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Tentatively Identified Compound</i>	<i>None</i>		<i>ug/L</i>					<i>01/16/23 12:30</i>	<i>1</i>
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	<i>98</i>		<i>70 - 128</i>					<i>01/16/23 12:30</i>	<i>1</i>
<i>4-Bromofluorobenzene</i>	<i>100</i>		<i>76 - 120</i>					<i>01/16/23 12:30</i>	<i>1</i>
<i>Dibromofluoromethane (Surr)</i>	<i>99</i>		<i>77 - 124</i>					<i>01/16/23 12:30</i>	<i>1</i>
<i>Toluene-d8 (Surr)</i>	<i>100</i>		<i>80 - 120</i>					<i>01/16/23 12:30</i>	<i>1</i>

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8260B - Volatile Organics (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA	BFB	DBFM	TOL			
		(70-128)	(76-120)	(77-124)	(80-120)			
460-272726-2	GW-11222397-011023-ZB-02	106	100	91	94			
460-272726-3	GW-11222397-011023-MA-03	120	107	94	104			
460-272726-5	GW-11222397-011023-ZB-05	94	100	98	100			
460-272726-6	TRIP BLANKS	98	100	99	100			
460-272828-A-2 MS	Matrix Spike	98	104	99	101			
460-272828-B-2 MSD	Matrix Spike Duplicate	91	97	94	98			
LCS 460-888265/4	Lab Control Sample	98	101	99	100			
LCS 460-888393/4	Lab Control Sample	97	97	97	99			
LCSD 460-888393/5	Lab Control Sample Dup	94	96	93	97			
MB 460-888265/8	Method Blank	102	98	99	97			
MB 460-888393/8	Method Blank	96	92	95	91			

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

Method: 8270C - Semivolatile Organics (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TBP	FBP	2FP	NBZ	PHL	TPHL		
		(37-150)	(46-139)	(19-80)	(52-137)	(10-56)	(22-150)		
460-272726-1	RB-11222397-011023-ZB-01	152 S1+	118	57	110	39	114		
460-272726-2	GW-11222397-011023-ZB-02	161 S1+	119	59	114	37	102		
460-272726-2 MS	GW-11222397-011023-ZB-02	162 S1+	121	62	117	43	113		
460-272726-2 MSD	GW-11222397-011023-ZB-02	158 S1+	120	56	111	36	116		
460-272726-3	GW-11222397-011023-MA-03	149	114	70	112	41	80		
460-272726-4	GW-11222397-011023-MA-04	140	109	56	107	31	71		
460-272726-5	GW-11222397-011023-ZB-05	160 S1+	120	59	117	39	89		
LCS 460-887672/2-A	Lab Control Sample	118	70	39	78	26	76		
LCSD 460-887672/3-A	Lab Control Sample Dup	133	81	45	87	30	85		
MB 460-887672/1-A	Method Blank	139	117	44	116	29	105		

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)

FBP = 2-Fluorobiphenyl

2FP = 2-Fluorophenol (Surr)

NBZ = Nitrobenzene-d5 (Surr)

PHL = Phenol-d5 (Surr)

TPHL = Terphenyl-d14 (Surr)

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8260B - Volatile Organics (GC/MS)

Lab Sample ID: MB 460-888265/8

Matrix: Water

Analysis Batch: 888265

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	0.24	U	1.0	0.24	ug/L			01/16/23 11:06	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			01/16/23 11:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	1.0	0.31	ug/L			01/16/23 11:06	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			01/16/23 11:06	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			01/16/23 11:06	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			01/16/23 11:06	1
1,2,4-Trichlorobenzene	0.37	U	1.0	0.37	ug/L			01/16/23 11:06	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			01/16/23 11:06	1
1,2-Dibromo-3-Chloropropane	0.38	U	1.0	0.38	ug/L			01/16/23 11:06	1
1,2-Dibromoethane	0.50	U	1.0	0.50	ug/L			01/16/23 11:06	1
1,2-Dichlorobenzene	0.21	U	1.0	0.21	ug/L			01/16/23 11:06	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			01/16/23 11:06	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			01/16/23 11:06	1
1,3-Dichlorobenzene	0.34	U	1.0	0.34	ug/L			01/16/23 11:06	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			01/16/23 11:06	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			01/16/23 11:06	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			01/16/23 11:06	1
4-Methyl-2-pentanone (MIBK)	1.3	U	5.0	1.3	ug/L			01/16/23 11:06	1
Acetone	4.4	U	5.0	4.4	ug/L			01/16/23 11:06	1
Benzene	0.20	U	1.0	0.20	ug/L			01/16/23 11:06	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			01/16/23 11:06	1
Bromoform	0.54	U	1.0	0.54	ug/L			01/16/23 11:06	1
Bromomethane	0.55	U	1.0	0.55	ug/L			01/16/23 11:06	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			01/16/23 11:06	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			01/16/23 11:06	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			01/16/23 11:06	1
Chloroethane	0.32	U	1.0	0.32	ug/L			01/16/23 11:06	1
Chloroform	0.33	U	1.0	0.33	ug/L			01/16/23 11:06	1
Chloromethane	0.40	U	1.0	0.40	ug/L			01/16/23 11:06	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			01/16/23 11:06	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 11:06	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			01/16/23 11:06	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			01/16/23 11:06	1
Dichlorodifluoromethane	0.31	U	1.0	0.31	ug/L			01/16/23 11:06	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			01/16/23 11:06	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			01/16/23 11:06	1
Methyl acetate	0.79	U	5.0	0.79	ug/L			01/16/23 11:06	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			01/16/23 11:06	1
Methylcyclohexane	0.71	U	1.0	0.71	ug/L			01/16/23 11:06	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			01/16/23 11:06	1
Styrene	0.42	U	1.0	0.42	ug/L			01/16/23 11:06	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			01/16/23 11:06	1
Toluene	0.38	U	1.0	0.38	ug/L			01/16/23 11:06	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			01/16/23 11:06	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 11:06	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			01/16/23 11:06	1
Trichlorofluoromethane	0.32	U	1.0	0.32	ug/L			01/16/23 11:06	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			01/16/23 11:06	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: MB 460-888265/8

Matrix: Water

Analysis Batch: 888265

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	0.65	U	2.0	0.65	ug/L			01/16/23 11:06	1
Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					01/16/23 11:06	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 128					01/16/23 11:06	1
4-Bromofluorobenzene	98		76 - 120					01/16/23 11:06	1
Dibromofluoromethane (Surr)	99		77 - 124					01/16/23 11:06	1
Toluene-d8 (Surr)	97		80 - 120					01/16/23 11:06	1

Lab Sample ID: LCS 460-888265/4

Matrix: Water

Analysis Batch: 888265

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	20.0	21.2		ug/L		106	68 - 128
1,1,2,2-Tetrachloroethane	20.0	21.2		ug/L		106	63 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	21.7		ug/L		109	51 - 142
1,1,2-Trichloroethane	20.0	20.5		ug/L		102	74 - 125
1,1-Dichloroethane	20.0	20.5		ug/L		103	73 - 130
1,1-Dichloroethene	20.0	21.6		ug/L		108	68 - 133
1,2,4-Trichlorobenzene	20.0	21.3		ug/L		107	67 - 132
1,2,4-Trimethylbenzene	20.0	21.4		ug/L		107	75 - 125
1,2-Dibromo-3-Chloropropane	20.0	22.0		ug/L		110	58 - 132
1,2-Dibromoethane	20.0	20.7		ug/L		103	79 - 126
1,2-Dichlorobenzene	20.0	20.7		ug/L		103	80 - 120
1,2-Dichloroethane	20.0	20.8		ug/L		104	66 - 129
1,2-Dichloropropane	20.0	21.2		ug/L		106	68 - 128
1,3-Dichlorobenzene	20.0	20.9		ug/L		104	80 - 120
1,4-Dichlorobenzene	20.0	20.7		ug/L		104	80 - 120
2-Butanone (MEK)	100	100		ug/L		100	61 - 128
2-Hexanone	100	108		ug/L		108	61 - 134
4-Methyl-2-pentanone (MIBK)	100	103		ug/L		103	69 - 128
Acetone	100	110		ug/L		110	61 - 134
Benzene	20.0	20.7		ug/L		104	71 - 126
Bromodichloromethane	20.0	20.4		ug/L		102	76 - 121
Bromoform	20.0	20.3		ug/L		102	48 - 144
Bromomethane	20.0	21.6		ug/L		108	32 - 150
Carbon disulfide	20.0	21.0		ug/L		105	64 - 138
Carbon tetrachloride	20.0	20.9		ug/L		104	61 - 131
Chlorobenzene	20.0	20.6		ug/L		103	80 - 120
Chloroethane	20.0	17.5		ug/L		87	42 - 150
Chloroform	20.0	20.1		ug/L		100	78 - 125
Chloromethane	20.0	19.7		ug/L		98	43 - 150
cis-1,2-Dichloroethene	20.0	21.2		ug/L		106	78 - 121
cis-1,3-Dichloropropene	20.0	21.5		ug/L		108	74 - 125

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: LCS 460-888265/4

Matrix: Water

Analysis Batch: 888265

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyclohexane	20.0	21.7		ug/L		109	60 - 133
Dibromochloromethane	20.0	20.3		ug/L		102	62 - 130
Dichlorodifluoromethane	20.0	20.2		ug/L		101	33 - 150
Ethylbenzene	20.0	21.2		ug/L		106	78 - 120
Isopropylbenzene	20.0	21.1		ug/L		106	79 - 125
Methyl acetate	40.0	42.9		ug/L		107	55 - 146
Methyl tert-butyl ether	20.0	20.9		ug/L		104	72 - 131
Methylcyclohexane	20.0	22.7		ug/L		114	54 - 139
Methylene Chloride	20.0	20.0		ug/L		100	74 - 127
Styrene	20.0	21.1		ug/L		106	75 - 127
Tetrachloroethene	20.0	21.1		ug/L		105	70 - 127
Toluene	20.0	20.5		ug/L		103	78 - 120
trans-1,2-Dichloroethene	20.0	21.0		ug/L		105	74 - 126
trans-1,3-Dichloropropene	20.0	20.6		ug/L		103	66 - 127
Trichloroethene	20.0	20.8		ug/L		104	71 - 121
Trichlorofluoromethane	20.0	19.3		ug/L		97	50 - 150
Vinyl chloride	20.0	19.7		ug/L		98	55 - 144
Xylenes, Total	40.0	42.6		ug/L		106	78 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 128
4-Bromofluorobenzene	101		76 - 120
Dibromofluoromethane (Surr)	99		77 - 124
Toluene-d8 (Surr)	100		80 - 120

Lab Sample ID: 460-272828-A-2 MS

Matrix: Water

Analysis Batch: 888265

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.24	U	20.0	21.8		ug/L		109	68 - 128
1,1,2,2-Tetrachloroethane	0.37	U	20.0	19.6		ug/L		98	63 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	20.0	21.8		ug/L		109	51 - 142
1,1,2-Trichloroethane	0.20	U	20.0	21.1		ug/L		106	74 - 125
1,1-Dichloroethane	0.26	U	20.0	21.2		ug/L		106	73 - 130
1,1-Dichloroethene	0.26	U	20.0	21.9		ug/L		110	68 - 133
1,2,4-Trichlorobenzene	0.37	U	20.0	20.3		ug/L		102	67 - 132
1,2,4-Trimethylbenzene	0.37	U	20.0	21.0		ug/L		105	75 - 125
1,2-Dibromo-3-Chloropropane	0.38	U	20.0	19.3		ug/L		97	58 - 132
1,2-Dibromoethane	0.50	U	20.0	21.3		ug/L		106	79 - 126
1,2-Dichlorobenzene	0.21	U	20.0	20.6		ug/L		103	80 - 120
1,2-Dichloroethane	0.43	U	20.0	20.7		ug/L		104	66 - 129
1,2-Dichloropropane	0.35	U	20.0	21.4		ug/L		107	68 - 128
1,3-Dichlorobenzene	0.34	U	20.0	20.9		ug/L		104	80 - 120
1,4-Dichlorobenzene	0.33	U	20.0	20.6		ug/L		103	80 - 120
2-Butanone (MEK)	1.9	U	100	110		ug/L		110	61 - 128
2-Hexanone	1.1	U	100	112		ug/L		112	61 - 134
4-Methyl-2-pentanone (MIBK)	1.3	U	100	112		ug/L		112	69 - 128

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: 460-272828-A-2 MS

Matrix: Water

Analysis Batch: 888265

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	4.4	U	100	109		ug/L		109	61 - 134
Benzene	0.20	U	20.0	21.8		ug/L		109	71 - 126
Bromodichloromethane	0.34	U	20.0	20.3		ug/L		102	76 - 121
Bromoform	0.54	U	20.0	19.4		ug/L		97	48 - 144
Bromomethane	0.55	U	20.0	20.7		ug/L		104	32 - 150
Carbon disulfide	0.82	U	20.0	21.4		ug/L		107	64 - 138
Carbon tetrachloride	0.21	U	20.0	21.3		ug/L		107	61 - 131
Chlorobenzene	0.38	U	20.0	21.2		ug/L		106	80 - 120
Chloroethane	0.32	U	20.0	18.2		ug/L		91	42 - 150
Chloroform	0.33	U	20.0	20.7		ug/L		103	78 - 125
Chloromethane	0.40	U	20.0	21.2		ug/L		106	43 - 150
cis-1,2-Dichloroethene	0.22	U	20.0	20.9		ug/L		104	78 - 121
cis-1,3-Dichloropropene	0.22	U	20.0	19.9		ug/L		99	74 - 125
Cyclohexane	0.32	U	20.0	22.0		ug/L		110	60 - 133
Dibromochloromethane	0.28	U	20.0	20.2		ug/L		101	62 - 130
Dichlorodifluoromethane	0.31	U	20.0	21.2		ug/L		106	33 - 150
Ethylbenzene	0.30	U	20.0	21.6		ug/L		108	78 - 120
Isopropylbenzene	0.34	U	20.0	21.8		ug/L		109	79 - 125
Methyl acetate	0.79	U	40.0	33.7		ug/L		84	55 - 146
Methyl tert-butyl ether	0.22	U	20.0	21.0		ug/L		105	72 - 131
Methylcyclohexane	0.71	U	20.0	21.2		ug/L		106	54 - 139
Methylene Chloride	0.32	U	20.0	20.9		ug/L		105	74 - 127
Styrene	0.42	U	20.0	21.1		ug/L		106	75 - 127
Tetrachloroethene	0.42	J	20.0	22.3		ug/L		109	70 - 127
Toluene	0.38	U	20.0	21.5		ug/L		108	78 - 120
trans-1,2-Dichloroethene	0.24	U	20.0	21.9		ug/L		109	74 - 126
trans-1,3-Dichloropropene	0.22	U	20.0	19.1		ug/L		95	66 - 127
Trichloroethene	0.31	U	20.0	21.5		ug/L		107	71 - 121
Trichlorofluoromethane	2.1		20.0	23.0		ug/L		105	50 - 150
Vinyl chloride	0.17	U	20.0	21.2		ug/L		106	55 - 144
Xylenes, Total	0.65	U	40.0	43.5		ug/L		109	78 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 128
4-Bromofluorobenzene	104		76 - 120
Dibromofluoromethane (Surr)	99		77 - 124
Toluene-d8 (Surr)	101		80 - 120

Lab Sample ID: 460-272828-B-2 MSD

Matrix: Water

Analysis Batch: 888265

Client Sample ID: Matrix Spike Duplicate

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	0.24	U	20.0	22.3		ug/L		111	68 - 128	2	30
1,1,2,2-Tetrachloroethane	0.37	U	20.0	20.5		ug/L		103	63 - 139	5	30
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	20.0	21.2		ug/L		106	51 - 142	2	30
1,1,2-Trichloroethane	0.20	U	20.0	20.9		ug/L		105	74 - 125	1	30
1,1-Dichloroethane	0.26	U	20.0	21.5		ug/L		108	73 - 130	1	30

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: 460-272828-B-2 MSD

Matrix: Water

Analysis Batch: 888265

Client Sample ID: Matrix Spike Duplicate

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-Dichloroethene	0.26	U	20.0	23.1		ug/L		115	68 - 133	5	30
1,2,4-Trichlorobenzene	0.37	U	20.0	21.1		ug/L		105	67 - 132	3	30
1,2,4-Trimethylbenzene	0.37	U	20.0	21.8		ug/L		109	75 - 125	3	30
1,2-Dibromo-3-Chloropropane	0.38	U	20.0	19.7		ug/L		99	58 - 132	2	30
1,2-Dibromoethane	0.50	U	20.0	21.4		ug/L		107	79 - 126	1	30
1,2-Dichlorobenzene	0.21	U	20.0	21.0		ug/L		105	80 - 120	2	30
1,2-Dichloroethane	0.43	U	20.0	20.7		ug/L		103	66 - 129	0	30
1,2-Dichloropropane	0.35	U	20.0	21.3		ug/L		107	68 - 128	0	30
1,3-Dichlorobenzene	0.34	U	20.0	21.5		ug/L		108	80 - 120	3	30
1,4-Dichlorobenzene	0.33	U	20.0	21.1		ug/L		105	80 - 120	2	30
2-Butanone (MEK)	1.9	U	100	109		ug/L		109	61 - 128	1	30
2-Hexanone	1.1	U	100	115		ug/L		115	61 - 134	3	30
4-Methyl-2-pentanone (MIBK)	1.3	U	100	115		ug/L		115	69 - 128	2	30
Acetone	4.4	U	100	109		ug/L		109	61 - 134	0	30
Benzene	0.20	U	20.0	22.3		ug/L		112	71 - 126	2	30
Bromodichloromethane	0.34	U	20.0	21.6		ug/L		108	76 - 121	6	30
Bromoform	0.54	U	20.0	20.5		ug/L		103	48 - 144	6	30
Bromomethane	0.55	U	20.0	19.8		ug/L		99	32 - 150	5	30
Carbon disulfide	0.82	U	20.0	21.6		ug/L		108	64 - 138	1	30
Carbon tetrachloride	0.21	U	20.0	21.6		ug/L		108	61 - 131	1	30
Chlorobenzene	0.38	U	20.0	21.7		ug/L		108	80 - 120	2	30
Chloroethane	0.32	U	20.0	18.3		ug/L		92	42 - 150	0	30
Chloroform	0.33	U	20.0	21.0		ug/L		105	78 - 125	2	30
Chloromethane	0.40	U	20.0	20.1		ug/L		100	43 - 150	5	30
cis-1,2-Dichloroethene	0.22	U	20.0	20.9		ug/L		104	78 - 121	0	30
cis-1,3-Dichloropropene	0.22	U	20.0	20.7		ug/L		104	74 - 125	4	30
Cyclohexane	0.32	U	20.0	22.2		ug/L		111	60 - 133	1	30
Dibromochloromethane	0.28	U	20.0	20.6		ug/L		103	62 - 130	2	30
Dichlorodifluoromethane	0.31	U	20.0	21.1		ug/L		106	33 - 150	0	30
Ethylbenzene	0.30	U	20.0	22.3		ug/L		112	78 - 120	3	30
Isopropylbenzene	0.34	U	20.0	22.1		ug/L		111	79 - 125	1	30
Methyl acetate	0.79	U	40.0	35.0		ug/L		87	55 - 146	4	30
Methyl tert-butyl ether	0.22	U	20.0	21.1		ug/L		105	72 - 131	0	30
Methylcyclohexane	0.71	U	20.0	21.6		ug/L		108	54 - 139	2	30
Methylene Chloride	0.32	U	20.0	20.8		ug/L		104	74 - 127	1	30
Styrene	0.42	U	20.0	22.0		ug/L		110	75 - 127	4	30
Tetrachloroethene	0.42	J	20.0	22.5		ug/L		110	70 - 127	1	30
Toluene	0.38	U	20.0	21.9		ug/L		109	78 - 120	2	30
trans-1,2-Dichloroethene	0.24	U	20.0	21.9		ug/L		109	74 - 126	0	30
trans-1,3-Dichloropropene	0.22	U	20.0	19.9		ug/L		100	66 - 127	4	30
Trichloroethene	0.31	U	20.0	21.1		ug/L		105	71 - 121	2	30
Trichlorofluoromethane	2.1		20.0	21.9		ug/L		99	50 - 150	5	30
Vinyl chloride	0.17	U	20.0	20.2		ug/L		101	55 - 144	5	30
Xylenes, Total	0.65	U	40.0	44.2		ug/L		110	78 - 120	2	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		70 - 128
4-Bromofluorobenzene	97		76 - 120

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: 460-272828-B-2 MSD

Matrix: Water

Analysis Batch: 888265

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	94		77 - 124
Toluene-d8 (Surr)	98		80 - 120

Lab Sample ID: MB 460-888393/8

Matrix: Water

Analysis Batch: 888393

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB							
	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/16/23 22:49	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			01/16/23 22:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	1.0	0.31	ug/L			01/16/23 22:49	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			01/16/23 22:49	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			01/16/23 22:49	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			01/16/23 22:49	1
1,2,4-Trichlorobenzene	0.37	U	1.0	0.37	ug/L			01/16/23 22:49	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			01/16/23 22:49	1
1,2-Dibromo-3-Chloropropane	0.38	U	1.0	0.38	ug/L			01/16/23 22:49	1
1,2-Dibromoethane	0.50	U	1.0	0.50	ug/L			01/16/23 22:49	1
1,2-Dichlorobenzene	0.21	U	1.0	0.21	ug/L			01/16/23 22:49	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			01/16/23 22:49	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			01/16/23 22:49	1
1,3-Dichlorobenzene	0.34	U	1.0	0.34	ug/L			01/16/23 22:49	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			01/16/23 22:49	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			01/16/23 22:49	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			01/16/23 22:49	1
4-Methyl-2-pentanone (MIBK)	1.3	U	5.0	1.3	ug/L			01/16/23 22:49	1
Acetone	4.4	U	5.0	4.4	ug/L			01/16/23 22:49	1
Benzene	0.20	U	1.0	0.20	ug/L			01/16/23 22:49	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			01/16/23 22:49	1
Bromoform	0.54	U	1.0	0.54	ug/L			01/16/23 22:49	1
Bromomethane	0.55	U	1.0	0.55	ug/L			01/16/23 22:49	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			01/16/23 22:49	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			01/16/23 22:49	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			01/16/23 22:49	1
Chloroethane	0.32	U	1.0	0.32	ug/L			01/16/23 22:49	1
Chloroform	0.33	U	1.0	0.33	ug/L			01/16/23 22:49	1
Chloromethane	0.40	U	1.0	0.40	ug/L			01/16/23 22:49	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			01/16/23 22:49	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 22:49	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			01/16/23 22:49	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			01/16/23 22:49	1
Dichlorodifluoromethane	0.31	U	1.0	0.31	ug/L			01/16/23 22:49	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			01/16/23 22:49	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			01/16/23 22:49	1
Methyl acetate	0.79	U	5.0	0.79	ug/L			01/16/23 22:49	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			01/16/23 22:49	1
Methylcyclohexane	0.71	U	1.0	0.71	ug/L			01/16/23 22:49	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			01/16/23 22:49	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 1122397- RACER

Job ID: 460-272726-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: MB 460-888393/8

Matrix: Water

Analysis Batch: 888393

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.42	U	1.0	0.42	ug/L			01/16/23 22:49	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			01/16/23 22:49	1
Toluene	0.38	U	1.0	0.38	ug/L			01/16/23 22:49	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			01/16/23 22:49	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 22:49	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			01/16/23 22:49	1
Trichlorofluoromethane	0.32	U	1.0	0.32	ug/L			01/16/23 22:49	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			01/16/23 22:49	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			01/16/23 22:49	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					01/16/23 22:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		70 - 128		01/16/23 22:49	1
4-Bromofluorobenzene	92		76 - 120		01/16/23 22:49	1
Dibromofluoromethane (Surr)	95		77 - 124		01/16/23 22:49	1
Toluene-d8 (Surr)	91		80 - 120		01/16/23 22:49	1

Lab Sample ID: LCS 460-888393/4

Matrix: Water

Analysis Batch: 888393

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	20.0	18.1		ug/L		91	68 - 128
1,1,2,2-Tetrachloroethane	20.0	19.0		ug/L		95	63 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	18.6		ug/L		93	51 - 142
1,1,2-Trichloroethane	20.0	18.8		ug/L		94	74 - 125
1,1-Dichloroethane	20.0	18.5		ug/L		92	73 - 130
1,1-Dichloroethene	20.0	18.2		ug/L		91	68 - 133
1,2,4-Trichlorobenzene	20.0	19.7		ug/L		98	67 - 132
1,2,4-Trimethylbenzene	20.0	18.5		ug/L		93	75 - 125
1,2-Dibromo-3-Chloropropane	20.0	19.6		ug/L		98	58 - 132
1,2-Dibromoethane	20.0	19.2		ug/L		96	79 - 126
1,2-Dichlorobenzene	20.0	19.7		ug/L		98	80 - 120
1,2-Dichloroethane	20.0	18.5		ug/L		92	66 - 129
1,2-Dichloropropane	20.0	18.8		ug/L		94	68 - 128
1,3-Dichlorobenzene	20.0	19.4		ug/L		97	80 - 120
1,4-Dichlorobenzene	20.0	19.5		ug/L		97	80 - 120
2-Butanone (MEK)	100	98.3		ug/L		98	61 - 128
2-Hexanone	100	100		ug/L		100	61 - 134
4-Methyl-2-pentanone (MIBK)	100	98.3		ug/L		98	69 - 128
Acetone	100	101		ug/L		101	61 - 134
Benzene	20.0	18.3		ug/L		91	71 - 126
Bromodichloromethane	20.0	18.4		ug/L		92	76 - 121
Bromoform	20.0	19.4		ug/L		97	48 - 144
Bromomethane	20.0	18.3		ug/L		92	32 - 150

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: LCS 460-888393/4

Matrix: Water

Analysis Batch: 888393

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon disulfide	20.0	18.1		ug/L		90	64 - 138
Carbon tetrachloride	20.0	18.1		ug/L		91	61 - 131
Chlorobenzene	20.0	18.8		ug/L		94	80 - 120
Chloroethane	20.0	17.7		ug/L		88	42 - 150
Chloroform	20.0	18.5		ug/L		93	78 - 125
Chloromethane	20.0	17.4		ug/L		87	43 - 150
cis-1,2-Dichloroethene	20.0	18.9		ug/L		95	78 - 121
cis-1,3-Dichloropropene	20.0	18.7		ug/L		93	74 - 125
Cyclohexane	20.0	18.6		ug/L		93	60 - 133
Dibromochloromethane	20.0	19.6		ug/L		98	62 - 130
Dichlorodifluoromethane	20.0	17.6		ug/L		88	33 - 150
Ethylbenzene	20.0	18.8		ug/L		94	78 - 120
Isopropylbenzene	20.0	18.5		ug/L		93	79 - 125
Methyl acetate	40.0	38.6		ug/L		97	55 - 146
Methyl tert-butyl ether	20.0	19.0		ug/L		95	72 - 131
Methylcyclohexane	20.0	18.9		ug/L		95	54 - 139
Methylene Chloride	20.0	18.6		ug/L		93	74 - 127
Styrene	20.0	18.5		ug/L		92	75 - 127
Tetrachloroethene	20.0	18.6		ug/L		93	70 - 127
Toluene	20.0	18.5		ug/L		92	78 - 120
trans-1,2-Dichloroethene	20.0	18.3		ug/L		91	74 - 126
trans-1,3-Dichloropropene	20.0	19.1		ug/L		96	66 - 127
Trichloroethene	20.0	18.4		ug/L		92	71 - 121
Trichlorofluoromethane	20.0	17.2		ug/L		86	50 - 150
Vinyl chloride	20.0	17.3		ug/L		87	55 - 144
Xylenes, Total	40.0	37.6		ug/L		94	78 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		70 - 128
4-Bromofluorobenzene	97		76 - 120
Dibromofluoromethane (Surr)	97		77 - 124
Toluene-d8 (Surr)	99		80 - 120

Lab Sample ID: LCSD 460-888393/5

Matrix: Water

Analysis Batch: 888393

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	20.0	19.5		ug/L		97	68 - 128	7	30
1,1,1,2,2-Tetrachloroethane	20.0	20.0		ug/L		100	63 - 139	5	30
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	20.1		ug/L		100	51 - 142	7	30
1,1,2-Trichloroethane	20.0	19.6		ug/L		98	74 - 125	4	30
1,1-Dichloroethane	20.0	19.9		ug/L		99	73 - 130	7	30
1,1-Dichloroethene	20.0	19.7		ug/L		99	68 - 133	8	30
1,2,4-Trichlorobenzene	20.0	20.7		ug/L		103	67 - 132	5	30
1,2,4-Trimethylbenzene	20.0	19.9		ug/L		99	75 - 125	7	30
1,2-Dibromo-3-Chloropropane	20.0	19.4		ug/L		97	58 - 132	1	30
1,2-Dibromoethane	20.0	19.7		ug/L		98	79 - 126	3	30

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: LCSD 460-888393/5

Matrix: Water

Analysis Batch: 888393

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichlorobenzene	20.0	21.0		ug/L		105	80 - 120	7	30
1,2-Dichloroethane	20.0	18.9		ug/L		94	66 - 129	2	30
1,2-Dichloropropane	20.0	19.6		ug/L		98	68 - 128	4	30
1,3-Dichlorobenzene	20.0	20.6		ug/L		103	80 - 120	6	30
1,4-Dichlorobenzene	20.0	20.6		ug/L		103	80 - 120	6	30
2-Butanone (MEK)	100	105		ug/L		105	61 - 128	7	30
2-Hexanone	100	105		ug/L		105	61 - 134	5	30
4-Methyl-2-pentanone (MIBK)	100	104		ug/L		104	69 - 128	5	30
Acetone	100	107		ug/L		107	61 - 134	6	30
Benzene	20.0	19.5		ug/L		97	71 - 126	6	30
Bromodichloromethane	20.0	19.6		ug/L		98	76 - 121	6	30
Bromoform	20.0	19.1		ug/L		96	48 - 144	1	30
Bromomethane	20.0	19.8		ug/L		99	32 - 150	8	30
Carbon disulfide	20.0	19.2		ug/L		96	64 - 138	6	30
Carbon tetrachloride	20.0	19.4		ug/L		97	61 - 131	7	30
Chlorobenzene	20.0	19.7		ug/L		98	80 - 120	5	30
Chloroethane	20.0	19.6		ug/L		98	42 - 150	10	30
Chloroform	20.0	19.3		ug/L		96	78 - 125	4	30
Chloromethane	20.0	20.1		ug/L		100	43 - 150	14	30
cis-1,2-Dichloroethene	20.0	19.1		ug/L		95	78 - 121	1	30
cis-1,3-Dichloropropene	20.0	19.3		ug/L		97	74 - 125	3	30
Cyclohexane	20.0	19.8		ug/L		99	60 - 133	6	30
Dibromochloromethane	20.0	19.8		ug/L		99	62 - 130	1	30
Dichlorodifluoromethane	20.0	20.5		ug/L		103	33 - 150	15	30
Ethylbenzene	20.0	19.3		ug/L		96	78 - 120	3	30
Isopropylbenzene	20.0	19.7		ug/L		98	79 - 125	6	30
Methyl acetate	40.0	40.3		ug/L		101	55 - 146	4	30
Methyl tert-butyl ether	20.0	19.3		ug/L		97	72 - 131	2	30
Methylcyclohexane	20.0	20.0		ug/L		100	54 - 139	5	30
Methylene Chloride	20.0	19.5		ug/L		98	74 - 127	5	30
Styrene	20.0	19.3		ug/L		96	75 - 127	4	30
Tetrachloroethene	20.0	19.3		ug/L		96	70 - 127	4	30
Toluene	20.0	19.6		ug/L		98	78 - 120	6	30
trans-1,2-Dichloroethene	20.0	19.6		ug/L		98	74 - 126	7	30
trans-1,3-Dichloropropene	20.0	19.2		ug/L		96	66 - 127	0	30
Trichloroethene	20.0	19.6		ug/L		98	71 - 121	7	30
Trichlorofluoromethane	20.0	19.9		ug/L		100	50 - 150	15	30
Vinyl chloride	20.0	19.3		ug/L		96	55 - 144	11	30
Xylenes, Total	40.0	39.6		ug/L		99	78 - 120	5	30

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
1,2-Dichloroethane-d4 (Surr)	94		70 - 128
4-Bromofluorobenzene	96		76 - 120
Dibromofluoromethane (Surr)	93		77 - 124
Toluene-d8 (Surr)	97		80 - 120

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8270C - Semivolatile Organics (GC/MS)

Lab Sample ID: MB 460-887672/1-A

Matrix: Water

Analysis Batch: 887803

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 887672

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1'-Biphenyl	1.2	U	10	1.2	ug/L		01/11/23 19:28	01/12/23 13:59	1
2,2'-oxybis[1-chloropropane]	0.63	U	10	0.63	ug/L		01/11/23 19:28	01/12/23 13:59	1
2,4,5-Trichlorophenol	0.88	U	10	0.88	ug/L		01/11/23 19:28	01/12/23 13:59	1
2,4,6-Trichlorophenol	0.86	U	10	0.86	ug/L		01/11/23 19:28	01/12/23 13:59	1
2,4-Dichlorophenol	1.1	U	10	1.1	ug/L		01/11/23 19:28	01/12/23 13:59	1
2,4-Dimethylphenol	0.62	U	10	0.62	ug/L		01/11/23 19:28	01/12/23 13:59	1
2,4-Dinitrophenol	2.6	U	40	2.6	ug/L		01/11/23 19:28	01/12/23 13:59	1
2,4-Dinitrotoluene	1.0	U	10	1.0	ug/L		01/11/23 19:28	01/12/23 13:59	1
2,6-Dinitrotoluene	0.83	U	2.0	0.83	ug/L		01/11/23 19:28	01/12/23 13:59	1
2-Chloronaphthalene	1.2	U	10	1.2	ug/L		01/11/23 19:28	01/12/23 13:59	1
2-Chlorophenol	0.38	U	10	0.38	ug/L		01/11/23 19:28	01/12/23 13:59	1
2-Methylnaphthalene	0.53	U	10	0.53	ug/L		01/11/23 19:28	01/12/23 13:59	1
2-Methylphenol	0.67	U	10	0.67	ug/L		01/11/23 19:28	01/12/23 13:59	1
2-Nitroaniline	0.47	U	10	0.47	ug/L		01/11/23 19:28	01/12/23 13:59	1
2-Nitrophenol	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 13:59	1
3,3'-Dichlorobenzidine	1.4	U	10	1.4	ug/L		01/11/23 19:28	01/12/23 13:59	1
3-Nitroaniline	1.9	U	10	1.9	ug/L		01/11/23 19:28	01/12/23 13:59	1
4,6-Dinitro-2-methylphenol	3.0	U	20	3.0	ug/L		01/11/23 19:28	01/12/23 13:59	1
4-Bromophenyl phenyl ether	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 13:59	1
4-Chloro-3-methylphenol	0.58	U	10	0.58	ug/L		01/11/23 19:28	01/12/23 13:59	1
4-Chloroaniline	1.9	U	10	1.9	ug/L		01/11/23 19:28	01/12/23 13:59	1
4-Chlorophenyl phenyl ether	1.3	U	10	1.3	ug/L		01/11/23 19:28	01/12/23 13:59	1
4-Methylphenol	0.65	U	10	0.65	ug/L		01/11/23 19:28	01/12/23 13:59	1
4-Nitroaniline	1.2	U	10	1.2	ug/L		01/11/23 19:28	01/12/23 13:59	1
4-Nitrophenol	4.0	U	20	4.0	ug/L		01/11/23 19:28	01/12/23 13:59	1
Acenaphthene	1.1	U	10	1.1	ug/L		01/11/23 19:28	01/12/23 13:59	1
Acenaphthylene	0.82	U	10	0.82	ug/L		01/11/23 19:28	01/12/23 13:59	1
Acetophenone	2.3	U	10	2.3	ug/L		01/11/23 19:28	01/12/23 13:59	1
Anthracene	1.3	U	10	1.3	ug/L		01/11/23 19:28	01/12/23 13:59	1
Atrazine	1.3	U	2.0	1.3	ug/L		01/11/23 19:28	01/12/23 13:59	1
Benzaldehyde	2.1	U	10	2.1	ug/L		01/11/23 19:28	01/12/23 13:59	1
Benzo[a]anthracene	0.59	U	1.0	0.59	ug/L		01/11/23 19:28	01/12/23 13:59	1
Benzo[a]pyrene	0.41	U	1.0	0.41	ug/L		01/11/23 19:28	01/12/23 13:59	1
Benzo[b]fluoranthene	0.68	U	2.0	0.68	ug/L		01/11/23 19:28	01/12/23 13:59	1
Benzo[g,h,i]perylene	0.70	U	10	0.70	ug/L		01/11/23 19:28	01/12/23 13:59	1
Benzo[k]fluoranthene	0.67	U	1.0	0.67	ug/L		01/11/23 19:28	01/12/23 13:59	1
Bis(2-chloroethoxy)methane	0.59	U	10	0.59	ug/L		01/11/23 19:28	01/12/23 13:59	1
Bis(2-chloroethyl)ether	0.63	U	1.0	0.63	ug/L		01/11/23 19:28	01/12/23 13:59	1
Bis(2-ethylhexyl) phthalate	0.80	U	2.0	0.80	ug/L		01/11/23 19:28	01/12/23 13:59	1
Butyl benzyl phthalate	0.85	U	10	0.85	ug/L		01/11/23 19:28	01/12/23 13:59	1
Caprolactam	2.2	U	10	2.2	ug/L		01/11/23 19:28	01/12/23 13:59	1
Carbazole	0.68	U	10	0.68	ug/L		01/11/23 19:28	01/12/23 13:59	1
Chrysene	0.91	U	2.0	0.91	ug/L		01/11/23 19:28	01/12/23 13:59	1
Dibenz(a,h)anthracene	0.72	U	1.0	0.72	ug/L		01/11/23 19:28	01/12/23 13:59	1
Dibenzofuran	1.1	U	10	1.1	ug/L		01/11/23 19:28	01/12/23 13:59	1
Diethyl phthalate	0.98	U	10	0.98	ug/L		01/11/23 19:28	01/12/23 13:59	1
Dimethyl phthalate	0.77	U	10	0.77	ug/L		01/11/23 19:28	01/12/23 13:59	1
Di-n-butyl phthalate	0.84	U	10	0.84	ug/L		01/11/23 19:28	01/12/23 13:59	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8270C - Semivolatile Organics (GC/MS) (Continued)

Lab Sample ID: MB 460-887672/1-A

Matrix: Water

Analysis Batch: 887803

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 887672

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	0.75	U	10	0.75	ug/L		01/11/23 19:28	01/12/23 13:59	1
Fluoranthene	0.84	U	10	0.84	ug/L		01/11/23 19:28	01/12/23 13:59	1
Fluorene	0.91	U	10	0.91	ug/L		01/11/23 19:28	01/12/23 13:59	1
Hexachlorobenzene	0.40	U	1.0	0.40	ug/L		01/11/23 19:28	01/12/23 13:59	1
Hexachlorobutadiene	0.78	U	1.0	0.78	ug/L		01/11/23 19:28	01/12/23 13:59	1
Hexachlorocyclopentadiene	3.6	U	10	3.6	ug/L		01/11/23 19:28	01/12/23 13:59	1
Hexachloroethane	0.80	U	2.0	0.80	ug/L		01/11/23 19:28	01/12/23 13:59	1
Indeno[1,2,3-cd]pyrene	0.94	U	2.0	0.94	ug/L		01/11/23 19:28	01/12/23 13:59	1
Isophorone	0.80	U	10	0.80	ug/L		01/11/23 19:28	01/12/23 13:59	1
Naphthalene	0.54	U	2.0	0.54	ug/L		01/11/23 19:28	01/12/23 13:59	1
Nitrobenzene	0.57	U	1.0	0.57	ug/L		01/11/23 19:28	01/12/23 13:59	1
N-Nitrosodi-n-propylamine	0.43	U	1.0	0.43	ug/L		01/11/23 19:28	01/12/23 13:59	1
N-Nitrosodiphenylamine	0.89	U	10	0.89	ug/L		01/11/23 19:28	01/12/23 13:59	1
Pentachlorophenol	1.4	U	20	1.4	ug/L		01/11/23 19:28	01/12/23 13:59	1
Phenanthrene	1.3	U	10	1.3	ug/L		01/11/23 19:28	01/12/23 13:59	1
Phenol	0.29	U	10	0.29	ug/L		01/11/23 19:28	01/12/23 13:59	1
Pyrene	1.6	U	10	1.6	ug/L		01/11/23 19:28	01/12/23 13:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	139		37 - 150	01/11/23 19:28	01/12/23 13:59	1
2-Fluorobiphenyl	117		46 - 139	01/11/23 19:28	01/12/23 13:59	1
2-Fluorophenol (Surr)	44		19 - 80	01/11/23 19:28	01/12/23 13:59	1
Nitrobenzene-d5 (Surr)	116		52 - 137	01/11/23 19:28	01/12/23 13:59	1
Phenol-d5 (Surr)	29		10 - 56	01/11/23 19:28	01/12/23 13:59	1
Terphenyl-d14 (Surr)	105		22 - 150	01/11/23 19:28	01/12/23 13:59	1

Lab Sample ID: LCS 460-887672/2-A

Matrix: Water

Analysis Batch: 887803

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 887672

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	80.0	65.3		ug/L		82	53 - 120
2,2'-oxybis[1-chloropropane]	80.0	58.7		ug/L		73	37 - 120
2,4,5-Trichlorophenol	80.0	84.7		ug/L		106	58 - 120
2,4,6-Trichlorophenol	80.0	83.5		ug/L		104	61 - 120
2,4-Dichlorophenol	80.0	72.9		ug/L		91	65 - 120
2,4-Dimethylphenol	80.0	66.6		ug/L		83	62 - 120
2,4-Dinitrophenol	160	250	*+	ug/L		156	36 - 150
2,4-Dinitrotoluene	80.0	100		ug/L		125	68 - 134
2,6-Dinitrotoluene	80.0	88.2		ug/L		110	65 - 124
2-Chloronaphthalene	80.0	64.3		ug/L		80	52 - 120
2-Chlorophenol	80.0	57.0		ug/L		71	53 - 120
2-Methylnaphthalene	80.0	57.3		ug/L		72	44 - 120
2-Methylphenol	80.0	51.4		ug/L		64	44 - 120
2-Nitroaniline	80.0	74.2		ug/L		93	49 - 120
2-Nitrophenol	80.0	83.2		ug/L		104	60 - 125
3,3'-Dichlorobenzidine	80.0	73.6		ug/L		92	37 - 137
3-Nitroaniline	80.0	78.1		ug/L		98	40 - 120

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8270C - Semivolatile Organics (GC/MS) (Continued)

Lab Sample ID: LCS 460-887672/2-A

Matrix: Water

Analysis Batch: 887803

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 887672

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,6-Dinitro-2-methylphenol	160	228	*+	ug/L		143	59 - 135
4-Bromophenyl phenyl ether	80.0	80.8		ug/L		101	62 - 125
4-Chloro-3-methylphenol	80.0	69.8		ug/L		87	61 - 120
4-Chloroaniline	80.0	69.2		ug/L		87	29 - 127
4-Chlorophenyl phenyl ether	80.0	78.7		ug/L		98	59 - 122
4-Methylphenol	80.0	48.9		ug/L		61	33 - 120
4-Nitroaniline	80.0	85.2		ug/L		106	45 - 120
4-Nitrophenol	160	62.6		ug/L		39	12 - 120
Acenaphthene	80.0	71.0		ug/L		89	49 - 120
Acenaphthylene	80.0	66.3		ug/L		83	60 - 120
Acetophenone	80.0	69.0		ug/L		86	62 - 120
Anthracene	80.0	74.5		ug/L		93	65 - 120
Atrazine	40.0	45.7		ug/L		114	43 - 150
Benzaldehyde	40.0	32.8		ug/L		82	41 - 150
Benzo[a]anthracene	80.0	76.7		ug/L		96	63 - 120
Benzo[a]pyrene	80.0	73.5		ug/L		92	60 - 139
Benzo[b]fluoranthene	80.0	80.1		ug/L		100	66 - 125
Benzo[g,h,i]perylene	80.0	79.9		ug/L		100	59 - 136
Benzo[k]fluoranthene	80.0	82.7		ug/L		103	64 - 125
Bis(2-chloroethoxy)methane	80.0	72.0		ug/L		90	64 - 120
Bis(2-chloroethyl)ether	80.0	66.2		ug/L		83	63 - 120
Bis(2-ethylhexyl) phthalate	80.0	77.3		ug/L		97	60 - 132
Butyl benzyl phthalate	80.0	79.5		ug/L		99	58 - 132
Caprolactam	40.0	11.1		ug/L		28	10 - 120
Carbazole	80.0	76.9		ug/L		96	65 - 120
Chrysene	80.0	75.7		ug/L		95	63 - 120
Dibenz(a,h)anthracene	80.0	82.9		ug/L		104	62 - 140
Dibenzofuran	80.0	72.6		ug/L		91	58 - 120
Diethyl phthalate	80.0	81.5		ug/L		102	53 - 129
Dimethyl phthalate	80.0	80.2		ug/L		100	60 - 124
Di-n-butyl phthalate	80.0	75.5		ug/L		94	59 - 133
Di-n-octyl phthalate	80.0	77.9		ug/L		97	49 - 135
Fluoranthene	80.0	78.4		ug/L		98	65 - 123
Fluorene	80.0	78.1		ug/L		98	58 - 120
Hexachlorobenzene	80.0	82.5		ug/L		103	61 - 128
Hexachlorobutadiene	80.0	51.6		ug/L		65	27 - 127
Hexachlorocyclopentadiene	80.0	43.2		ug/L		54	24 - 123
Hexachloroethane	80.0	44.4		ug/L		55	26 - 120
Indeno[1,2,3-cd]pyrene	80.0	86.3		ug/L		108	59 - 137
Isophorone	80.0	71.6		ug/L		90	68 - 121
Naphthalene	80.0	56.8		ug/L		71	51 - 120
Nitrobenzene	80.0	70.4		ug/L		88	64 - 120
N-Nitrosodi-n-propylamine	80.0	63.0		ug/L		79	60 - 120
N-Nitrosodiphenylamine	80.0	74.4		ug/L		93	63 - 120
Pentachlorophenol	160	183		ug/L		114	24 - 131
Phenanthrene	80.0	72.8		ug/L		91	65 - 120
Phenol	80.0	25.0		ug/L		31	18 - 120
Pyrene	80.0	75.7		ug/L		95	51 - 124

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8270C - Semivolatile Organics (GC/MS) (Continued)

Lab Sample ID: LCS 460-887672/2-A

Matrix: Water

Analysis Batch: 887803

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 887672

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	118		37 - 150
2-Fluorobiphenyl	70		46 - 139
2-Fluorophenol (Surr)	39		19 - 80
Nitrobenzene-d5 (Surr)	78		52 - 137
Phenol-d5 (Surr)	26		10 - 56
Terphenyl-d14 (Surr)	76		22 - 150

Lab Sample ID: LCSD 460-887672/3-A

Matrix: Water

Analysis Batch: 887803

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 887672

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1'-Biphenyl	80.0	72.7		ug/L		91	53 - 120	11	30
2,2'-oxybis[1-chloropropane]	80.0	66.9		ug/L		84	37 - 120	13	30
2,4,5-Trichlorophenol	80.0	93.3		ug/L		117	58 - 120	10	30
2,4,6-Trichlorophenol	80.0	96.3		ug/L		120	61 - 120	14	30
2,4-Dichlorophenol	80.0	81.3		ug/L		102	65 - 120	11	30
2,4-Dimethylphenol	80.0	73.9		ug/L		92	62 - 120	10	30
2,4-Dinitrophenol	160	281	*+	ug/L		176	36 - 150	12	30
2,4-Dinitrotoluene	80.0	111	*+	ug/L		139	68 - 134	11	30
2,6-Dinitrotoluene	80.0	102	*+	ug/L		127	65 - 124	15	30
2-Chloronaphthalene	80.0	72.6		ug/L		91	52 - 120	12	30
2-Chlorophenol	80.0	65.1		ug/L		81	53 - 120	13	30
2-Methylnaphthalene	80.0	63.3		ug/L		79	44 - 120	10	30
2-Methylphenol	80.0	57.7		ug/L		72	44 - 120	12	30
2-Nitroaniline	80.0	84.4		ug/L		105	49 - 120	13	30
2-Nitrophenol	80.0	91.4		ug/L		114	60 - 125	9	30
3,3'-Dichlorobenzidine	80.0	84.7		ug/L		106	37 - 137	14	30
3-Nitroaniline	80.0	90.3		ug/L		113	40 - 120	14	30
4,6-Dinitro-2-methylphenol	160	256	*+	ug/L		160	59 - 135	11	30
4-Bromophenyl phenyl ether	80.0	90.5		ug/L		113	62 - 125	11	30
4-Chloro-3-methylphenol	80.0	77.5		ug/L		97	61 - 120	10	30
4-Chloroaniline	80.0	76.7		ug/L		96	29 - 127	10	30
4-Chlorophenyl phenyl ether	80.0	90.9		ug/L		114	59 - 122	14	30
4-Methylphenol	80.0	54.7		ug/L		68	33 - 120	11	30
4-Nitroaniline	80.0	103	*+	ug/L		129	45 - 120	19	30
4-Nitrophenol	160	71.0		ug/L		44	12 - 120	13	30
Acenaphthene	80.0	80.8		ug/L		101	49 - 120	13	30
Acenaphthylene	80.0	76.4		ug/L		95	60 - 120	14	30
Acetophenone	80.0	78.4		ug/L		98	62 - 120	13	30
Anthracene	80.0	83.2		ug/L		104	65 - 120	11	30
Atrazine	40.0	51.5		ug/L		129	43 - 150	12	30
Benzaldehyde	40.0	37.5		ug/L		94	41 - 150	13	30
Benzo[a]anthracene	80.0	87.3		ug/L		109	63 - 120	13	30
Benzo[a]pyrene	80.0	83.1		ug/L		104	60 - 139	12	30
Benzo[b]fluoranthene	80.0	87.2		ug/L		109	66 - 125	8	30
Benzo[g,h,i]perylene	80.0	89.1		ug/L		111	59 - 136	11	30
Benzo[k]fluoranthene	80.0	91.6		ug/L		115	64 - 125	10	30

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8270C - Semivolatile Organics (GC/MS) (Continued)

Lab Sample ID: LCSD 460-887672/3-A

Matrix: Water

Analysis Batch: 887803

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 887672

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-chloroethoxy)methane	80.0	79.4		ug/L		99	64 - 120	10	30
Bis(2-chloroethyl)ether	80.0	75.0		ug/L		94	63 - 120	13	30
Bis(2-ethylhexyl) phthalate	80.0	88.8		ug/L		111	60 - 132	14	30
Butyl benzyl phthalate	80.0	90.3		ug/L		113	58 - 132	13	30
Caprolactam	40.0	12.5		ug/L		31	10 - 120	12	30
Carbazole	80.0	87.9		ug/L		110	65 - 120	13	30
Chrysene	80.0	86.1		ug/L		108	63 - 120	13	30
Dibenz(a,h)anthracene	80.0	92.8		ug/L		116	62 - 140	11	30
Dibenzofuran	80.0	84.1		ug/L		105	58 - 120	15	30
Diethyl phthalate	80.0	92.3		ug/L		115	53 - 129	12	30
Dimethyl phthalate	80.0	90.8		ug/L		114	60 - 124	12	30
Di-n-butyl phthalate	80.0	86.5		ug/L		108	59 - 133	14	30
Di-n-octyl phthalate	80.0	85.7		ug/L		107	49 - 135	10	30
Fluoranthene	80.0	90.0		ug/L		112	65 - 123	14	30
Fluorene	80.0	88.4		ug/L		111	58 - 120	12	30
Hexachlorobenzene	80.0	93.2		ug/L		116	61 - 128	12	30
Hexachlorobutadiene	80.0	57.2		ug/L		71	27 - 127	10	30
Hexachlorocyclopentadiene	80.0	50.2		ug/L		63	24 - 123	15	30
Hexachloroethane	80.0	50.6		ug/L		63	26 - 120	13	30
Indeno[1,2,3-cd]pyrene	80.0	97.8		ug/L		122	59 - 137	12	30
Isophorone	80.0	78.1		ug/L		98	68 - 121	9	30
Naphthalene	80.0	63.4		ug/L		79	51 - 120	11	30
Nitrobenzene	80.0	79.6		ug/L		100	64 - 120	12	30
N-Nitrosodi-n-propylamine	80.0	71.7		ug/L		90	60 - 120	13	30
N-Nitrosodiphenylamine	80.0	83.6		ug/L		105	63 - 120	12	30
Pentachlorophenol	160	204		ug/L		128	24 - 131	11	30
Phenanthrene	80.0	83.0		ug/L		104	65 - 120	13	30
Phenol	80.0	27.7		ug/L		35	18 - 120	10	30
Pyrene	80.0	86.7		ug/L		108	51 - 124	14	30

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2,4,6-Tribromophenol (Surr)	133		37 - 150
2-Fluorobiphenyl	81		46 - 139
2-Fluorophenol (Surr)	45		19 - 80
Nitrobenzene-d5 (Surr)	87		52 - 137
Phenol-d5 (Surr)	30		10 - 56
Terphenyl-d14 (Surr)	85		22 - 150

Lab Sample ID: 460-272726-2 MS

Matrix: Water

Analysis Batch: 887803

Client Sample ID: GW-11222397-011023-ZB-02

Prep Type: Total/NA

Prep Batch: 887672

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1'-Biphenyl	1.2	U F1	80.0	103	F1	ug/L		129	53 - 120
2,2'-oxybis[1-chloropropane]	0.63	U	80.0	88.8		ug/L		111	37 - 120
2,4,5-Trichlorophenol	0.88	U F1	80.0	115	F1	ug/L		144	58 - 120
2,4,6-Trichlorophenol	0.86	U F1	80.0	118	F1	ug/L		148	61 - 120
2,4-Dichlorophenol	1.1	U F1	80.0	102	F1	ug/L		128	65 - 120

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8270C - Semivolatile Organics (GC/MS) (Continued)

Lab Sample ID: 460-272726-2 MS

Matrix: Water

Analysis Batch: 887803

Client Sample ID: GW-11222397-011023-ZB-02

Prep Type: Total/NA

Prep Batch: 887672

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dimethylphenol	1.7	J	80.0	97.1		ug/L		119	62 - 120
2,4-Dinitrophenol	2.6	U F1 **	160	370	F1	ug/L		231	36 - 150
2,4-Dinitrotoluene	1.0	U F1 **	80.0	135	F1	ug/L		168	68 - 134
2,6-Dinitrotoluene	0.83	U F1 **	80.0	126	F1	ug/L		157	65 - 124
2-Chloronaphthalene	1.2	U F1	80.0	107	F1	ug/L		133	52 - 120
2-Chlorophenol	0.38	U	80.0	83.4		ug/L		104	53 - 120
2-Methylnaphthalene	7.3	J	80.0	102		ug/L		118	44 - 120
2-Methylphenol	0.67	U	80.0	74.5		ug/L		93	44 - 120
2-Nitroaniline	0.47	U F1	80.0	111	F1	ug/L		138	49 - 120
2-Nitrophenol	0.75	U F1	80.0	118	F1	ug/L		147	60 - 125
3,3'-Dichlorobenzidine	1.4	U	80.0	90.7		ug/L		113	37 - 137
3-Nitroaniline	1.9	U F1	80.0	105	F1	ug/L		131	40 - 120
4,6-Dinitro-2-methylphenol	3.0	U F1 **	160	314	F1	ug/L		196	59 - 135
4-Bromophenyl phenyl ether	0.75	U F1	80.0	112	F1	ug/L		139	62 - 125
4-Chloro-3-methylphenol	0.58	U	80.0	96.0		ug/L		120	61 - 120
4-Chloroaniline	1.9	U	80.0	93.1		ug/L		116	29 - 127
4-Chlorophenyl phenyl ether	1.3	U F1	80.0	116	F1	ug/L		145	59 - 122
4-Methylphenol	0.75	J	80.0	71.7		ug/L		89	33 - 120
4-Nitroaniline	1.2	U F1 **	80.0	116	F1	ug/L		146	45 - 120
4-Nitrophenol	4.0	U	160	98.1		ug/L		61	12 - 120
Acenaphthene	1.1	U F1	80.0	109	F1	ug/L		136	49 - 120
Acenaphthylene	0.82	U F1	80.0	101	F1	ug/L		126	60 - 120
Acetophenone	2.3	U F1	80.0	104	F1	ug/L		130	62 - 120
Anthracene	1.3	U F1	80.0	103	F1	ug/L		128	65 - 120
Atrazine	1.3	U F1	40.0	65.3	E F1	ug/L		163	43 - 150
Benzaldehyde	2.1	U	40.0	54.3	E	ug/L		136	41 - 150
Benzo[a]anthracene	0.59	U F1	80.0	105	F1	ug/L		132	63 - 120
Benzo[a]pyrene	0.41	U	80.0	101		ug/L		126	60 - 139
Benzo[b]fluoranthene	0.68	U F1	80.0	108	F1	ug/L		135	66 - 125
Benzo[g,h,i]perylene	0.70	U F1	80.0	112	F1	ug/L		140	59 - 136
Benzo[k]fluoranthene	0.67	U F1	80.0	108	F1	ug/L		135	64 - 125
Bis(2-chloroethoxy)methane	0.59	U F1	80.0	103	F1	ug/L		129	64 - 120
Bis(2-chloroethyl)ether	0.63	U	80.0	95.3		ug/L		119	63 - 120
Bis(2-ethylhexyl) phthalate	0.80	U F1	80.0	105		ug/L		131	60 - 132
Butyl benzyl phthalate	0.85	U F1	80.0	108	F1	ug/L		135	58 - 132
Caprolactam	2.2	U F2	40.0	22.9		ug/L		57	10 - 120
Carbazole	0.68	U F1	80.0	104	F1	ug/L		130	65 - 120
Chrysene	0.91	U F1	80.0	104	F1	ug/L		130	63 - 120
Dibenz(a,h)anthracene	0.72	U F1	80.0	115	F1	ug/L		144	62 - 140
Dibenzofuran	1.1	U F1	80.0	109	F1	ug/L		137	58 - 120
Diethyl phthalate	0.98	U F1	80.0	111	F1	ug/L		139	53 - 129
Dimethyl phthalate	0.77	U F1	80.0	111	F1	ug/L		139	60 - 124
Di-n-butyl phthalate	0.84	U	80.0	102		ug/L		127	59 - 133
Di-n-octyl phthalate	0.75	U	80.0	102		ug/L		127	49 - 135
Fluoranthene	0.84	U F1	80.0	105	F1	ug/L		132	65 - 123
Fluorene	0.91	U F1	80.0	113	F1	ug/L		141	58 - 120
Hexachlorobenzene	0.40	U F1	80.0	114	F1	ug/L		143	61 - 128
Hexachlorobutadiene	0.78	U	80.0	90.4		ug/L		113	27 - 127
Hexachlorocyclopentadiene	3.6	U	80.0	96.0		ug/L		120	24 - 123

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8270C - Semivolatile Organics (GC/MS) (Continued)

Lab Sample ID: 460-272726-2 MS

Matrix: Water

Analysis Batch: 887803

Client Sample ID: GW-11222397-011023-ZB-02

Prep Type: Total/NA

Prep Batch: 887672

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachloroethane	0.80	U F1	80.0	127	F1	ug/L		158	26 - 120
Indeno[1,2,3-cd]pyrene	0.94	U F1	80.0	121	F1	ug/L		151	59 - 137
Isophorone	0.80	U F1	80.0	100	F1	ug/L		125	68 - 121
Naphthalene	57		80.0	132		ug/L		93	51 - 120
Nitrobenzene	0.57	U F1	80.0	102	F1	ug/L		127	64 - 120
N-Nitrosodi-n-propylamine	0.43	U	80.0	90.2		ug/L		113	60 - 120
N-Nitrosodiphenylamine	0.89	U F1	80.0	103	F1	ug/L		129	63 - 120
Pentachlorophenol	1.4	U F1	160	254	F1	ug/L		159	24 - 131
Phenanthrene	1.3	U F1	80.0	101	F1	ug/L		126	65 - 120
Phenol	0.29	U	80.0	39.2		ug/L		49	18 - 120
Pyrene	1.6	U F1	80.0	102	F1	ug/L		127	51 - 124

Surrogate	MS %Recovery	MS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	162	S1+	37 - 150
2-Fluorobiphenyl	121		46 - 139
2-Fluorophenol (Surr)	62		19 - 80
Nitrobenzene-d5 (Surr)	117		52 - 137
Phenol-d5 (Surr)	43		10 - 56
Terphenyl-d14 (Surr)	113		22 - 150

Lab Sample ID: 460-272726-2 MSD

Matrix: Water

Analysis Batch: 887803

Client Sample ID: GW-11222397-011023-ZB-02

Prep Type: Total/NA

Prep Batch: 887672

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1'-Biphenyl	1.2	U F1	80.0	103	F1	ug/L		129	53 - 120	0	30
2,2'-oxybis[1-chloropropane]	0.63	U	80.0	84.3		ug/L		105	37 - 120	5	30
2,4,5-Trichlorophenol	0.88	U F1	80.0	117	F1	ug/L		147	58 - 120	2	30
2,4,6-Trichlorophenol	0.86	U F1	80.0	115	F1	ug/L		144	61 - 120	3	30
2,4-Dichlorophenol	1.1	U F1	80.0	99.1	F1	ug/L		124	65 - 120	3	30
2,4-Dimethylphenol	1.7	J	80.0	93.7		ug/L		115	62 - 120	4	30
2,4-Dinitrophenol	2.6	U F1 **	160	371	F1	ug/L		232	36 - 150	0	30
2,4-Dinitrotoluene	1.0	U F1 **	80.0	135	F1	ug/L		169	68 - 134	1	30
2,6-Dinitrotoluene	0.83	U F1 **	80.0	127	F1	ug/L		158	65 - 124	1	30
2-Chloronaphthalene	1.2	U F1	80.0	104	F1	ug/L		130	52 - 120	2	30
2-Chlorophenol	0.38	U	80.0	79.8		ug/L		100	53 - 120	4	30
2-Methylnaphthalene	7.3	J	80.0	98.9		ug/L		114	44 - 120	3	30
2-Methylphenol	0.67	U	80.0	71.1		ug/L		89	44 - 120	5	30
2-Nitroaniline	0.47	U F1	80.0	112	F1	ug/L		140	49 - 120	1	30
2-Nitrophenol	0.75	U F1	80.0	116	F1	ug/L		145	60 - 125	2	30
3,3'-Dichlorobenzidine	1.4	U	80.0	94.0		ug/L		117	37 - 137	4	30
3-Nitroaniline	1.9	U F1	80.0	107	F1	ug/L		134	40 - 120	2	30
4,6-Dinitro-2-methylphenol	3.0	U F1 **	160	317	F1	ug/L		198	59 - 135	1	30
4-Bromophenyl phenyl ether	0.75	U F1	80.0	112	F1	ug/L		140	62 - 125	1	30
4-Chloro-3-methylphenol	0.58	U	80.0	93.8		ug/L		117	61 - 120	2	30
4-Chloroaniline	1.9	U	80.0	91.8		ug/L		115	29 - 127	1	30
4-Chlorophenyl phenyl ether	1.3	U F1	80.0	116	F1	ug/L		146	59 - 122	0	30
4-Methylphenol	0.75	J	80.0	67.3		ug/L		83	33 - 120	6	30

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8270C - Semivolatile Organics (GC/MS) (Continued)

Lab Sample ID: 460-272726-2 MSD

Matrix: Water

Analysis Batch: 887803

Client Sample ID: GW-11222397-011023-ZB-02

Prep Type: Total/NA

Prep Batch: 887672

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4-Nitroaniline	1.2	U F1 **	80.0	115	F1	ug/L		143	45 - 120	1	30
4-Nitrophenol	4.0	U	160	87.6		ug/L		55	12 - 120	11	30
Acenaphthene	1.1	U F1	80.0	109	F1	ug/L		136	49 - 120	0	30
Acenaphthylene	0.82	U F1	80.0	101	F1	ug/L		126	60 - 120	0	30
Acetophenone	2.3	U F1	80.0	105	F1	ug/L		131	62 - 120	0	30
Anthracene	1.3	U F1	80.0	103	F1	ug/L		128	65 - 120	0	30
Atrazine	1.3	U F1	40.0	49.5		ug/L		124	43 - 150	28	30
Benzaldehyde	2.1	U	40.0	40.2	E	ug/L		101	41 - 150	30	30
Benzo[a]anthracene	0.59	U F1	80.0	108	F1	ug/L		135	63 - 120	2	30
Benzo[a]pyrene	0.41	U	80.0	102		ug/L		127	60 - 139	1	30
Benzo[b]fluoranthene	0.68	U F1	80.0	109	F1	ug/L		136	66 - 125	1	30
Benzo[g,h,i]perylene	0.70	U F1	80.0	115	F1	ug/L		144	59 - 136	3	30
Benzo[k]fluoranthene	0.67	U F1	80.0	113	F1	ug/L		141	64 - 125	4	30
Bis(2-chloroethoxy)methane	0.59	U F1	80.0	98.8	F1	ug/L		124	64 - 120	4	30
Bis(2-chloroethyl)ether	0.63	U	80.0	92.5		ug/L		116	63 - 120	3	30
Bis(2-ethylhexyl) phthalate	0.80	U F1	80.0	108	F1	ug/L		135	60 - 132	3	30
Butyl benzyl phthalate	0.85	U F1	80.0	115	F1	ug/L		144	58 - 132	7	30
Caprolactam	2.2	U F2	40.0	14.6	F2	ug/L		37	10 - 120	44	30
Carbazole	0.68	U F1	80.0	104	F1	ug/L		130	65 - 120	0	30
Chrysene	0.91	U F1	80.0	109	F1	ug/L		136	63 - 120	4	30
Dibenz(a,h)anthracene	0.72	U F1	80.0	118	F1	ug/L		148	62 - 140	2	30
Dibenzofuran	1.1	U F1	80.0	109	F1	ug/L		137	58 - 120	0	30
Diethyl phthalate	0.98	U F1	80.0	113	F1	ug/L		141	53 - 129	1	30
Dimethyl phthalate	0.77	U F1	80.0	112	F1	ug/L		140	60 - 124	1	30
Di-n-butyl phthalate	0.84	U	80.0	102		ug/L		128	59 - 133	1	30
Di-n-octyl phthalate	0.75	U	80.0	105		ug/L		131	49 - 135	3	30
Fluoranthene	0.84	U F1	80.0	106	F1	ug/L		132	65 - 123	0	30
Fluorene	0.91	U F1	80.0	112	F1	ug/L		141	58 - 120	0	30
Hexachlorobenzene	0.40	U F1	80.0	113	F1	ug/L		141	61 - 128	1	30
Hexachlorobutadiene	0.78	U	80.0	81.2		ug/L		101	27 - 127	11	30
Hexachlorocyclopentadiene	3.6	U	80.0	92.9		ug/L		116	24 - 123	3	30
Hexachloroethane	0.80	U F1	80.0	132	F1	ug/L		165	26 - 120	4	30
Indeno[1,2,3-cd]pyrene	0.94	U F1	80.0	123	F1	ug/L		153	59 - 137	2	30
Isophorone	0.80	U F1	80.0	97.2	F1	ug/L		122	68 - 121	3	30
Naphthalene	57		80.0	137		ug/L		99	51 - 120	4	30
Nitrobenzene	0.57	U F1	80.0	98.8	F1	ug/L		123	64 - 120	3	30
N-Nitrosodi-n-propylamine	0.43	U	80.0	90.0		ug/L		112	60 - 120	0	30
N-Nitrosodiphenylamine	0.89	U F1	80.0	104	F1	ug/L		130	63 - 120	1	30
Pentachlorophenol	1.4	U F1	160	262	F1	ug/L		164	24 - 131	3	30
Phenanthrene	1.3	U F1	80.0	101	F1	ug/L		126	65 - 120	0	30
Phenol	0.29	U	80.0	32.6		ug/L		41	18 - 120	18	30
Pyrene	1.6	U F1	80.0	104	F1	ug/L		130	51 - 124	3	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	158	S1+	37 - 150
2-Fluorobiphenyl	120		46 - 139
2-Fluorophenol (Surr)	56		19 - 80
Nitrobenzene-d5 (Surr)	111		52 - 137

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method: 8270C - Semivolatile Organics (GC/MS) (Continued)

Lab Sample ID: 460-272726-2 MSD

Matrix: Water

Analysis Batch: 887803

Client Sample ID: GW-11222397-011023-ZB-02

Prep Type: Total/NA

Prep Batch: 887672

<u>Surrogate</u>	<u>MSD</u>	<u>MSD</u>	<u>Limits</u>
	<u>%Recovery</u>	<u>Qualifier</u>	
Phenol-d5 (Surr)	36		10 - 56
Terphenyl-d14 (Surr)	116		22 - 150

QC Association Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

GC/MS VOA

Analysis Batch: 888265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272726-5	GW-11222397-011023-ZB-05	Total/NA	Water	8260B	
460-272726-6	TRIP BLANKS	Total/NA	Water	8260B	
MB 460-888265/8	Method Blank	Total/NA	Water	8260B	
LCS 460-888265/4	Lab Control Sample	Total/NA	Water	8260B	
460-272828-A-2 MS	Matrix Spike	Total/NA	Water	8260B	
460-272828-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 888393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272726-2	GW-11222397-011023-ZB-02	Total/NA	Water	8260B	
460-272726-3	GW-11222397-011023-MA-03	Total/NA	Water	8260B	
MB 460-888393/8	Method Blank	Total/NA	Water	8260B	
LCS 460-888393/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 460-888393/5	Lab Control Sample Dup	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 887672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272726-1	RB-11222397-011023-ZB-01	Total/NA	Water	3510C	
460-272726-2	GW-11222397-011023-ZB-02	Total/NA	Water	3510C	
460-272726-3	GW-11222397-011023-MA-03	Total/NA	Water	3510C	
460-272726-4	GW-11222397-011023-MA-04	Total/NA	Water	3510C	
460-272726-5	GW-11222397-011023-ZB-05	Total/NA	Water	3510C	
MB 460-887672/1-A	Method Blank	Total/NA	Water	3510C	
LCS 460-887672/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 460-887672/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
460-272726-2 MS	GW-11222397-011023-ZB-02	Total/NA	Water	3510C	
460-272726-2 MSD	GW-11222397-011023-ZB-02	Total/NA	Water	3510C	

Analysis Batch: 887803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272726-1	RB-11222397-011023-ZB-01	Total/NA	Water	8270C	887672
460-272726-2	GW-11222397-011023-ZB-02	Total/NA	Water	8270C	887672
460-272726-3	GW-11222397-011023-MA-03	Total/NA	Water	8270C	887672
460-272726-4	GW-11222397-011023-MA-04	Total/NA	Water	8270C	887672
460-272726-5	GW-11222397-011023-ZB-05	Total/NA	Water	8270C	887672
MB 460-887672/1-A	Method Blank	Total/NA	Water	8270C	887672
LCS 460-887672/2-A	Lab Control Sample	Total/NA	Water	8270C	887672
LCSD 460-887672/3-A	Lab Control Sample Dup	Total/NA	Water	8270C	887672
460-272726-2 MS	GW-11222397-011023-ZB-02	Total/NA	Water	8270C	887672
460-272726-2 MSD	GW-11222397-011023-ZB-02	Total/NA	Water	8270C	887672

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Client Sample ID: RB-11222397-011023-ZB-01

Lab Sample ID: 460-272726-1

Date Collected: 01/10/23 09:30

Matrix: Water

Date Received: 01/10/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			887672	GXY	EET EDI	01/11/23 19:28
Total/NA	Analysis	8270C		1	887803	DAN	EET EDI	01/12/23 16:34

Client Sample ID: GW-11222397-011023-ZB-02

Lab Sample ID: 460-272726-2

Date Collected: 01/10/23 11:45

Matrix: Water

Date Received: 01/10/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	888393	EMM	EET EDI	01/17/23 03:27
Total/NA	Prep	3510C			887672	GXY	EET EDI	01/11/23 19:28
Total/NA	Analysis	8270C		1	887803	DAN	EET EDI	01/12/23 16:13

Client Sample ID: GW-11222397-011023-MA-03

Lab Sample ID: 460-272726-3

Date Collected: 01/10/23 12:12

Matrix: Water

Date Received: 01/10/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	888393	EMM	EET EDI	01/17/23 03:49
Total/NA	Prep	3510C			887672	GXY	EET EDI	01/11/23 19:28
Total/NA	Analysis	8270C		1	887803	DAN	EET EDI	01/12/23 16:55

Client Sample ID: GW-11222397-011023-MA-04

Lab Sample ID: 460-272726-4

Date Collected: 01/10/23 12:27

Matrix: Water

Date Received: 01/10/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			887672	GXY	EET EDI	01/11/23 19:28
Total/NA	Analysis	8270C		1	887803	DAN	EET EDI	01/12/23 17:17

Client Sample ID: GW-11222397-011023-ZB-05

Lab Sample ID: 460-272726-5

Date Collected: 01/10/23 13:00

Matrix: Water

Date Received: 01/10/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	888265	KLB	EET EDI	01/16/23 14:15
Total/NA	Prep	3510C			887672	GXY	EET EDI	01/11/23 19:28
Total/NA	Analysis	8270C		1	887803	DAN	EET EDI	01/12/23 17:38

Client Sample ID: TRIP BLANKS

Lab Sample ID: 460-272726-6

Date Collected: 01/10/23 13:00

Matrix: Water

Date Received: 01/10/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	888265	KLB	EET EDI	01/16/23 12:30

Eurofins Edison

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Laboratory References:
EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

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Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Laboratory: Eurofins Edison

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	01-01-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	1,1,1-Trichloroethane
8260B		Water	1,1,2,2-Tetrachloroethane
8260B		Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8260B		Water	1,1,2-Trichloroethane
8260B		Water	1,1-Dichloroethane
8260B		Water	1,1-Dichloroethene
8260B		Water	1,2,4-Trichlorobenzene
8260B		Water	1,2,4-Trimethylbenzene
8260B		Water	1,2-Dibromo-3-Chloropropane
8260B		Water	1,2-Dibromoethane
8260B		Water	1,2-Dichlorobenzene
8260B		Water	1,2-Dichloroethane
8260B		Water	1,2-Dichloropropane
8260B		Water	1,3-Dichlorobenzene
8260B		Water	1,4-Dichlorobenzene
8260B		Water	2-Butanone (MEK)
8260B		Water	2-Hexanone
8260B		Water	4-Methyl-2-pentanone (MIBK)
8260B		Water	Acetone
8260B		Water	Benzene
8260B		Water	Bromodichloromethane
8260B		Water	Bromoform
8260B		Water	Bromomethane
8260B		Water	Carbon disulfide
8260B		Water	Carbon tetrachloride
8260B		Water	Chlorobenzene
8260B		Water	Chloroethane
8260B		Water	Chloroform
8260B		Water	Chloromethane
8260B		Water	cis-1,2-Dichloroethene
8260B		Water	cis-1,3-Dichloropropene
8260B		Water	Cyclohexane
8260B		Water	Dibromochloromethane
8260B		Water	Dichlorodifluoromethane
8260B		Water	Ethylbenzene
8260B		Water	Isopropylbenzene
8260B		Water	Methyl acetate
8260B		Water	Methyl tert-butyl ether
8260B		Water	Methylcyclohexane
8260B		Water	Methylene Chloride
8260B		Water	Styrene
8260B		Water	Tetrachloroethene
8260B		Water	Toluene
8260B		Water	trans-1,2-Dichloroethene
8260B		Water	trans-1,3-Dichloropropene

Eurofins Edison

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Laboratory: Eurofins Edison (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Trichloroethene
8260B		Water	Trichlorofluoromethane
8260B		Water	Vinyl chloride
8260B		Water	Xylenes, Total
8270C	3510C	Water	1,1'-Biphenyl
8270C	3510C	Water	2,2'-oxybis[1-chloropropane]
8270C	3510C	Water	2,4,5-Trichlorophenol
8270C	3510C	Water	2,4,6-Trichlorophenol
8270C	3510C	Water	2,4-Dichlorophenol
8270C	3510C	Water	2,4-Dimethylphenol
8270C	3510C	Water	2,4-Dinitrophenol
8270C	3510C	Water	2,4-Dinitrotoluene
8270C	3510C	Water	2,6-Dinitrotoluene
8270C	3510C	Water	2-Chloronaphthalene
8270C	3510C	Water	2-Chlorophenol
8270C	3510C	Water	2-Methylnaphthalene
8270C	3510C	Water	2-Methylphenol
8270C	3510C	Water	2-Nitroaniline
8270C	3510C	Water	2-Nitrophenol
8270C	3510C	Water	3,3'-Dichlorobenzidine
8270C	3510C	Water	3-Nitroaniline
8270C	3510C	Water	4,6-Dinitro-2-methylphenol
8270C	3510C	Water	4-Bromophenyl phenyl ether
8270C	3510C	Water	4-Chloro-3-methylphenol
8270C	3510C	Water	4-Chloroaniline
8270C	3510C	Water	4-Chlorophenyl phenyl ether
8270C	3510C	Water	4-Methylphenol
8270C	3510C	Water	4-Nitroaniline
8270C	3510C	Water	4-Nitrophenol
8270C	3510C	Water	Acenaphthene
8270C	3510C	Water	Acenaphthylene
8270C	3510C	Water	Acetophenone
8270C	3510C	Water	Anthracene
8270C	3510C	Water	Atrazine
8270C	3510C	Water	Benzaldehyde
8270C	3510C	Water	Benzo[a]anthracene
8270C	3510C	Water	Benzo[a]pyrene
8270C	3510C	Water	Benzo[b]fluoranthene
8270C	3510C	Water	Benzo[g,h,i]perylene
8270C	3510C	Water	Benzo[k]fluoranthene
8270C	3510C	Water	Bis(2-chloroethoxy)methane
8270C	3510C	Water	Bis(2-chloroethyl)ether
8270C	3510C	Water	Bis(2-ethylhexyl) phthalate
8270C	3510C	Water	Butyl benzyl phthalate
8270C	3510C	Water	Caprolactam
8270C	3510C	Water	Carbazole
8270C	3510C	Water	Chrysene

Eurofins Edison

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Laboratory: Eurofins Edison (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8270C	3510C	Water	Dibenz(a,h)anthracene
8270C	3510C	Water	Dibenzofuran
8270C	3510C	Water	Diethyl phthalate
8270C	3510C	Water	Dimethyl phthalate
8270C	3510C	Water	Di-n-butyl phthalate
8270C	3510C	Water	Di-n-octyl phthalate
8270C	3510C	Water	Fluoranthene
8270C	3510C	Water	Fluorene
8270C	3510C	Water	Hexachlorobenzene
8270C	3510C	Water	Hexachlorobutadiene
8270C	3510C	Water	Hexachlorocyclopentadiene
8270C	3510C	Water	Hexachloroethane
8270C	3510C	Water	Indeno[1,2,3-cd]pyrene
8270C	3510C	Water	Isophorone
8270C	3510C	Water	Naphthalene
8270C	3510C	Water	Nitrobenzene
8270C	3510C	Water	N-Nitrosodi-n-propylamine
8270C	3510C	Water	N-Nitrosodiphenylamine
8270C	3510C	Water	Pentachlorophenol
8270C	3510C	Water	Phenanthrene
8270C	3510C	Water	Phenol
8270C	3510C	Water	Pyrene

Method Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organics (GC/MS)	SW846	EET EDI
8270C	Semivolatile Organics (GC/MS)	SW846	EET EDI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET EDI
5030B	Purge and Trap	SW846	EET EDI

Protocol References:

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

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272726-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
460-272726-1	RB-11222397-011023-ZB-01	Water	01/10/23 09:30	01/10/23 20:00
460-272726-2	GW-11222397-011023-ZB-02	Water	01/10/23 11:45	01/10/23 20:00
460-272726-3	GW-11222397-011023-MA-03	Water	01/10/23 12:12	01/10/23 20:00
460-272726-4	GW-11222397-011023-MA-04	Water	01/10/23 12:27	01/10/23 20:00
460-272726-5	GW-11222397-011023-ZB-05	Water	01/10/23 13:00	01/10/23 20:00
460-272726-6	TRIP BLANKS	Water	01/10/23 13:00	01/10/23 20:00

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272726

IR Gun #

Cooler Temperatures

Cooler #1: -5°C | 1.4°C

Cooler #2:	°C	°C

Cooler #3: _____ °C

Cooler #4:

Cooler #5:

Cooler #6:

၁၀	၁၀
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30	30
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20

Cooler #7:

Cooler #8:

Cooler #9:

If pH adjustments are required record the information below:

Sample No(s). adjusted:

Preservative Name/Conc.:

Lot # of Preservative(s):

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Initials:

Date: 1/10/23

EDS-WI-038, Rev 4, 06/09/2014

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 460-272726-1

Login Number: 272726

List Number: 1

Creator: Lysy, Susan

List Source: Eurofins Edison

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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.	False	Refer to Job Narrative for details.
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Michelle Kukta
GHD Services Inc.
2055 Niagara Falls Blvd., Suite 3
Niagara Falls, New York 14304

Generated 1/31/2023 10:04:13 AM

JOB DESCRIPTION

11222397- RACER

JOB NUMBER

460-272828-1

Eurofins Edison

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing Northeast, LLC Edison and its client. All questions regarding this report should be directed to the Eurofins Environment Testing Northeast, LLC Edison Project Manager or designee who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northeast, LLC Project Manager.

Authorization



Generated
1/31/2023 10:04:13 AM

Authorized for release by
Elizabeth Flannery, Project Manager I
Elizabeth.Flannery@et.eurofinsus.com
(732)549-3900

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	7
Client Sample Results	10
Surrogate Summary	22
QC Sample Results	23
QC Association Summary	46
Lab Chronicle	50
Certification Summary	53
Method Summary	55
Sample Summary	56
Chain of Custody	57
Receipt Checklists	59



Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

GC/MS VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
N	This flag indicates the presumptive evidence of a compound.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Job ID: 460-272828-1

Laboratory: Eurofins Edison

Narrative

CASE NARRATIVE

Client: GHD Services Inc.

Project: 11222397- RACER

Report Number: 460-272828-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 1/11/2023 8:00 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 1.4° C.

Receipt Exceptions

Per laboratory policy the Trip Blank sample date/time was changed to reflect the latest sample date/time of the sampling event. TRIP BLANK (460-272828-10) and TRIP BLANK (460-272828-11)

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples RB-11222397-011123-ZB-06 (460-272828-1), GW-11222397-011123-ZB-07 (460-272828-2), GW-11222397-011123-MA-08 (460-272828-3), GW-11222397-011123-MA-09 (460-272828-4), GW-11222397-011123-ZB-10 (460-272828-5), GW-11222397-011123-MA-13 (460-272828-8), TRIP BLANK (460-272828-10) and TRIP BLANK (460-272828-11) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260DEL. The samples were analyzed on 01/16/2023 and 01/18/2023.

The continuing calibration verification (CCV) associated with batch 460-888265 recovered outside acceptance criteria, low biased, for 1,2-Dibromo-3-Chloropropane. 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 continuing calibration verification (CCV) associated with batch 460-888607 recovered above the upper control limit for Trichlorofluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The continuing calibration verification (CCV) associated with batch 460-888607 recovered outside acceptance criteria, low biased, for 1,2-Dibromo-3-Chloropropane. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated

Case Narrative

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Job ID: 460-272828-1 (Continued)

Laboratory: Eurofins Edison (Continued)

samples were non-detect for the analyte(s), the data are reported.

No other difficulties were encountered during the volatiles analysis.

All other quality control parameters were within the acceptance limits.

METALS - DISSOLVED)(ICP/MS)

Samples RB-11222397-011123-ZB-11 (460-272828-6), GW-11222397-011123-ZB-12 (460-272828-7), GW-11222397-011123-MA-13 (460-272828-8) and GW-11222397-011123-MA-14 (460-272828-9) were analyzed for Metals - Dissolved)(ICP/MS) in accordance with EPA SW-846 Method 6020B - Dissolved. The samples were prepared on 01/12/2023 and 01/20/2023 and analyzed on 01/12/2023 and 01/23/2023.

No other difficulties were encountered during the metals, diss. analysis.

All other quality control parameters were within the acceptance limits.

METALS - TOTAL (ICP/MS)

Samples RB-11222397-011123-ZB-11 (460-272828-6), GW-11222397-011123-ZB-12 (460-272828-7), GW-11222397-011123-MA-13 (460-272828-8) and GW-11222397-011123-MA-14 (460-272828-9) were analyzed for Metals - Total (ICP/MS) in accordance with EPA SW-846 Method 6020B - Total. The samples were prepared on 01/13/2023, 01/15/2023, 01/18/2023 and 01/24/2023 and analyzed on 01/18/2023, 01/19/2023, 01/20/2023, 01/25/2023 and 01/27/2023.

Sodium and Manganese failed the recovery criteria high for the MS of sample 460-272718-5 in batch 460-888724.

Sodium failed the recovery criteria low for the MSD of sample 460-272718-5 in batch 460-888724. Manganese failed the recovery criteria high.

Calcium and Sodium failed the recovery criteria low for the MS of sample GW-11222397-011123-ZB-12MS (460-272828-7) in batch 460-888724.

Magnesium and Sodium failed the recovery criteria low for the MSD of sample GW-11222397-011123-ZB-12MSD (460-272828-7) in batch 460-888724. Aluminum and Calcium failed the recovery criteria high.

Calcium, Chromium and Sodium failed the recovery criteria high for the MS/MSD of sample 460-273072-4 in batch 460-888909.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Cadmium exceeded the RPD limit for the duplicate of sample 460-272718-5. for the duplicate of sample 460-273069-10. for the duplicate of sample 460-273072-4. Refer to the QC report for details.

No other difficulties were encountered during the metals analysis.

All other quality control parameters were within the acceptance limits.

MERCURY

Samples RB-11222397-011123-ZB-11 (460-272828-6), GW-11222397-011123-ZB-12 (460-272828-7), GW-11222397-011123-MA-13 (460-272828-8) and GW-11222397-011123-MA-14 (460-272828-9) were analyzed for mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 01/17/2023.

No difficulties were encountered during the Hg analysis.

All quality control parameters were within the acceptance limits.

Detection Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: RB-11222397-011123-ZB-06

Lab Sample ID: 460-272828-1

No Detections.

Client Sample ID: GW-11222397-011123-ZB-07

Lab Sample ID: 460-272828-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	0.42	J	1.0	0.25	ug/L	1		8260B	Total/NA
Trichlorofluoromethane	2.1		1.0	0.32	ug/L	1		8260B	Total/NA

Client Sample ID: GW-11222397-011123-MA-08

Lab Sample ID: 460-272828-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	7.1		1.0	0.37	ug/L	1		8260B	Total/NA
1,2-Dichloropropane	0.35	J	1.0	0.35	ug/L	1		8260B	Total/NA
2-Butanone (MEK)	15		5.0	1.9	ug/L	1		8260B	Total/NA
4-Methyl-2-pentanone (MIBK)	3.7	J	5.0	1.3	ug/L	1		8260B	Total/NA
Acetone	70		5.0	4.4	ug/L	1		8260B	Total/NA
Benzene	0.26	J	1.0	0.20	ug/L	1		8260B	Total/NA
Carbon disulfide	14		1.0	0.82	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.1		1.0	0.22	ug/L	1		8260B	Total/NA
Ethylbenzene	3.3		1.0	0.30	ug/L	1		8260B	Total/NA
Methylene Chloride	0.35	J	1.0	0.32	ug/L	1		8260B	Total/NA
Styrene	1.6		1.0	0.42	ug/L	1		8260B	Total/NA
Toluene	2.0		1.0	0.38	ug/L	1		8260B	Total/NA
Trichlorofluoromethane	3.4		1.0	0.32	ug/L	1		8260B	Total/NA
Vinyl chloride	0.45	J	1.0	0.17	ug/L	1		8260B	Total/NA
Xylenes, Total	17		2.0	0.65	ug/L	1		8260B	Total/NA

Client Sample ID: GW-11222397-011123-MA-09

Lab Sample ID: 460-272828-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	7.4		1.0	0.37	ug/L	1		8260B	Total/NA
1,2-Dichloropropane	0.38	J	1.0	0.35	ug/L	1		8260B	Total/NA
2-Butanone (MEK)	14		5.0	1.9	ug/L	1		8260B	Total/NA
4-Methyl-2-pentanone (MIBK)	3.8	J	5.0	1.3	ug/L	1		8260B	Total/NA
Acetone	74		5.0	4.4	ug/L	1		8260B	Total/NA
Benzene	0.35	J	1.0	0.20	ug/L	1		8260B	Total/NA
Carbon disulfide	17		1.0	0.82	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.1		1.0	0.22	ug/L	1		8260B	Total/NA
Ethylbenzene	3.3		1.0	0.30	ug/L	1		8260B	Total/NA
Isopropylbenzene	0.34	J	1.0	0.34	ug/L	1		8260B	Total/NA
Styrene	1.8		1.0	0.42	ug/L	1		8260B	Total/NA
Toluene	2.0		1.0	0.38	ug/L	1		8260B	Total/NA
Trichlorofluoromethane	3.1		1.0	0.32	ug/L	1		8260B	Total/NA
Vinyl chloride	0.39	J	1.0	0.17	ug/L	1		8260B	Total/NA
Xylenes, Total	19		2.0	0.65	ug/L	1		8260B	Total/NA

Client Sample ID: GW-11222397-011123-ZB-10

Lab Sample ID: 460-272828-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichlorofluoromethane	0.33	J	1.0	0.32	ug/L	1		8260B	Total/NA

Client Sample ID: RB-11222397-011123-ZB-11

Lab Sample ID: 460-272828-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	23.3		4.0	2.5	ug/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Edison

Detection Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: RB-11222397-011123-ZB-11 (Continued)

Lab Sample ID: 460-272828-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	41.5		4.0	0.91	ug/L	1		6020B	Total/NA

Client Sample ID: GW-11222397-011123-ZB-12

Lab Sample ID: 460-272828-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	1920	F1	40.0	19.5	ug/L	1		6020B	Total/NA
Arsenic	1.0	J	2.0	0.89	ug/L	1		6020B	Total/NA
Barium	327		4.0	0.91	ug/L	1		6020B	Total/NA
Calcium	74300		500	53.6	ug/L	1		6020B	Total/NA
Chromium	3.4	J	4.0	2.5	ug/L	1		6020B	Total/NA
Cobalt	7.4		4.0	0.71	ug/L	1		6020B	Total/NA
Copper	5.1		4.0	2.5	ug/L	1		6020B	Total/NA
Iron	3500		120	58.2	ug/L	1		6020B	Total/NA
Lead	2.7		1.2	0.84	ug/L	1		6020B	Total/NA
Magnesium	52700		200	46.9	ug/L	1		6020B	Total/NA
Manganese	1270		8.0	1.5	ug/L	1		6020B	Total/NA
Nickel	9.3		4.0	0.91	ug/L	1		6020B	Total/NA
Potassium	8730		200	112	ug/L	1		6020B	Total/NA
Sodium	84800		500	163	ug/L	1		6020B	Total/NA
Vanadium	5.3		4.0	0.68	ug/L	1		6020B	Total/NA
Zinc	20.5		16.0	6.5	ug/L	1		6020B	Total/NA
Manganese, Dissolved	1170		8.0	1.5	ug/L	1		6020B	Dissolved

Client Sample ID: GW-11222397-011123-MA-13

Lab Sample ID: 460-272828-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	3.8		1.0	0.31	ug/L	1		8260B	Total/NA
Aluminum	94.4		40.0	19.5	ug/L	1		6020B	Total/NA
Barium	271		4.0	0.91	ug/L	1		6020B	Total/NA
Calcium	35200		500	53.6	ug/L	1		6020B	Total/NA
Cobalt	6.0		4.0	0.71	ug/L	1		6020B	Total/NA
Iron	90.3	J	120	58.2	ug/L	1		6020B	Total/NA
Magnesium	37600		200	46.9	ug/L	1		6020B	Total/NA
Manganese	6780		8.0	1.5	ug/L	1		6020B	Total/NA
Nickel	5.1		4.0	0.91	ug/L	1		6020B	Total/NA
Potassium	3370		200	112	ug/L	1		6020B	Total/NA
Sodium	106000		500	163	ug/L	1		6020B	Total/NA
Vanadium	0.76	J	4.0	0.68	ug/L	1		6020B	Total/NA
Zinc	10	J	16.0	6.5	ug/L	1		6020B	Total/NA
Manganese, Dissolved	7910		8.0	1.5	ug/L	1		6020B	Dissolved

Client Sample ID: GW-11222397-011123-MA-14

Lab Sample ID: 460-272828-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	1290		40.0	19.5	ug/L	1		6020B	Total/NA
Barium	290		4.0	0.91	ug/L	1		6020B	Total/NA
Calcium	38100		500	53.6	ug/L	1		6020B	Total/NA
Chromium	8.7		4.0	2.5	ug/L	1		6020B	Total/NA
Cobalt	7.3		4.0	0.71	ug/L	1		6020B	Total/NA
Copper	3.6	J	4.0	2.5	ug/L	1		6020B	Total/NA
Iron	1950		120	58.2	ug/L	1		6020B	Total/NA
Lead	8.7		1.2	0.84	ug/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Edison

Detection Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: GW-11222397-011123-MA-14 (Continued)

Lab Sample ID: 460-272828-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	41200		200	46.9	ug/L	1		6020B	Total/NA
Manganese	7170		8.0	1.5	ug/L	1		6020B	Total/NA
Nickel	5.5		4.0	0.91	ug/L	1		6020B	Total/NA
Potassium	3520		200	112	ug/L	1		6020B	Total/NA
Sodium	105000		500	163	ug/L	1		6020B	Total/NA
Vanadium	5.6		4.0	0.68	ug/L	1		6020B	Total/NA
Zinc	17.7		16.0	6.5	ug/L	1		6020B	Total/NA
Manganese, Dissolved	7890		8.0	1.5	ug/L	1		6020B	Dissolved

Client Sample ID: TRIP BLANK

Lab Sample ID: 460-272828-10

No Detections.

Client Sample ID: TRIP BLANK

Lab Sample ID: 460-272828-11

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Edison

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: RB-11222397-011123-ZB-06

Lab Sample ID: 460-272828-1

Date Collected: 01/11/23 09:30

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/16/23 12:51	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			01/16/23 12:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	1.0	0.31	ug/L			01/16/23 12:51	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			01/16/23 12:51	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			01/16/23 12:51	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			01/16/23 12:51	1
1,2,4-Trichlorobenzene	0.37	U	1.0	0.37	ug/L			01/16/23 12:51	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			01/16/23 12:51	1
1,2-Dibromo-3-Chloropropane	0.38	U	1.0	0.38	ug/L			01/16/23 12:51	1
1,2-Dibromoethane	0.50	U	1.0	0.50	ug/L			01/16/23 12:51	1
1,2-Dichlorobenzene	0.21	U	1.0	0.21	ug/L			01/16/23 12:51	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			01/16/23 12:51	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			01/16/23 12:51	1
1,3-Dichlorobenzene	0.34	U	1.0	0.34	ug/L			01/16/23 12:51	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			01/16/23 12:51	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			01/16/23 12:51	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			01/16/23 12:51	1
4-Methyl-2-pentanone (MIBK)	1.3	U	5.0	1.3	ug/L			01/16/23 12:51	1
Acetone	4.4	U	5.0	4.4	ug/L			01/16/23 12:51	1
Benzene	0.20	U	1.0	0.20	ug/L			01/16/23 12:51	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			01/16/23 12:51	1
Bromoform	0.54	U	1.0	0.54	ug/L			01/16/23 12:51	1
Bromomethane	0.55	U	1.0	0.55	ug/L			01/16/23 12:51	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			01/16/23 12:51	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			01/16/23 12:51	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			01/16/23 12:51	1
Chloroethane	0.32	U	1.0	0.32	ug/L			01/16/23 12:51	1
Chloroform	0.33	U	1.0	0.33	ug/L			01/16/23 12:51	1
Chloromethane	0.40	U	1.0	0.40	ug/L			01/16/23 12:51	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			01/16/23 12:51	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 12:51	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			01/16/23 12:51	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			01/16/23 12:51	1
Dichlorodifluoromethane	0.31	U	1.0	0.31	ug/L			01/16/23 12:51	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			01/16/23 12:51	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			01/16/23 12:51	1
Methyl acetate	0.79	U	5.0	0.79	ug/L			01/16/23 12:51	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			01/16/23 12:51	1
Methylcyclohexane	0.71	U	1.0	0.71	ug/L			01/16/23 12:51	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			01/16/23 12:51	1
Styrene	0.42	U	1.0	0.42	ug/L			01/16/23 12:51	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			01/16/23 12:51	1
Toluene	0.38	U	1.0	0.38	ug/L			01/16/23 12:51	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			01/16/23 12:51	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 12:51	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			01/16/23 12:51	1
Trichlorofluoromethane	0.32	U	1.0	0.32	ug/L			01/16/23 12:51	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			01/16/23 12:51	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			01/16/23 12:51	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: RB-11222397-011123-ZB-06

Lab Sample ID: 460-272828-1

Date Collected: 01/11/23 09:30

Matrix: Water

Date Received: 01/11/23 20:00

<i>Tentatively Identified Compound</i>	<i>Est. Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>RT</i>	<i>CAS No.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Tentatively Identified Compound</i>	<i>None</i>		<i>ug/L</i>					<i>01/16/23 12:51</i>	<i>1</i>
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2-Dichloroethane-d4 (Surr)	102		70 - 128					01/16/23 12:51	1
4-Bromofluorobenzene	106		76 - 120					01/16/23 12:51	1
Dibromofluoromethane (Surr)	103		77 - 124					01/16/23 12:51	1
Toluene-d8 (Surr)	104		80 - 120					01/16/23 12:51	1

Client Sample ID: GW-11222397-011123-ZB-07

Lab Sample ID: 460-272828-2

Date Collected: 01/11/23 10:30

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/16/23 15:18	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			01/16/23 15:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	1.0	0.31	ug/L			01/16/23 15:18	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			01/16/23 15:18	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			01/16/23 15:18	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			01/16/23 15:18	1
1,2,4-Trichlorobenzene	0.37	U	1.0	0.37	ug/L			01/16/23 15:18	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			01/16/23 15:18	1
1,2-Dibromo-3-Chloropropane	0.38	U	1.0	0.38	ug/L			01/16/23 15:18	1
1,2-Dibromoethane	0.50	U	1.0	0.50	ug/L			01/16/23 15:18	1
1,2-Dichlorobenzene	0.21	U	1.0	0.21	ug/L			01/16/23 15:18	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			01/16/23 15:18	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			01/16/23 15:18	1
1,3-Dichlorobenzene	0.34	U	1.0	0.34	ug/L			01/16/23 15:18	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			01/16/23 15:18	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			01/16/23 15:18	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			01/16/23 15:18	1
4-Methyl-2-pentanone (MIBK)	1.3	U	5.0	1.3	ug/L			01/16/23 15:18	1
Acetone	4.4	U	5.0	4.4	ug/L			01/16/23 15:18	1
Benzene	0.20	U	1.0	0.20	ug/L			01/16/23 15:18	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			01/16/23 15:18	1
Bromoform	0.54	U	1.0	0.54	ug/L			01/16/23 15:18	1
Bromomethane	0.55	U	1.0	0.55	ug/L			01/16/23 15:18	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			01/16/23 15:18	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			01/16/23 15:18	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			01/16/23 15:18	1
Chloroethane	0.32	U	1.0	0.32	ug/L			01/16/23 15:18	1
Chloroform	0.33	U	1.0	0.33	ug/L			01/16/23 15:18	1
Chloromethane	0.40	U	1.0	0.40	ug/L			01/16/23 15:18	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			01/16/23 15:18	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 15:18	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			01/16/23 15:18	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			01/16/23 15:18	1
Dichlorodifluoromethane	0.31	U	1.0	0.31	ug/L			01/16/23 15:18	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			01/16/23 15:18	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			01/16/23 15:18	1
Methyl acetate	0.79	U	5.0	0.79	ug/L			01/16/23 15:18	1

Eurofins Edison

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: GW-11222397-011123-ZB-07

Lab Sample ID: 460-272828-2

Date Collected: 01/11/23 10:30

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			01/16/23 15:18	1
Methylcyclohexane	0.71	U	1.0	0.71	ug/L			01/16/23 15:18	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			01/16/23 15:18	1
Styrene	0.42	U	1.0	0.42	ug/L			01/16/23 15:18	1
Tetrachloroethene	0.42	J	1.0	0.25	ug/L			01/16/23 15:18	1
Toluene	0.38	U	1.0	0.38	ug/L			01/16/23 15:18	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			01/16/23 15:18	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 15:18	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			01/16/23 15:18	1
Trichlorofluoromethane	2.1		1.0	0.32	ug/L			01/16/23 15:18	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			01/16/23 15:18	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			01/16/23 15:18	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					01/16/23 15:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		70 - 128		01/16/23 15:18	1
4-Bromofluorobenzene	101		76 - 120		01/16/23 15:18	1
Dibromofluoromethane (Surr)	101		77 - 124		01/16/23 15:18	1
Toluene-d8 (Surr)	101		80 - 120		01/16/23 15:18	1

Client Sample ID: GW-11222397-011123-MA-08

Lab Sample ID: 460-272828-3

Date Collected: 01/11/23 12:30

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/16/23 15:39	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			01/16/23 15:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	1.0	0.31	ug/L			01/16/23 15:39	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			01/16/23 15:39	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			01/16/23 15:39	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			01/16/23 15:39	1
1,2,4-Trichlorobenzene	0.37	U	1.0	0.37	ug/L			01/16/23 15:39	1
1,2,4-Trimethylbenzene	7.1		1.0	0.37	ug/L			01/16/23 15:39	1
1,2-Dibromo-3-Chloropropane	0.38	U	1.0	0.38	ug/L			01/16/23 15:39	1
1,2-Dibromoethane	0.50	U	1.0	0.50	ug/L			01/16/23 15:39	1
1,2-Dichlorobenzene	0.21	U	1.0	0.21	ug/L			01/16/23 15:39	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			01/16/23 15:39	1
1,2-Dichloropropane	0.35	J	1.0	0.35	ug/L			01/16/23 15:39	1
1,3-Dichlorobenzene	0.34	U	1.0	0.34	ug/L			01/16/23 15:39	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			01/16/23 15:39	1
2-Butanone (MEK)	15		5.0	1.9	ug/L			01/16/23 15:39	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			01/16/23 15:39	1
4-Methyl-2-pentanone (MIBK)	3.7	J	5.0	1.3	ug/L			01/16/23 15:39	1
Acetone	70		5.0	4.4	ug/L			01/16/23 15:39	1
Benzene	0.26	J	1.0	0.20	ug/L			01/16/23 15:39	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			01/16/23 15:39	1
Bromoform	0.54	U	1.0	0.54	ug/L			01/16/23 15:39	1

Eurofins Edison

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: GW-11222397-011123-MA-08

Lab Sample ID: 460-272828-3

Date Collected: 01/11/23 12:30

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	0.55	U	1.0	0.55	ug/L			01/16/23 15:39	1
Carbon disulfide	14		1.0	0.82	ug/L			01/16/23 15:39	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			01/16/23 15:39	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			01/16/23 15:39	1
Chloroethane	0.32	U	1.0	0.32	ug/L			01/16/23 15:39	1
Chloroform	0.33	U	1.0	0.33	ug/L			01/16/23 15:39	1
Chloromethane	0.40	U	1.0	0.40	ug/L			01/16/23 15:39	1
cis-1,2-Dichloroethene	1.1		1.0	0.22	ug/L			01/16/23 15:39	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 15:39	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			01/16/23 15:39	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			01/16/23 15:39	1
Dichlorodifluoromethane	0.31	U	1.0	0.31	ug/L			01/16/23 15:39	1
Ethylbenzene	3.3		1.0	0.30	ug/L			01/16/23 15:39	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			01/16/23 15:39	1
Methyl acetate	0.79	U	5.0	0.79	ug/L			01/16/23 15:39	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			01/16/23 15:39	1
Methylcyclohexane	0.71	U	1.0	0.71	ug/L			01/16/23 15:39	1
Methylene Chloride	0.35	J	1.0	0.32	ug/L			01/16/23 15:39	1
Styrene	1.6		1.0	0.42	ug/L			01/16/23 15:39	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			01/16/23 15:39	1
Toluene	2.0		1.0	0.38	ug/L			01/16/23 15:39	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			01/16/23 15:39	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 15:39	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			01/16/23 15:39	1
Trichlorofluoromethane	3.4		1.0	0.32	ug/L			01/16/23 15:39	1
Vinyl chloride	0.45	J	1.0	0.17	ug/L			01/16/23 15:39	1
Xylenes, Total	17		2.0	0.65	ug/L			01/16/23 15:39	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Ethane, 2-chloro-1,1,1-trifluoro-	6.4	J N	ug/L		1.53	75-88-7		01/16/23 15:39	1
Ethane, 1-chloro-1-fluoro-	19	J N	ug/L		1.69	1615-75-4		01/16/23 15:39	1
Unknown	44	J	ug/L		2.05			01/16/23 15:39	1
Ethane, 2,2-dichloro-1,1,1-trifluoro-	22	J N	ug/L		2.12	306-83-2		01/16/23 15:39	1
m-Xylene & p-Xylene	12		ug/L		8.41	179601-23-1		01/16/23 15:39	1
o-Xylene	5.6		ug/L		8.86	95-47-6		01/16/23 15:39	1
Benzene, 1-ethyl-3-methyl-	10	J N	ug/L		9.70	620-14-4		01/16/23 15:39	1
Benzene, 1,2,3-trimethyl-	5.4	J N	ug/L		10.48	526-73-8		01/16/23 15:39	1
Benzene, cyclopropyl-	5.5	J N	ug/L		10.65	873-49-4		01/16/23 15:39	1
Naphthalene	32	J N	ug/L		12.16	91-20-3		01/16/23 15:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		70 - 128		01/16/23 15:39	1
4-Bromofluorobenzene	97		76 - 120		01/16/23 15:39	1
Dibromofluoromethane (Surr)	96		77 - 124		01/16/23 15:39	1
Toluene-d8 (Surr)	100		80 - 120		01/16/23 15:39	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: GW-11222397-011123-MA-09

Lab Sample ID: 460-272828-4

Date Collected: 01/11/23 12:45

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/16/23 16:00	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			01/16/23 16:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	1.0	0.31	ug/L			01/16/23 16:00	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			01/16/23 16:00	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			01/16/23 16:00	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			01/16/23 16:00	1
1,2,4-Trichlorobenzene	0.37	U	1.0	0.37	ug/L			01/16/23 16:00	1
1,2,4-Trimethylbenzene	7.4		1.0	0.37	ug/L			01/16/23 16:00	1
1,2-Dibromo-3-Chloropropane	0.38	U	1.0	0.38	ug/L			01/16/23 16:00	1
1,2-Dibromoethane	0.50	U	1.0	0.50	ug/L			01/16/23 16:00	1
1,2-Dichlorobenzene	0.21	U	1.0	0.21	ug/L			01/16/23 16:00	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			01/16/23 16:00	1
1,2-Dichloropropane	0.38	J	1.0	0.35	ug/L			01/16/23 16:00	1
1,3-Dichlorobenzene	0.34	U	1.0	0.34	ug/L			01/16/23 16:00	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			01/16/23 16:00	1
2-Butanone (MEK)	14		5.0	1.9	ug/L			01/16/23 16:00	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			01/16/23 16:00	1
4-Methyl-2-pentanone (MIBK)	3.8	J	5.0	1.3	ug/L			01/16/23 16:00	1
Acetone	74		5.0	4.4	ug/L			01/16/23 16:00	1
Benzene	0.35	J	1.0	0.20	ug/L			01/16/23 16:00	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			01/16/23 16:00	1
Bromoform	0.54	U	1.0	0.54	ug/L			01/16/23 16:00	1
Bromomethane	0.55	U	1.0	0.55	ug/L			01/16/23 16:00	1
Carbon disulfide	17		1.0	0.82	ug/L			01/16/23 16:00	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			01/16/23 16:00	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			01/16/23 16:00	1
Chloroethane	0.32	U	1.0	0.32	ug/L			01/16/23 16:00	1
Chloroform	0.33	U	1.0	0.33	ug/L			01/16/23 16:00	1
Chloromethane	0.40	U	1.0	0.40	ug/L			01/16/23 16:00	1
cis-1,2-Dichloroethene	1.1		1.0	0.22	ug/L			01/16/23 16:00	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 16:00	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			01/16/23 16:00	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			01/16/23 16:00	1
Dichlorodifluoromethane	0.31	U	1.0	0.31	ug/L			01/16/23 16:00	1
Ethylbenzene	3.3		1.0	0.30	ug/L			01/16/23 16:00	1
Isopropylbenzene	0.34	J	1.0	0.34	ug/L			01/16/23 16:00	1
Methyl acetate	0.79	U	5.0	0.79	ug/L			01/16/23 16:00	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			01/16/23 16:00	1
Methylcyclohexane	0.71	U	1.0	0.71	ug/L			01/16/23 16:00	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			01/16/23 16:00	1
Styrene	1.8		1.0	0.42	ug/L			01/16/23 16:00	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			01/16/23 16:00	1
Toluene	2.0		1.0	0.38	ug/L			01/16/23 16:00	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			01/16/23 16:00	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 16:00	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			01/16/23 16:00	1
Trichlorofluoromethane	3.1		1.0	0.32	ug/L			01/16/23 16:00	1
Vinyl chloride	0.39	J	1.0	0.17	ug/L			01/16/23 16:00	1
Xylenes, Total	19		2.0	0.65	ug/L			01/16/23 16:00	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: GW-11222397-011123-MA-09

Lab Sample ID: 460-272828-4

Date Collected: 01/11/23 12:45

Matrix: Water

Date Received: 01/11/23 20:00

<i>Tentatively Identified Compound</i>	<i>Est. Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>RT</i>	<i>CAS No.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Ethane, 2-chloro-1,1,1-trifluoro-	9.5	J N	ug/L		1.53	75-88-7		01/16/23 16:00	1
Ethane, 1-chloro-1-fluoro-	20	J N	ug/L		1.69	1615-75-4		01/16/23 16:00	1
1,1-Dichloro-1-fluoroethane	46	J N	ug/L		2.05	1717-00-6		01/16/23 16:00	1
Ethane, 2,2-dichloro-1,1,1-trifluoro-	22	J N	ug/L		2.12	306-83-2		01/16/23 16:00	1
m-Xylene & p-Xylene	12		ug/L		8.41	179601-23-1		01/16/23 16:00	1
o-Xylene	6.6		ug/L		8.84	95-47-6		01/16/23 16:00	1
Benzene, 1-ethyl-3-methyl-	11	J N	ug/L		9.70	620-14-4		01/16/23 16:00	1
Benzene, 1,2,3-trimethyl-	8.7	J N	ug/L		10.48	526-73-8		01/16/23 16:00	1
Indane	6.0	J N	ug/L		10.65	496-11-7		01/16/23 16:00	1
Naphthalene	37	J N	ug/L		12.16	91-20-3		01/16/23 16:00	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2-Dichloroethane-d4 (Surr)	102		70 - 128					01/16/23 16:00	1
4-Bromofluorobenzene	105		76 - 120					01/16/23 16:00	1
Dibromofluoromethane (Surr)	107		77 - 124					01/16/23 16:00	1
Toluene-d8 (Surr)	104		80 - 120					01/16/23 16:00	1

Client Sample ID: GW-11222397-011123-ZB-10

Lab Sample ID: 460-272828-5

Date Collected: 01/11/23 12:30

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS)

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/16/23 14:36	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			01/16/23 14:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	1.0	0.31	ug/L			01/16/23 14:36	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			01/16/23 14:36	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			01/16/23 14:36	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			01/16/23 14:36	1
1,2,4-Trichlorobenzene	0.37	U	1.0	0.37	ug/L			01/16/23 14:36	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			01/16/23 14:36	1
1,2-Dibromo-3-Chloropropane	0.38	U	1.0	0.38	ug/L			01/16/23 14:36	1
1,2-Dibromoethane	0.50	U	1.0	0.50	ug/L			01/16/23 14:36	1
1,2-Dichlorobenzene	0.21	U	1.0	0.21	ug/L			01/16/23 14:36	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			01/16/23 14:36	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			01/16/23 14:36	1
1,3-Dichlorobenzene	0.34	U	1.0	0.34	ug/L			01/16/23 14:36	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			01/16/23 14:36	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			01/16/23 14:36	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			01/16/23 14:36	1
4-Methyl-2-pentanone (MIBK)	1.3	U	5.0	1.3	ug/L			01/16/23 14:36	1
Acetone	4.4	U	5.0	4.4	ug/L			01/16/23 14:36	1
Benzene	0.20	U	1.0	0.20	ug/L			01/16/23 14:36	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			01/16/23 14:36	1
Bromoform	0.54	U	1.0	0.54	ug/L			01/16/23 14:36	1
Bromomethane	0.55	U	1.0	0.55	ug/L			01/16/23 14:36	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			01/16/23 14:36	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			01/16/23 14:36	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			01/16/23 14:36	1
Chloroethane	0.32	U	1.0	0.32	ug/L			01/16/23 14:36	1
Chloroform	0.33	U	1.0	0.33	ug/L			01/16/23 14:36	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: GW-11222397-011123-ZB-10

Lab Sample ID: 460-272828-5

Date Collected: 01/11/23 12:30

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	0.40	U	1.0	0.40	ug/L			01/16/23 14:36	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			01/16/23 14:36	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 14:36	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			01/16/23 14:36	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			01/16/23 14:36	1
Dichlorodifluoromethane	0.31	U	1.0	0.31	ug/L			01/16/23 14:36	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			01/16/23 14:36	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			01/16/23 14:36	1
Methyl acetate	0.79	U	5.0	0.79	ug/L			01/16/23 14:36	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			01/16/23 14:36	1
Methylcyclohexane	0.71	U	1.0	0.71	ug/L			01/16/23 14:36	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			01/16/23 14:36	1
Styrene	0.42	U	1.0	0.42	ug/L			01/16/23 14:36	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			01/16/23 14:36	1
Toluene	0.38	U	1.0	0.38	ug/L			01/16/23 14:36	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			01/16/23 14:36	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 14:36	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			01/16/23 14:36	1
Trichlorofluoromethane	0.33	J	1.0	0.32	ug/L			01/16/23 14:36	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			01/16/23 14:36	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			01/16/23 14:36	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					01/16/23 14:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 128		01/16/23 14:36	1
4-Bromofluorobenzene	100		76 - 120		01/16/23 14:36	1
Dibromofluoromethane (Surr)	101		77 - 124		01/16/23 14:36	1
Toluene-d8 (Surr)	99		80 - 120		01/16/23 14:36	1

Client Sample ID: RB-11222397-011123-ZB-11

Lab Sample ID: 460-272828-6

Date Collected: 01/11/23 13:20

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	19.5	U	40.0	19.5	ug/L		01/15/23 10:19	01/20/23 00:38	1
Antimony	0.76	U	2.0	0.76	ug/L		01/15/23 10:19	01/20/23 00:38	1
Arsenic	0.89	U	2.0	0.89	ug/L		01/15/23 10:19	01/20/23 00:38	1
Barium	0.91	U	4.0	0.91	ug/L		01/15/23 10:19	01/20/23 00:38	1
Beryllium	0.13	U	0.80	0.13	ug/L		01/15/23 10:19	01/20/23 00:38	1
Cadmium	0.39	U	2.0	0.39	ug/L		01/15/23 10:19	01/20/23 00:38	1
Calcium	53.6	U	500	53.6	ug/L		01/15/23 10:19	01/20/23 00:38	1
Chromium	2.5	U	4.0	2.5	ug/L		01/15/23 10:19	01/20/23 00:38	1
Cobalt	0.71	U	4.0	0.71	ug/L		01/15/23 10:19	01/20/23 00:38	1
Copper	23.3		4.0	2.5	ug/L		01/15/23 10:19	01/20/23 00:38	1
Iron	58.2	U	120	58.2	ug/L		01/15/23 10:19	01/20/23 00:38	1
Lead	0.84	U	1.2	0.84	ug/L		01/15/23 10:19	01/20/23 00:38	1
Magnesium	46.9	U	200	46.9	ug/L		01/15/23 10:19	01/20/23 00:38	1

Eurofins Edison

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: RB-11222397-011123-ZB-11

Lab Sample ID: 460-272828-6

Date Collected: 01/11/23 13:20

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	1.5	U	8.0	1.5	ug/L		01/15/23 10:19	01/20/23 00:38	1
Nickel	41.5		4.0	0.91	ug/L		01/15/23 10:19	01/20/23 00:38	1
Potassium	112	U	200	112	ug/L		01/15/23 10:19	01/20/23 00:38	1
Selenium	0.59	U	2.5	0.59	ug/L		01/15/23 10:19	01/20/23 00:38	1
Silver	0.29	U	2.0	0.29	ug/L		01/15/23 10:19	01/20/23 00:38	1
Sodium	163	U	500	163	ug/L		01/15/23 10:19	01/20/23 00:38	1
Thallium	0.21	U	0.80	0.21	ug/L		01/15/23 10:19	01/20/23 00:38	1
Vanadium	0.68	U	4.0	0.68	ug/L		01/15/23 10:19	01/20/23 00:38	1
Zinc	6.5	U	16.0	6.5	ug/L		01/15/23 10:19	01/20/23 00:38	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese, Dissolved	1.5	U	8.0	1.5	ug/L		01/12/23 20:17	01/12/23 21:44	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.091	U	0.20	0.091	ug/L		01/17/23 14:32	01/17/23 15:55	1

Client Sample ID: GW-11222397-011123-ZB-12

Lab Sample ID: 460-272828-7

Date Collected: 01/11/23 14:05

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1920	F1	40.0	19.5	ug/L		01/13/23 19:05	01/18/23 01:53	1
Antimony	0.76	U	2.0	0.76	ug/L		01/13/23 19:05	01/18/23 01:53	1
Arsenic	1.0	J	2.0	0.89	ug/L		01/13/23 19:05	01/18/23 01:53	1
Barium	327		4.0	0.91	ug/L		01/13/23 19:05	01/18/23 01:53	1
Beryllium	0.13	U	0.80	0.13	ug/L		01/13/23 19:05	01/18/23 01:53	1
Cadmium	0.39	U	2.0	0.39	ug/L		01/13/23 19:05	01/18/23 01:53	1
Calcium	74300		500	53.6	ug/L		01/13/23 19:05	01/18/23 01:53	1
Chromium	3.4	J	4.0	2.5	ug/L		01/13/23 19:05	01/18/23 01:53	1
Cobalt	7.4		4.0	0.71	ug/L		01/13/23 19:05	01/18/23 01:53	1
Copper	5.1		4.0	2.5	ug/L		01/13/23 19:05	01/18/23 01:53	1
Iron	3500		120	58.2	ug/L		01/13/23 19:05	01/18/23 01:53	1
Lead	2.7		1.2	0.84	ug/L		01/13/23 19:05	01/18/23 01:53	1
Magnesium	52700		200	46.9	ug/L		01/13/23 19:05	01/18/23 01:53	1
Manganese	1270		8.0	1.5	ug/L		01/13/23 19:05	01/18/23 01:53	1
Nickel	9.3		4.0	0.91	ug/L		01/13/23 19:05	01/18/23 01:53	1
Potassium	8730		200	112	ug/L		01/13/23 19:05	01/18/23 01:53	1
Selenium	0.59	U	2.5	0.59	ug/L		01/13/23 19:05	01/18/23 01:53	1
Silver	0.29	U	2.0	0.29	ug/L		01/13/23 19:05	01/18/23 01:53	1
Sodium	84800		500	163	ug/L		01/13/23 19:05	01/18/23 12:07	1
Thallium	0.21	U	0.80	0.21	ug/L		01/13/23 19:05	01/18/23 01:53	1
Vanadium	5.3		4.0	0.68	ug/L		01/13/23 19:05	01/18/23 01:53	1
Zinc	20.5		16.0	6.5	ug/L		01/13/23 19:05	01/18/23 01:53	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese, Dissolved	1170		8.0	1.5	ug/L		01/12/23 20:17	01/12/23 21:37	1

Eurofins Edison

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: GW-11222397-011123-ZB-12

Lab Sample ID: 460-272828-7

Date Collected: 01/11/23 14:05

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.091	U	0.20	0.091	ug/L		01/17/23 14:32	01/17/23 15:08	1

Client Sample ID: GW-11222397-011123-MA-13

Lab Sample ID: 460-272828-8

Date Collected: 01/11/23 14:00

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.20	U	1.0	0.20	ug/L			01/16/23 14:57	1
Trichloroethene	3.8		1.0	0.31	ug/L			01/16/23 14:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 128		01/16/23 14:57	1
4-Bromofluorobenzene	103		76 - 120		01/16/23 14:57	1
Dibromofluoromethane (Surr)	104		77 - 124		01/16/23 14:57	1
Toluene-d8 (Surr)	100		80 - 120		01/16/23 14:57	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	94.4		40.0	19.5	ug/L		01/18/23 09:37	01/19/23 18:28	1
Antimony	0.76	U	2.0	0.76	ug/L		01/18/23 09:37	01/19/23 18:28	1
Arsenic	0.89	U	2.0	0.89	ug/L		01/18/23 09:37	01/19/23 18:28	1
Barium	271		4.0	0.91	ug/L		01/18/23 09:37	01/19/23 18:28	1
Beryllium	0.13	U	0.80	0.13	ug/L		01/18/23 09:37	01/19/23 18:28	1
Cadmium	0.39	U	2.0	0.39	ug/L		01/18/23 09:37	01/19/23 18:28	1
Calcium	35200		500	53.6	ug/L		01/18/23 09:37	01/19/23 18:28	1
Chromium	2.5	U	4.0	2.5	ug/L		01/18/23 09:37	01/19/23 18:28	1
Cobalt	6.0		4.0	0.71	ug/L		01/18/23 09:37	01/19/23 18:28	1
Copper	2.5	U	4.0	2.5	ug/L		01/18/23 09:37	01/19/23 18:28	1
Iron	90.3	J	120	58.2	ug/L		01/18/23 09:37	01/19/23 18:28	1
Lead	0.84	U	1.2	0.84	ug/L		01/18/23 09:37	01/19/23 18:28	1
Magnesium	37600		200	46.9	ug/L		01/18/23 09:37	01/19/23 18:28	1
Manganese	6780		8.0	1.5	ug/L		01/18/23 09:37	01/19/23 18:28	1
Nickel	5.1		4.0	0.91	ug/L		01/18/23 09:37	01/19/23 18:28	1
Potassium	3370		200	112	ug/L		01/18/23 09:37	01/19/23 18:28	1
Selenium	0.59	U	2.5	0.59	ug/L		01/18/23 09:37	01/19/23 18:28	1
Silver	0.29	U	2.0	0.29	ug/L		01/18/23 09:37	01/19/23 18:28	1
Sodium	106000		500	163	ug/L		01/18/23 09:37	01/19/23 18:28	1
Thallium	0.21	U	0.80	0.21	ug/L		01/18/23 09:37	01/19/23 18:28	1
Vanadium	0.76	J	4.0	0.68	ug/L		01/18/23 09:37	01/19/23 18:28	1
Zinc	10	J	16.0	6.5	ug/L		01/18/23 09:37	01/19/23 18:28	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese, Dissolved	7910		8.0	1.5	ug/L		01/20/23 21:58	01/23/23 20:15	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.091	U	0.20	0.091	ug/L		01/17/23 14:32	01/17/23 15:57	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: GW-11222397-011123-MA-14

Lab Sample ID: 460-272828-9

Date Collected: 01/11/23 14:15

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1290		40.0	19.5	ug/L		01/24/23 13:23	01/25/23 21:17	1
Antimony	0.76	U	2.0	0.76	ug/L		01/24/23 13:23	01/25/23 21:17	1
Arsenic	0.89	U	2.0	0.89	ug/L		01/24/23 13:23	01/25/23 21:17	1
Barium	290		4.0	0.91	ug/L		01/24/23 13:23	01/25/23 21:17	1
Beryllium	0.13	U	0.80	0.13	ug/L		01/24/23 13:23	01/25/23 21:17	1
Cadmium	0.39	U	2.0	0.39	ug/L		01/24/23 13:23	01/25/23 21:17	1
Calcium	38100		500	53.6	ug/L		01/24/23 13:23	01/25/23 21:17	1
Chromium	8.7		4.0	2.5	ug/L		01/24/23 13:23	01/25/23 21:17	1
Cobalt	7.3		4.0	0.71	ug/L		01/24/23 13:23	01/25/23 21:17	1
Copper	3.6	J	4.0	2.5	ug/L		01/24/23 13:23	01/25/23 21:17	1
Iron	1950		120	58.2	ug/L		01/24/23 13:23	01/25/23 21:17	1
Lead	8.7		1.2	0.84	ug/L		01/24/23 13:23	01/25/23 21:17	1
Magnesium	41200		200	46.9	ug/L		01/24/23 13:23	01/25/23 21:17	1
Manganese	7170		8.0	1.5	ug/L		01/24/23 13:23	01/25/23 21:17	1
Nickel	5.5		4.0	0.91	ug/L		01/24/23 13:23	01/25/23 21:17	1
Potassium	3520		200	112	ug/L		01/24/23 13:23	01/25/23 21:17	1
Selenium	0.59	U	2.5	0.59	ug/L		01/24/23 13:23	01/25/23 21:17	1
Silver	0.29	U	2.0	0.29	ug/L		01/24/23 13:23	01/25/23 21:17	1
Sodium	105000		500	163	ug/L		01/24/23 13:23	01/25/23 21:17	1
Thallium	0.21	U	0.80	0.21	ug/L		01/24/23 13:23	01/27/23 18:49	1
Vanadium	5.6		4.0	0.68	ug/L		01/24/23 13:23	01/25/23 21:17	1
Zinc	17.7		16.0	6.5	ug/L		01/24/23 13:23	01/25/23 21:17	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese, Dissolved	7890		8.0	1.5	ug/L		01/20/23 21:58	01/23/23 20:18	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.091	U	0.20	0.091	ug/L		01/17/23 14:32	01/17/23 15:58	1

Client Sample ID: TRIP BLANK

Lab Sample ID: 460-272828-10

Date Collected: 01/11/23 14:15

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.24	U	1.0	0.24	ug/L			01/18/23 00:12	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			01/18/23 00:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	1.0	0.31	ug/L			01/18/23 00:12	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			01/18/23 00:12	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			01/18/23 00:12	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			01/18/23 00:12	1
1,2,4-Trichlorobenzene	0.37	U	1.0	0.37	ug/L			01/18/23 00:12	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			01/18/23 00:12	1
1,2-Dibromo-3-Chloropropane	0.38	U	1.0	0.38	ug/L			01/18/23 00:12	1
1,2-Dibromoethane	0.50	U	1.0	0.50	ug/L			01/18/23 00:12	1
1,2-Dichlorobenzene	0.21	U	1.0	0.21	ug/L			01/18/23 00:12	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			01/18/23 00:12	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			01/18/23 00:12	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 1122397- RACER

Job ID: 460-272828-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 460-272828-10

Date Collected: 01/11/23 14:15

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	0.34	U	1.0	0.34	ug/L			01/18/23 00:12	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			01/18/23 00:12	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			01/18/23 00:12	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			01/18/23 00:12	1
4-Methyl-2-pentanone (MIBK)	1.3	U	5.0	1.3	ug/L			01/18/23 00:12	1
Acetone	4.4	U	5.0	4.4	ug/L			01/18/23 00:12	1
Benzene	0.20	U	1.0	0.20	ug/L			01/18/23 00:12	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			01/18/23 00:12	1
Bromoform	0.54	U	1.0	0.54	ug/L			01/18/23 00:12	1
Bromomethane	0.55	U	1.0	0.55	ug/L			01/18/23 00:12	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			01/18/23 00:12	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			01/18/23 00:12	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			01/18/23 00:12	1
Chloroethane	0.32	U	1.0	0.32	ug/L			01/18/23 00:12	1
Chloroform	0.33	U	1.0	0.33	ug/L			01/18/23 00:12	1
Chloromethane	0.40	U	1.0	0.40	ug/L			01/18/23 00:12	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			01/18/23 00:12	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/18/23 00:12	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			01/18/23 00:12	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			01/18/23 00:12	1
Dichlorodifluoromethane	0.31	U	1.0	0.31	ug/L			01/18/23 00:12	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			01/18/23 00:12	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			01/18/23 00:12	1
Methyl acetate	0.79	U	5.0	0.79	ug/L			01/18/23 00:12	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			01/18/23 00:12	1
Methylcyclohexane	0.71	U	1.0	0.71	ug/L			01/18/23 00:12	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			01/18/23 00:12	1
Styrene	0.42	U	1.0	0.42	ug/L			01/18/23 00:12	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			01/18/23 00:12	1
Toluene	0.38	U	1.0	0.38	ug/L			01/18/23 00:12	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			01/18/23 00:12	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/18/23 00:12	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			01/18/23 00:12	1
Trichlorofluoromethane	0.32	U	1.0	0.32	ug/L			01/18/23 00:12	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			01/18/23 00:12	1
Xylenes, Total	0.65	U	2.0	0.65	ug/L			01/18/23 00:12	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					01/18/23 00:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		70 - 128		01/18/23 00:12	1
4-Bromofluorobenzene	87		76 - 120		01/18/23 00:12	1
Dibromofluoromethane (Surr)	86		77 - 124		01/18/23 00:12	1
Toluene-d8 (Surr)	94		80 - 120		01/18/23 00:12	1

Eurofins Edison

Client Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 460-272828-11

Date Collected: 01/11/23 14:15

Matrix: Water

Date Received: 01/11/23 20:00

Method: SW846 8260B - Volatile Organics (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.20	U	1.0	0.20	ug/L			01/16/23 11:48	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			01/16/23 11:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 128					01/16/23 11:48	1
4-Bromofluorobenzene	101		76 - 120					01/16/23 11:48	1
Dibromofluoromethane (Surr)	101		77 - 124					01/16/23 11:48	1
Toluene-d8 (Surr)	101		80 - 120					01/16/23 11:48	1

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 8260B - Volatile Organics (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (70-128)	BFB (76-120)	DBFM (77-124)	TOL (80-120)
460-272828-1	RB-11222397-011123-ZB-06	102	106	103	104
460-272828-2	GW-11222397-011123-ZB-07	95	101	101	101
460-272828-2 MS	GW-11222397-011123-ZB-07	98	104	99	101
460-272828-2 MSD	GW-11222397-011123-ZB-07	91	97	94	98
460-272828-3	GW-11222397-011123-MA-08	89	97	96	100
460-272828-4	GW-11222397-011123-MA-09	102	105	107	104
460-272828-5	GW-11222397-011123-ZB-10	99	100	101	99
460-272828-8	GW-11222397-011123-MA-13	99	103	104	100
460-272828-10	TRIP BLANK	87	87	86	94
460-272828-11	TRIP BLANK	102	101	101	101
LCS 460-888265/4	Lab Control Sample	98	101	99	100
LCS 460-888607/4	Lab Control Sample	87	87	85	93
LCSD 460-888607/5	Lab Control Sample Dup	86	91	86	97
MB 460-888265/8	Method Blank	102	98	99	97
MB 460-888607/9	Method Blank	93	92	91	95

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 8260B - Volatile Organics (GC/MS)

Lab Sample ID: MB 460-888265/8

Matrix: Water

Analysis Batch: 888265

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	0.24	U	1.0	0.24	ug/L			01/16/23 11:06	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			01/16/23 11:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	1.0	0.31	ug/L			01/16/23 11:06	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			01/16/23 11:06	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			01/16/23 11:06	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			01/16/23 11:06	1
1,2,4-Trichlorobenzene	0.37	U	1.0	0.37	ug/L			01/16/23 11:06	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			01/16/23 11:06	1
1,2-Dibromo-3-Chloropropane	0.38	U	1.0	0.38	ug/L			01/16/23 11:06	1
1,2-Dibromoethane	0.50	U	1.0	0.50	ug/L			01/16/23 11:06	1
1,2-Dichlorobenzene	0.21	U	1.0	0.21	ug/L			01/16/23 11:06	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			01/16/23 11:06	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			01/16/23 11:06	1
1,3-Dichlorobenzene	0.34	U	1.0	0.34	ug/L			01/16/23 11:06	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			01/16/23 11:06	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			01/16/23 11:06	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			01/16/23 11:06	1
4-Methyl-2-pentanone (MIBK)	1.3	U	5.0	1.3	ug/L			01/16/23 11:06	1
Acetone	4.4	U	5.0	4.4	ug/L			01/16/23 11:06	1
Benzene	0.20	U	1.0	0.20	ug/L			01/16/23 11:06	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			01/16/23 11:06	1
Bromoform	0.54	U	1.0	0.54	ug/L			01/16/23 11:06	1
Bromomethane	0.55	U	1.0	0.55	ug/L			01/16/23 11:06	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			01/16/23 11:06	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			01/16/23 11:06	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			01/16/23 11:06	1
Chloroethane	0.32	U	1.0	0.32	ug/L			01/16/23 11:06	1
Chloroform	0.33	U	1.0	0.33	ug/L			01/16/23 11:06	1
Chloromethane	0.40	U	1.0	0.40	ug/L			01/16/23 11:06	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			01/16/23 11:06	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 11:06	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			01/16/23 11:06	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			01/16/23 11:06	1
Dichlorodifluoromethane	0.31	U	1.0	0.31	ug/L			01/16/23 11:06	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			01/16/23 11:06	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			01/16/23 11:06	1
Methyl acetate	0.79	U	5.0	0.79	ug/L			01/16/23 11:06	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			01/16/23 11:06	1
Methylcyclohexane	0.71	U	1.0	0.71	ug/L			01/16/23 11:06	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			01/16/23 11:06	1
Styrene	0.42	U	1.0	0.42	ug/L			01/16/23 11:06	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			01/16/23 11:06	1
Toluene	0.38	U	1.0	0.38	ug/L			01/16/23 11:06	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			01/16/23 11:06	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/16/23 11:06	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			01/16/23 11:06	1
Trichlorofluoromethane	0.32	U	1.0	0.32	ug/L			01/16/23 11:06	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			01/16/23 11:06	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: MB 460-888265/8

Matrix: Water

Analysis Batch: 888265

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	0.65	U	2.0	0.65	ug/L			01/16/23 11:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 128		01/16/23 11:06	1
4-Bromofluorobenzene	98		76 - 120		01/16/23 11:06	1
Dibromofluoromethane (Surr)	99		77 - 124		01/16/23 11:06	1
Toluene-d8 (Surr)	97		80 - 120		01/16/23 11:06	1

Lab Sample ID: LCS 460-888265/4

Matrix: Water

Analysis Batch: 888265

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	20.0	21.2		ug/L		106	68 - 128
1,1,2,2-Tetrachloroethane	20.0	21.2		ug/L		106	63 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	21.7		ug/L		109	51 - 142
1,1,2-Trichloroethane	20.0	20.5		ug/L		102	74 - 125
1,1-Dichloroethane	20.0	20.5		ug/L		103	73 - 130
1,1-Dichloroethene	20.0	21.6		ug/L		108	68 - 133
1,2,4-Trichlorobenzene	20.0	21.3		ug/L		107	67 - 132
1,2,4-Trimethylbenzene	20.0	21.4		ug/L		107	75 - 125
1,2-Dibromo-3-Chloropropane	20.0	22.0		ug/L		110	58 - 132
1,2-Dibromoethane	20.0	20.7		ug/L		103	79 - 126
1,2-Dichlorobenzene	20.0	20.7		ug/L		103	80 - 120
1,2-Dichloroethane	20.0	20.8		ug/L		104	66 - 129
1,2-Dichloropropane	20.0	21.2		ug/L		106	68 - 128
1,3-Dichlorobenzene	20.0	20.9		ug/L		104	80 - 120
1,4-Dichlorobenzene	20.0	20.7		ug/L		104	80 - 120
2-Butanone (MEK)	100	100		ug/L		100	61 - 128
2-Hexanone	100	108		ug/L		108	61 - 134
4-Methyl-2-pentanone (MIBK)	100	103		ug/L		103	69 - 128
Acetone	100	110		ug/L		110	61 - 134
Benzene	20.0	20.7		ug/L		104	71 - 126
Bromodichloromethane	20.0	20.4		ug/L		102	76 - 121
Bromoform	20.0	20.3		ug/L		102	48 - 144
Bromomethane	20.0	21.6		ug/L		108	32 - 150
Carbon disulfide	20.0	21.0		ug/L		105	64 - 138
Carbon tetrachloride	20.0	20.9		ug/L		104	61 - 131
Chlorobenzene	20.0	20.6		ug/L		103	80 - 120
Chloroethane	20.0	17.5		ug/L		87	42 - 150
Chloroform	20.0	20.1		ug/L		100	78 - 125
Chloromethane	20.0	19.7		ug/L		98	43 - 150
cis-1,2-Dichloroethene	20.0	21.2		ug/L		106	78 - 121
cis-1,3-Dichloropropene	20.0	21.5		ug/L		108	74 - 125
Cyclohexane	20.0	21.7		ug/L		109	60 - 133
Dibromochloromethane	20.0	20.3		ug/L		102	62 - 130
Dichlorodifluoromethane	20.0	20.2		ug/L		101	33 - 150
Ethylbenzene	20.0	21.2		ug/L		106	78 - 120

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: LCS 460-888265/4

Matrix: Water

Analysis Batch: 888265

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Isopropylbenzene	20.0	21.1		ug/L		106	79 - 125
Methyl acetate	40.0	42.9		ug/L		107	55 - 146
Methyl tert-butyl ether	20.0	20.9		ug/L		104	72 - 131
Methylcyclohexane	20.0	22.7		ug/L		114	54 - 139
Methylene Chloride	20.0	20.0		ug/L		100	74 - 127
Styrene	20.0	21.1		ug/L		106	75 - 127
Tetrachloroethene	20.0	21.1		ug/L		105	70 - 127
Toluene	20.0	20.5		ug/L		103	78 - 120
trans-1,2-Dichloroethene	20.0	21.0		ug/L		105	74 - 126
trans-1,3-Dichloropropene	20.0	20.6		ug/L		103	66 - 127
Trichloroethene	20.0	20.8		ug/L		104	71 - 121
Trichlorofluoromethane	20.0	19.3		ug/L		97	50 - 150
Vinyl chloride	20.0	19.7		ug/L		98	55 - 144
Xylenes, Total	40.0	42.6		ug/L		106	78 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 128
4-Bromofluorobenzene	101		76 - 120
Dibromofluoromethane (Surr)	99		77 - 124
Toluene-d8 (Surr)	100		80 - 120

Lab Sample ID: 460-272828-2 MS

Matrix: Water

Analysis Batch: 888265

Client Sample ID: GW-11222397-011123-ZB-07

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.24	U	20.0	21.8		ug/L		109	68 - 128
1,1,2,2-Tetrachloroethane	0.37	U	20.0	19.6		ug/L		98	63 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	20.0	21.8		ug/L		109	51 - 142
1,1,2-Trichloroethane	0.20	U	20.0	21.1		ug/L		106	74 - 125
1,1-Dichloroethane	0.26	U	20.0	21.2		ug/L		106	73 - 130
1,1-Dichloroethene	0.26	U	20.0	21.9		ug/L		110	68 - 133
1,2,4-Trichlorobenzene	0.37	U	20.0	20.3		ug/L		102	67 - 132
1,2,4-Trimethylbenzene	0.37	U	20.0	21.0		ug/L		105	75 - 125
1,2-Dibromo-3-Chloropropane	0.38	U	20.0	19.3		ug/L		97	58 - 132
1,2-Dibromoethane	0.50	U	20.0	21.3		ug/L		106	79 - 126
1,2-Dichlorobenzene	0.21	U	20.0	20.6		ug/L		103	80 - 120
1,2-Dichloroethane	0.43	U	20.0	20.7		ug/L		104	66 - 129
1,2-Dichloropropane	0.35	U	20.0	21.4		ug/L		107	68 - 128
1,3-Dichlorobenzene	0.34	U	20.0	20.9		ug/L		104	80 - 120
1,4-Dichlorobenzene	0.33	U	20.0	20.6		ug/L		103	80 - 120
2-Butanone (MEK)	1.9	U	100	110		ug/L		110	61 - 128
2-Hexanone	1.1	U	100	112		ug/L		112	61 - 134
4-Methyl-2-pentanone (MIBK)	1.3	U	100	112		ug/L		112	69 - 128
Acetone	4.4	U	100	109		ug/L		109	61 - 134
Benzene	0.20	U	20.0	21.8		ug/L		109	71 - 126
Bromodichloromethane	0.34	U	20.0	20.3		ug/L		102	76 - 121
Bromoform	0.54	U	20.0	19.4		ug/L		97	48 - 144

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: 460-272828-2 MS

Matrix: Water

Analysis Batch: 888265

Client Sample ID: GW-11222397-011123-ZB-07

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	0.55	U	20.0	20.7		ug/L		104	32 - 150
Carbon disulfide	0.82	U	20.0	21.4		ug/L		107	64 - 138
Carbon tetrachloride	0.21	U	20.0	21.3		ug/L		107	61 - 131
Chlorobenzene	0.38	U	20.0	21.2		ug/L		106	80 - 120
Chloroethane	0.32	U	20.0	18.2		ug/L		91	42 - 150
Chloroform	0.33	U	20.0	20.7		ug/L		103	78 - 125
Chloromethane	0.40	U	20.0	21.2		ug/L		106	43 - 150
cis-1,2-Dichloroethene	0.22	U	20.0	20.9		ug/L		104	78 - 121
cis-1,3-Dichloropropene	0.22	U	20.0	19.9		ug/L		99	74 - 125
Cyclohexane	0.32	U	20.0	22.0		ug/L		110	60 - 133
Dibromochloromethane	0.28	U	20.0	20.2		ug/L		101	62 - 130
Dichlorodifluoromethane	0.31	U	20.0	21.2		ug/L		106	33 - 150
Ethylbenzene	0.30	U	20.0	21.6		ug/L		108	78 - 120
Isopropylbenzene	0.34	U	20.0	21.8		ug/L		109	79 - 125
Methyl acetate	0.79	U	40.0	33.7		ug/L		84	55 - 146
Methyl tert-butyl ether	0.22	U	20.0	21.0		ug/L		105	72 - 131
Methylcyclohexane	0.71	U	20.0	21.2		ug/L		106	54 - 139
Methylene Chloride	0.32	U	20.0	20.9		ug/L		105	74 - 127
Styrene	0.42	U	20.0	21.1		ug/L		106	75 - 127
Tetrachloroethene	0.42	J	20.0	22.3		ug/L		109	70 - 127
Toluene	0.38	U	20.0	21.5		ug/L		108	78 - 120
trans-1,2-Dichloroethene	0.24	U	20.0	21.9		ug/L		109	74 - 126
trans-1,3-Dichloropropene	0.22	U	20.0	19.1		ug/L		95	66 - 127
Trichloroethene	0.31	U	20.0	21.5		ug/L		107	71 - 121
Trichlorofluoromethane	2.1		20.0	23.0		ug/L		105	50 - 150
Vinyl chloride	0.17	U	20.0	21.2		ug/L		106	55 - 144
Xylenes, Total	0.65	U	40.0	43.5		ug/L		109	78 - 120
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	98		70 - 128						
4-Bromofluorobenzene	104		76 - 120						
Dibromofluoromethane (Surr)	99		77 - 124						
Toluene-d8 (Surr)	101		80 - 120						

Lab Sample ID: 460-272828-2 MSD

Matrix: Water

Analysis Batch: 888265

Client Sample ID: GW-11222397-011123-ZB-07

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	0.24	U	20.0	22.3		ug/L		111	68 - 128	2	30
1,1,2,2-Tetrachloroethane	0.37	U	20.0	20.5		ug/L		103	63 - 139	5	30
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	20.0	21.2		ug/L		106	51 - 142	2	30
1,1,2-Trichloroethane	0.20	U	20.0	20.9		ug/L		105	74 - 125	1	30
1,1-Dichloroethane	0.26	U	20.0	21.5		ug/L		108	73 - 130	1	30
1,1-Dichloroethene	0.26	U	20.0	23.1		ug/L		115	68 - 133	5	30
1,2,4-Trichlorobenzene	0.37	U	20.0	21.1		ug/L		105	67 - 132	3	30
1,2,4-Trimethylbenzene	0.37	U	20.0	21.8		ug/L		109	75 - 125	3	30
1,2-Dibromo-3-Chloropropane	0.38	U	20.0	19.7		ug/L		99	58 - 132	2	30

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: 460-272828-2 MSD

Matrix: Water

Analysis Batch: 888265

Client Sample ID: GW-11222397-011123-ZB-07

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dibromoethane	0.50	U	20.0	21.4		ug/L		107	79 - 126	1	30
1,2-Dichlorobenzene	0.21	U	20.0	21.0		ug/L		105	80 - 120	2	30
1,2-Dichloroethane	0.43	U	20.0	20.7		ug/L		103	66 - 129	0	30
1,2-Dichloropropane	0.35	U	20.0	21.3		ug/L		107	68 - 128	0	30
1,3-Dichlorobenzene	0.34	U	20.0	21.5		ug/L		108	80 - 120	3	30
1,4-Dichlorobenzene	0.33	U	20.0	21.1		ug/L		105	80 - 120	2	30
2-Butanone (MEK)	1.9	U	100	109		ug/L		109	61 - 128	1	30
2-Hexanone	1.1	U	100	115		ug/L		115	61 - 134	3	30
4-Methyl-2-pentanone (MIBK)	1.3	U	100	115		ug/L		115	69 - 128	2	30
Acetone	4.4	U	100	109		ug/L		109	61 - 134	0	30
Benzene	0.20	U	20.0	22.3		ug/L		112	71 - 126	2	30
Bromodichloromethane	0.34	U	20.0	21.6		ug/L		108	76 - 121	6	30
Bromoform	0.54	U	20.0	20.5		ug/L		103	48 - 144	6	30
Bromomethane	0.55	U	20.0	19.8		ug/L		99	32 - 150	5	30
Carbon disulfide	0.82	U	20.0	21.6		ug/L		108	64 - 138	1	30
Carbon tetrachloride	0.21	U	20.0	21.6		ug/L		108	61 - 131	1	30
Chlorobenzene	0.38	U	20.0	21.7		ug/L		108	80 - 120	2	30
Chloroethane	0.32	U	20.0	18.3		ug/L		92	42 - 150	0	30
Chloroform	0.33	U	20.0	21.0		ug/L		105	78 - 125	2	30
Chloromethane	0.40	U	20.0	20.1		ug/L		100	43 - 150	5	30
cis-1,2-Dichloroethene	0.22	U	20.0	20.9		ug/L		104	78 - 121	0	30
cis-1,3-Dichloropropene	0.22	U	20.0	20.7		ug/L		104	74 - 125	4	30
Cyclohexane	0.32	U	20.0	22.2		ug/L		111	60 - 133	1	30
Dibromochloromethane	0.28	U	20.0	20.6		ug/L		103	62 - 130	2	30
Dichlorodifluoromethane	0.31	U	20.0	21.1		ug/L		106	33 - 150	0	30
Ethylbenzene	0.30	U	20.0	22.3		ug/L		112	78 - 120	3	30
Isopropylbenzene	0.34	U	20.0	22.1		ug/L		111	79 - 125	1	30
Methyl acetate	0.79	U	40.0	35.0		ug/L		87	55 - 146	4	30
Methyl tert-butyl ether	0.22	U	20.0	21.1		ug/L		105	72 - 131	0	30
Methylcyclohexane	0.71	U	20.0	21.6		ug/L		108	54 - 139	2	30
Methylene Chloride	0.32	U	20.0	20.8		ug/L		104	74 - 127	1	30
Styrene	0.42	U	20.0	22.0		ug/L		110	75 - 127	4	30
Tetrachloroethene	0.42	J	20.0	22.5		ug/L		110	70 - 127	1	30
Toluene	0.38	U	20.0	21.9		ug/L		109	78 - 120	2	30
trans-1,2-Dichloroethene	0.24	U	20.0	21.9		ug/L		109	74 - 126	0	30
trans-1,3-Dichloropropene	0.22	U	20.0	19.9		ug/L		100	66 - 127	4	30
Trichloroethene	0.31	U	20.0	21.1		ug/L		105	71 - 121	2	30
Trichlorofluoromethane	2.1		20.0	21.9		ug/L		99	50 - 150	5	30
Vinyl chloride	0.17	U	20.0	20.2		ug/L		101	55 - 144	5	30
Xylenes, Total	0.65	U	40.0	44.2		ug/L		110	78 - 120	2	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		70 - 128
4-Bromofluorobenzene	97		76 - 120
Dibromofluoromethane (Surr)	94		77 - 124
Toluene-d8 (Surr)	98		80 - 120

Eurofins Edison

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: MB 460-888607/9

Matrix: Water

Analysis Batch: 888607

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	0.24	U	1.0	0.24	ug/L			01/17/23 23:50	1
1,1,2,2-Tetrachloroethane	0.37	U	1.0	0.37	ug/L			01/17/23 23:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.31	U	1.0	0.31	ug/L			01/17/23 23:50	1
1,1,2-Trichloroethane	0.20	U	1.0	0.20	ug/L			01/17/23 23:50	1
1,1-Dichloroethane	0.26	U	1.0	0.26	ug/L			01/17/23 23:50	1
1,1-Dichloroethene	0.26	U	1.0	0.26	ug/L			01/17/23 23:50	1
1,2,4-Trichlorobenzene	0.37	U	1.0	0.37	ug/L			01/17/23 23:50	1
1,2,4-Trimethylbenzene	0.37	U	1.0	0.37	ug/L			01/17/23 23:50	1
1,2-Dibromo-3-Chloropropane	0.38	U	1.0	0.38	ug/L			01/17/23 23:50	1
1,2-Dibromoethane	0.50	U	1.0	0.50	ug/L			01/17/23 23:50	1
1,2-Dichlorobenzene	0.21	U	1.0	0.21	ug/L			01/17/23 23:50	1
1,2-Dichloroethane	0.43	U	1.0	0.43	ug/L			01/17/23 23:50	1
1,2-Dichloropropane	0.35	U	1.0	0.35	ug/L			01/17/23 23:50	1
1,3-Dichlorobenzene	0.34	U	1.0	0.34	ug/L			01/17/23 23:50	1
1,4-Dichlorobenzene	0.33	U	1.0	0.33	ug/L			01/17/23 23:50	1
2-Butanone (MEK)	1.9	U	5.0	1.9	ug/L			01/17/23 23:50	1
2-Hexanone	1.1	U	5.0	1.1	ug/L			01/17/23 23:50	1
4-Methyl-2-pentanone (MIBK)	1.3	U	5.0	1.3	ug/L			01/17/23 23:50	1
Acetone	4.4	U	5.0	4.4	ug/L			01/17/23 23:50	1
Benzene	0.20	U	1.0	0.20	ug/L			01/17/23 23:50	1
Bromodichloromethane	0.34	U	1.0	0.34	ug/L			01/17/23 23:50	1
Bromoform	0.54	U	1.0	0.54	ug/L			01/17/23 23:50	1
Bromomethane	0.55	U	1.0	0.55	ug/L			01/17/23 23:50	1
Carbon disulfide	0.82	U	1.0	0.82	ug/L			01/17/23 23:50	1
Carbon tetrachloride	0.21	U	1.0	0.21	ug/L			01/17/23 23:50	1
Chlorobenzene	0.38	U	1.0	0.38	ug/L			01/17/23 23:50	1
Chloroethane	0.32	U	1.0	0.32	ug/L			01/17/23 23:50	1
Chloroform	0.33	U	1.0	0.33	ug/L			01/17/23 23:50	1
Chloromethane	0.40	U	1.0	0.40	ug/L			01/17/23 23:50	1
cis-1,2-Dichloroethene	0.22	U	1.0	0.22	ug/L			01/17/23 23:50	1
cis-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/17/23 23:50	1
Cyclohexane	0.32	U	1.0	0.32	ug/L			01/17/23 23:50	1
Dibromochloromethane	0.28	U	1.0	0.28	ug/L			01/17/23 23:50	1
Dichlorodifluoromethane	0.31	U	1.0	0.31	ug/L			01/17/23 23:50	1
Ethylbenzene	0.30	U	1.0	0.30	ug/L			01/17/23 23:50	1
Isopropylbenzene	0.34	U	1.0	0.34	ug/L			01/17/23 23:50	1
Methyl acetate	0.79	U	5.0	0.79	ug/L			01/17/23 23:50	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			01/17/23 23:50	1
Methylcyclohexane	0.71	U	1.0	0.71	ug/L			01/17/23 23:50	1
Methylene Chloride	0.32	U	1.0	0.32	ug/L			01/17/23 23:50	1
Styrene	0.42	U	1.0	0.42	ug/L			01/17/23 23:50	1
Tetrachloroethene	0.25	U	1.0	0.25	ug/L			01/17/23 23:50	1
Toluene	0.38	U	1.0	0.38	ug/L			01/17/23 23:50	1
trans-1,2-Dichloroethene	0.24	U	1.0	0.24	ug/L			01/17/23 23:50	1
trans-1,3-Dichloropropene	0.22	U	1.0	0.22	ug/L			01/17/23 23:50	1
Trichloroethene	0.31	U	1.0	0.31	ug/L			01/17/23 23:50	1
Trichlorofluoromethane	0.32	U	1.0	0.32	ug/L			01/17/23 23:50	1
Vinyl chloride	0.17	U	1.0	0.17	ug/L			01/17/23 23:50	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: MB 460-888607/9

Matrix: Water

Analysis Batch: 888607

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	0.65	U	2.0	0.65	ug/L			01/17/23 23:50	1
Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					01/17/23 23:50	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		70 - 128					01/17/23 23:50	1
4-Bromofluorobenzene	92		76 - 120					01/17/23 23:50	1
Dibromofluoromethane (Surr)	91		77 - 124					01/17/23 23:50	1
Toluene-d8 (Surr)	95		80 - 120					01/17/23 23:50	1

Lab Sample ID: LCS 460-888607/4

Matrix: Water

Analysis Batch: 888607

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	20.0	18.1		ug/L		90	68 - 128
1,1,2,2-Tetrachloroethane	20.0	20.1		ug/L		100	63 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	17.6		ug/L		88	51 - 142
1,1,2-Trichloroethane	20.0	19.7		ug/L		99	74 - 125
1,1-Dichloroethane	20.0	18.2		ug/L		91	73 - 130
1,1-Dichloroethene	20.0	17.9		ug/L		90	68 - 133
1,2,4-Trichlorobenzene	20.0	21.8		ug/L		109	67 - 132
1,2,4-Trimethylbenzene	20.0	19.4		ug/L		97	75 - 125
1,2-Dibromo-3-Chloropropane	20.0	21.0		ug/L		105	58 - 132
1,2-Dibromoethane	20.0	20.0		ug/L		100	79 - 126
1,2-Dichlorobenzene	20.0	19.0		ug/L		95	80 - 120
1,2-Dichloroethane	20.0	16.8		ug/L		84	66 - 129
1,2-Dichloropropane	20.0	18.7		ug/L		94	68 - 128
1,3-Dichlorobenzene	20.0	19.4		ug/L		97	80 - 120
1,4-Dichlorobenzene	20.0	19.6		ug/L		98	80 - 120
2-Butanone (MEK)	100	88.4		ug/L		88	61 - 128
2-Hexanone	100	82.5		ug/L		82	61 - 134
4-Methyl-2-pentanone (MIBK)	100	83.4		ug/L		83	69 - 128
Acetone	100	90.8		ug/L		91	61 - 134
Benzene	20.0	19.7		ug/L		99	71 - 126
Bromodichloromethane	20.0	17.8		ug/L		89	76 - 121
Bromoform	20.0	19.5		ug/L		97	48 - 144
Bromomethane	20.0	24.0		ug/L		120	32 - 150
Carbon disulfide	20.0	18.2		ug/L		91	64 - 138
Carbon tetrachloride	20.0	17.7		ug/L		88	61 - 131
Chlorobenzene	20.0	18.1		ug/L		91	80 - 120
Chloroethane	20.0	17.9		ug/L		90	42 - 150
Chloroform	20.0	17.6		ug/L		88	78 - 125
Chloromethane	20.0	17.7		ug/L		89	43 - 150
cis-1,2-Dichloroethene	20.0	17.4		ug/L		87	78 - 121
cis-1,3-Dichloropropene	20.0	19.8		ug/L		99	74 - 125

Eurofins Edison

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: LCS 460-888607/4

Matrix: Water

Analysis Batch: 888607

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyclohexane	20.0	17.9		ug/L		89	60 - 133
Dibromochloromethane	20.0	20.0		ug/L		100	62 - 130
Dichlorodifluoromethane	20.0	17.4		ug/L		87	33 - 150
Ethylbenzene	20.0	18.9		ug/L		95	78 - 120
Isopropylbenzene	20.0	19.0		ug/L		95	79 - 125
Methyl acetate	40.0	38.5		ug/L		96	55 - 146
Methyl tert-butyl ether	20.0	19.0		ug/L		95	72 - 131
Methylcyclohexane	20.0	19.1		ug/L		95	54 - 139
Methylene Chloride	20.0	17.9		ug/L		90	74 - 127
Styrene	20.0	18.2		ug/L		91	75 - 127
Tetrachloroethene	20.0	19.5		ug/L		98	70 - 127
Toluene	20.0	19.2		ug/L		96	78 - 120
trans-1,2-Dichloroethene	20.0	17.5		ug/L		87	74 - 126
trans-1,3-Dichloropropene	20.0	19.5		ug/L		98	66 - 127
Trichloroethene	20.0	18.7		ug/L		94	71 - 121
Trichlorofluoromethane	20.0	16.2		ug/L		81	50 - 150
Vinyl chloride	20.0	17.9		ug/L		89	55 - 144
Xylenes, Total	40.0	36.7		ug/L		92	78 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	87		70 - 128
4-Bromofluorobenzene	87		76 - 120
Dibromofluoromethane (Surr)	85		77 - 124
Toluene-d8 (Surr)	93		80 - 120

Lab Sample ID: LCSD 460-888607/5

Matrix: Water

Analysis Batch: 888607

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	20.0	19.3		ug/L		96	68 - 128	6	30
1,1,2,2-Tetrachloroethane	20.0	21.0		ug/L		105	63 - 139	5	30
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	19.0		ug/L		95	51 - 142	7	30
1,1,2-Trichloroethane	20.0	21.4		ug/L		107	74 - 125	8	30
1,1-Dichloroethane	20.0	19.4		ug/L		97	73 - 130	6	30
1,1-Dichloroethene	20.0	19.3		ug/L		97	68 - 133	7	30
1,2,4-Trichlorobenzene	20.0	24.3		ug/L		121	67 - 132	11	30
1,2,4-Trimethylbenzene	20.0	21.3		ug/L		107	75 - 125	9	30
1,2-Dibromo-3-Chloropropane	20.0	22.1		ug/L		110	58 - 132	5	30
1,2-Dibromoethane	20.0	22.0		ug/L		110	79 - 126	10	30
1,2-Dichlorobenzene	20.0	21.4		ug/L		107	80 - 120	12	30
1,2-Dichloroethane	20.0	17.8		ug/L		89	66 - 129	6	30
1,2-Dichloropropane	20.0	20.1		ug/L		100	68 - 128	7	30
1,3-Dichlorobenzene	20.0	21.1		ug/L		105	80 - 120	8	30
1,4-Dichlorobenzene	20.0	21.1		ug/L		105	80 - 120	7	30
2-Butanone (MEK)	100	95.2		ug/L		95	61 - 128	7	30
2-Hexanone	100	92.1		ug/L		92	61 - 134	11	30
4-Methyl-2-pentanone (MIBK)	100	93.1		ug/L		93	69 - 128	11	30

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 8260B - Volatile Organics (GC/MS) (Continued)

Lab Sample ID: LCSD 460-888607/5

Matrix: Water

Analysis Batch: 888607

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetone	100	99.6		ug/L		100	61 - 134	9	30
Benzene	20.0	21.5		ug/L		107	71 - 126	8	30
Bromodichloromethane	20.0	19.4		ug/L		97	76 - 121	9	30
Bromoform	20.0	21.3		ug/L		106	48 - 144	9	30
Bromomethane	20.0	27.0		ug/L		135	32 - 150	12	30
Carbon disulfide	20.0	19.4		ug/L		97	64 - 138	6	30
Carbon tetrachloride	20.0	19.1		ug/L		95	61 - 131	8	30
Chlorobenzene	20.0	19.5		ug/L		98	80 - 120	7	30
Chloroethane	20.0	19.0		ug/L		95	42 - 150	6	30
Chloroform	20.0	18.6		ug/L		93	78 - 125	5	30
Chloromethane	20.0	19.4		ug/L		97	43 - 150	9	30
cis-1,2-Dichloroethene	20.0	18.9		ug/L		94	78 - 121	8	30
cis-1,3-Dichloropropene	20.0	21.6		ug/L		108	74 - 125	9	30
Cyclohexane	20.0	19.0		ug/L		95	60 - 133	6	30
Dibromochloromethane	20.0	21.2		ug/L		106	62 - 130	6	30
Dichlorodifluoromethane	20.0	18.2		ug/L		91	33 - 150	4	30
Ethylbenzene	20.0	20.5		ug/L		103	78 - 120	8	30
Isopropylbenzene	20.0	20.4		ug/L		102	79 - 125	7	30
Methyl acetate	40.0	39.2		ug/L		98	55 - 146	2	30
Methyl tert-butyl ether	20.0	19.7		ug/L		99	72 - 131	4	30
Methylcyclohexane	20.0	20.0		ug/L		100	54 - 139	5	30
Methylene Chloride	20.0	18.9		ug/L		94	74 - 127	5	30
Styrene	20.0	20.2		ug/L		101	75 - 127	10	30
Tetrachloroethene	20.0	21.3		ug/L		107	70 - 127	9	30
Toluene	20.0	20.8		ug/L		104	78 - 120	8	30
trans-1,2-Dichloroethene	20.0	19.2		ug/L		96	74 - 126	9	30
trans-1,3-Dichloropropene	20.0	21.4		ug/L		107	66 - 127	9	30
Trichloroethene	20.0	19.6		ug/L		98	71 - 121	5	30
Trichlorofluoromethane	20.0	18.9		ug/L		94	50 - 150	15	30
Vinyl chloride	20.0	19.2		ug/L		96	55 - 144	7	30
Xylenes, Total	40.0	40.4		ug/L		101	78 - 120	10	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		70 - 128
4-Bromofluorobenzene	91		76 - 120
Dibromofluoromethane (Surr)	86		77 - 124
Toluene-d8 (Surr)	97		80 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 460-887906/17-A

Matrix: Water

Analysis Batch: 887778

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 887906

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese, Dissolved	1.5	U	8.0	1.5	ug/L		01/12/23 20:17	01/12/23 21:17	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 460-887906/18-A
Matrix: Water
Analysis Batch: 887778

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 887906

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese, Dissolved	250	261.9		ug/L		105	80 - 120

Lab Sample ID: MB 460-888107/1-A
Matrix: Water
Analysis Batch: 888513

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 888107

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	19.5	U	40.0	19.5	ug/L		01/13/23 19:05	01/18/23 01:33	1
Antimony	0.76	U	2.0	0.76	ug/L		01/13/23 19:05	01/18/23 01:33	1
Arsenic	0.89	U	2.0	0.89	ug/L		01/13/23 19:05	01/18/23 01:33	1
Barium	0.91	U	4.0	0.91	ug/L		01/13/23 19:05	01/18/23 01:33	1
Beryllium	0.13	U	0.80	0.13	ug/L		01/13/23 19:05	01/18/23 01:33	1
Cadmium	0.39	U	2.0	0.39	ug/L		01/13/23 19:05	01/18/23 01:33	1
Calcium	53.6	U	500	53.6	ug/L		01/13/23 19:05	01/18/23 01:33	1
Chromium	2.5	U	4.0	2.5	ug/L		01/13/23 19:05	01/18/23 01:33	1
Cobalt	0.71	U	4.0	0.71	ug/L		01/13/23 19:05	01/18/23 01:33	1
Copper	2.5	U	4.0	2.5	ug/L		01/13/23 19:05	01/18/23 01:33	1
Iron	58.2	U	120	58.2	ug/L		01/13/23 19:05	01/18/23 01:33	1
Lead	0.84	U	1.2	0.84	ug/L		01/13/23 19:05	01/18/23 01:33	1
Magnesium	46.9	U	200	46.9	ug/L		01/13/23 19:05	01/18/23 01:33	1
Manganese	1.5	U	8.0	1.5	ug/L		01/13/23 19:05	01/18/23 01:33	1
Nickel	0.91	U	4.0	0.91	ug/L		01/13/23 19:05	01/18/23 01:33	1
Potassium	112	U	200	112	ug/L		01/13/23 19:05	01/18/23 01:33	1
Selenium	0.59	U	2.5	0.59	ug/L		01/13/23 19:05	01/18/23 01:33	1
Silver	0.29	U	2.0	0.29	ug/L		01/13/23 19:05	01/18/23 01:33	1
Thallium	0.21	U	0.80	0.21	ug/L		01/13/23 19:05	01/18/23 01:33	1
Vanadium	0.68	U	4.0	0.68	ug/L		01/13/23 19:05	01/18/23 01:33	1
Zinc	6.5	U	16.0	6.5	ug/L		01/13/23 19:05	01/18/23 01:33	1

Lab Sample ID: MB 460-888107/1-A
Matrix: Water
Analysis Batch: 888724

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 888107

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	163	U	500	163	ug/L		01/13/23 19:05	01/18/23 11:27	1

Lab Sample ID: LCS 460-888107/2-A
Matrix: Water
Analysis Batch: 888513

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 888107

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	2500	2683		ug/L		107	80 - 120
Antimony	25.0	26.79		ug/L		107	80 - 120
Arsenic	50.0	58.99		ug/L		118	80 - 120
Barium	50.0	49.90		ug/L		100	80 - 120
Beryllium	25.0	27.04		ug/L		108	80 - 120
Cadmium	25.0	29.62		ug/L		118	80 - 120
Calcium	2500	2626		ug/L		105	80 - 120
Chromium	50.0	57.35		ug/L		115	80 - 120

Eurofins Edison

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 460-888107/2-A

Matrix: Water

Analysis Batch: 888513

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 888107

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cobalt	25.0	28.82		ug/L		115	80 - 120
Iron	2500	2706		ug/L		108	80 - 120
Lead	25.0	27.32		ug/L		109	80 - 120
Magnesium	2500	2689		ug/L		108	80 - 120
Manganese	250	281.1		ug/L		112	80 - 120
Nickel	50.0	58.51		ug/L		117	80 - 120
Potassium	2500	2779		ug/L		111	80 - 120
Selenium	50.0	51.90		ug/L		104	80 - 120
Thallium	20.0	21.83		ug/L		109	80 - 120
Vanadium	50.0	56.42		ug/L		113	80 - 120
Zinc	250	277.1		ug/L		111	80 - 120

Lab Sample ID: LCS 460-888107/2-A

Matrix: Water

Analysis Batch: 888724

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 888107

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Copper	50.0	50.23		ug/L		100	80 - 120
Silver	25.0	26.29		ug/L		105	80 - 120
Sodium	2500	2449		ug/L		98	80 - 120

Lab Sample ID: 460-272718-F-5-G MS

Matrix: Water

Analysis Batch: 888724

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 888107

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	55300		2500	58830	4	ug/L		141	75 - 125

Lab Sample ID: 460-272718-F-5-G MS ^2

Matrix: Water

Analysis Batch: 888724

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 888107

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese	9290		250	9682	4	ug/L		158	75 - 125

Lab Sample ID: 460-272718-F-5-H MSD

Matrix: Water

Analysis Batch: 888724

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 888107

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sodium	55300		2500	56900	4	ug/L		64	75 - 125	3	20

Lab Sample ID: 460-272718-F-5-H MSD ^2

Matrix: Water

Analysis Batch: 888724

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 888107

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	9290		250	9775	4	ug/L		195	75 - 125	1	20

Eurofins Edison

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 460-272828-7 MS

Matrix: Water

Analysis Batch: 888513

Client Sample ID: GW-11222397-011123-ZB-12

Prep Type: Total/NA

Prep Batch: 888107

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	1920	F1	2500	5008		ug/L		124	75 - 125
Antimony	0.76	U	25.0	26.55		ug/L		106	75 - 125
Arsenic	1.0	J	50.0	55.47		ug/L		109	75 - 125
Barium	327		50.0	383.9	4	ug/L		115	75 - 125
Beryllium	0.13	U	25.0	26.95		ug/L		108	75 - 125
Cadmium	0.39	U	25.0	27.77		ug/L		111	75 - 125
Calcium	74300		2500	76000	4	ug/L		69	75 - 125
Chromium	3.4	J	50.0	60.78		ug/L		115	75 - 125
Cobalt	7.4		25.0	35.01		ug/L		111	75 - 125
Copper	5.1		50.0	61.85		ug/L		113	75 - 125
Iron	3500		2500	6156		ug/L		106	75 - 125
Lead	2.7		25.0	29.70		ug/L		108	75 - 125
Magnesium	52700		2500	55410	4	ug/L		107	75 - 125
Manganese	1270		250	1542	4	ug/L		108	75 - 125
Nickel	9.3		50.0	63.87		ug/L		109	75 - 125
Potassium	8730		2500	11210		ug/L		99	75 - 125
Selenium	0.59	U	50.0	51.70		ug/L		103	75 - 125
Silver	0.29	U	25.0	29.06		ug/L		116	75 - 125
Thallium	0.21	U	20.0	21.77		ug/L		109	75 - 125
Vanadium	5.3		50.0	60.82		ug/L		111	75 - 125
Zinc	20.5		250	284.0		ug/L		105	75 - 125

Lab Sample ID: 460-272828-7 MS

Matrix: Water

Analysis Batch: 888724

Client Sample ID: GW-11222397-011123-ZB-12

Prep Type: Total/NA

Prep Batch: 888107

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	84800		2500	86330	4	ug/L		62	75 - 125

Lab Sample ID: 460-272828-7 MSD

Matrix: Water

Analysis Batch: 888513

Client Sample ID: GW-11222397-011123-ZB-12

Prep Type: Total/NA

Prep Batch: 888107

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Aluminum	1920	F1	2500	5336	F1	ug/L		137	75 - 125	6	20
Antimony	0.76	U	25.0	28.47		ug/L		114	75 - 125	7	20
Arsenic	1.0	J	50.0	55.71		ug/L		109	75 - 125	0	20
Barium	327		50.0	378.4	4	ug/L		104	75 - 125	1	20
Beryllium	0.13	U	25.0	28.31		ug/L		113	75 - 125	5	20
Cadmium	0.39	U	25.0	28.69		ug/L		115	75 - 125	3	20
Calcium	74300		2500	79430	4	ug/L		206	75 - 125	4	20
Chromium	3.4	J	50.0	61.62		ug/L		117	75 - 125	1	20
Cobalt	7.4		25.0	35.62		ug/L		113	75 - 125	2	20
Copper	5.1		50.0	63.48		ug/L		117	75 - 125	3	20
Iron	3500		2500	6624		ug/L		125	75 - 125	7	20
Lead	2.7		25.0	30.68		ug/L		112	75 - 125	3	20
Magnesium	52700		2500	53910	4	ug/L		46	75 - 125	3	20
Manganese	1270		250	1524	4	ug/L		101	75 - 125	1	20
Nickel	9.3		50.0	65.77		ug/L		113	75 - 125	3	20

Eurofins Edison

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 460-272828-7 MSD

Matrix: Water

Analysis Batch: 888513

Client Sample ID: GW-11222397-011123-ZB-12

Prep Type: Total/NA

Prep Batch: 888107

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Potassium	8730		2500	11170		ug/L		97	75 - 125	0	20
Selenium	0.59	U	50.0	58.80		ug/L		118	75 - 125	13	20
Silver	0.29	U	25.0	29.61		ug/L		118	75 - 125	2	20
Thallium	0.21	U	20.0	22.58		ug/L		113	75 - 125	4	20
Vanadium	5.3		50.0	62.58		ug/L		115	75 - 125	3	20
Zinc	20.5		250	288.5		ug/L		107	75 - 125	2	20

Lab Sample ID: 460-272828-7 MSD

Matrix: Water

Analysis Batch: 888724

Client Sample ID: GW-11222397-011123-ZB-12

Prep Type: Total/NA

Prep Batch: 888107

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sodium	84800		2500	86210	4	ug/L		58	75 - 125	0	20

Lab Sample ID: 460-272718-F-5-F DU

Matrix: Water

Analysis Batch: 888513

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 888107

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	12600		12520		ug/L		1	20
Antimony	0.76	U	0.76	U	ug/L		NC	20
Arsenic	2.2		2.62		ug/L		18	20
Barium	45.6		44.84		ug/L		2	20
Beryllium	2.5		2.35		ug/L		5	20
Cadmium	2.5		2.01	F5	ug/L		21	20
Calcium	92400		89610		ug/L		3	20
Chromium	6.6		6.16		ug/L		6	20
Cobalt	74.6	F1	73.37		ug/L		2	20
Copper	101	F1	99.72		ug/L		1	20
Iron	16600		15890		ug/L		4	20
Lead	8.3		8.01		ug/L		4	20
Magnesium	30400		30100		ug/L		1	20
Nickel	301		296.7		ug/L		2	20
Potassium	8700	F1	8462		ug/L		3	20
Selenium	0.59	U	0.59	U	ug/L		NC	20
Silver	0.29	U	0.29	U	ug/L		NC	20
Thallium	0.21	U	0.21	U	ug/L		NC	20
Vanadium	2.1	J	2.20	J	ug/L		6	20
Zinc	444		437.0		ug/L		2	20

Lab Sample ID: 460-272718-F-5-F DU

Matrix: Water

Analysis Batch: 888724

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 888107

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sodium	55300		56130		ug/L		1	20

Eurofins Edison

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 460-272718-F-5-F DU ^2
Matrix: Water
Analysis Batch: 888724

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 888107

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Manganese	9290		9606		ug/L		3	20

Lab Sample ID: MB 460-888193/1-A
Matrix: Water
Analysis Batch: 888909

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 888193

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	19.5	U	40.0	19.5	ug/L		01/15/23 10:19	01/20/23 00:26	1
Antimony	0.76	U	2.0	0.76	ug/L		01/15/23 10:19	01/20/23 00:26	1
Arsenic	0.89	U	2.0	0.89	ug/L		01/15/23 10:19	01/20/23 00:26	1
Barium	0.91	U	4.0	0.91	ug/L		01/15/23 10:19	01/20/23 00:26	1
Beryllium	0.13	U	0.80	0.13	ug/L		01/15/23 10:19	01/20/23 00:26	1
Cadmium	0.39	U	2.0	0.39	ug/L		01/15/23 10:19	01/20/23 00:26	1
Calcium	53.6	U	500	53.6	ug/L		01/15/23 10:19	01/20/23 00:26	1
Chromium	2.5	U	4.0	2.5	ug/L		01/15/23 10:19	01/20/23 00:26	1
Cobalt	0.71	U	4.0	0.71	ug/L		01/15/23 10:19	01/20/23 00:26	1
Copper	2.5	U	4.0	2.5	ug/L		01/15/23 10:19	01/20/23 00:26	1
Iron	58.2	U	120	58.2	ug/L		01/15/23 10:19	01/20/23 00:26	1
Lead	0.84	U	1.2	0.84	ug/L		01/15/23 10:19	01/20/23 00:26	1
Magnesium	46.9	U	200	46.9	ug/L		01/15/23 10:19	01/20/23 00:26	1
Manganese	1.5	U	8.0	1.5	ug/L		01/15/23 10:19	01/20/23 00:26	1
Nickel	0.91	U	4.0	0.91	ug/L		01/15/23 10:19	01/20/23 00:26	1
Potassium	112	U	200	112	ug/L		01/15/23 10:19	01/20/23 00:26	1
Selenium	0.59	U	2.5	0.59	ug/L		01/15/23 10:19	01/20/23 00:26	1
Silver	0.29	U	2.0	0.29	ug/L		01/15/23 10:19	01/20/23 00:26	1
Sodium	163	U	500	163	ug/L		01/15/23 10:19	01/20/23 00:26	1
Thallium	0.21	U	0.80	0.21	ug/L		01/15/23 10:19	01/20/23 00:26	1
Vanadium	0.68	U	4.0	0.68	ug/L		01/15/23 10:19	01/20/23 00:26	1
Zinc	6.5	U	16.0	6.5	ug/L		01/15/23 10:19	01/20/23 00:26	1

Lab Sample ID: LCS 460-888193/2-A
Matrix: Water
Analysis Batch: 888909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 888193

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	2500	2502		ug/L		100	80 - 120
Antimony	25.0	23.19		ug/L		93	80 - 120
Arsenic	50.0	51.53		ug/L		103	80 - 120
Barium	50.0	54.29		ug/L		109	80 - 120
Beryllium	25.0	22.94		ug/L		92	80 - 120
Cadmium	25.0	24.17		ug/L		97	80 - 120
Calcium	2500	2647		ug/L		106	80 - 120
Chromium	50.0	50.17		ug/L		100	80 - 120
Cobalt	25.0	24.75		ug/L		99	80 - 120
Copper	50.0	50.11		ug/L		100	80 - 120
Iron	2500	2491		ug/L		100	80 - 120
Lead	25.0	24.22		ug/L		97	80 - 120
Magnesium	2500	2385		ug/L		95	80 - 120
Manganese	250	252.7		ug/L		101	80 - 120

Eurofins Edison

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 460-888193/2-A

Matrix: Water

Analysis Batch: 888909

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 888193

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nickel	50.0	47.69		ug/L		95	80 - 120
Potassium	2500	2567		ug/L		103	80 - 120
Selenium	50.0	47.48		ug/L		95	80 - 120
Silver	25.0	23.34		ug/L		93	80 - 120
Sodium	2500	2429		ug/L		97	80 - 120
Thallium	20.0	19.51		ug/L		98	80 - 120
Vanadium	50.0	48.31		ug/L		97	80 - 120
Zinc	250	240.7		ug/L		96	80 - 120

Lab Sample ID: 460-272828-6 MS

Matrix: Water

Analysis Batch: 888909

Client Sample ID: RB-11222397-011123-ZB-11

Prep Type: Total/NA

Prep Batch: 888193

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	19.5	U	2500	2590		ug/L		104	75 - 125
Antimony	0.76	U	25.0	24.48		ug/L		98	75 - 125
Arsenic	0.89	U	50.0	49.79		ug/L		100	75 - 125
Barium	0.91	U	50.0	54.22		ug/L		108	75 - 125
Beryllium	0.13	U	25.0	23.95		ug/L		96	75 - 125
Cadmium	0.39	U	25.0	25.32		ug/L		101	75 - 125
Calcium	53.6	U	2500	2628		ug/L		105	75 - 125
Chromium	2.5	U	50.0	51.24		ug/L		102	75 - 125
Cobalt	0.71	U	25.0	25.18		ug/L		101	75 - 125
Copper	23.3		50.0	73.42		ug/L		100	75 - 125
Iron	58.2	U	2500	2529		ug/L		101	75 - 125
Lead	0.84	U	25.0	25.13		ug/L		101	75 - 125
Magnesium	46.9	U	2500	2440		ug/L		98	75 - 125
Manganese	1.5	U	250	257.4		ug/L		103	75 - 125
Nickel	41.5		50.0	91.00		ug/L		99	75 - 125
Potassium	112	U	2500	2648		ug/L		106	75 - 125
Selenium	0.59	U	50.0	49.89		ug/L		100	75 - 125
Silver	0.29	U	25.0	24.05		ug/L		96	75 - 125
Sodium	163	U	2500	2534		ug/L		101	75 - 125
Thallium	0.21	U	20.0	19.82		ug/L		99	75 - 125
Vanadium	0.68	U	50.0	49.28		ug/L		99	75 - 125
Zinc	6.5	U	250	238.8		ug/L		96	75 - 125

Lab Sample ID: 460-272828-6 DU

Matrix: Water

Analysis Batch: 888909

Client Sample ID: RB-11222397-011123-ZB-11

Prep Type: Total/NA

Prep Batch: 888193

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	19.5	U	19.5	U	ug/L		NC	20
Antimony	0.76	U	0.76	U	ug/L		NC	20
Arsenic	0.89	U	0.89	U	ug/L		NC	20
Barium	0.91	U	0.91	U	ug/L		NC	20
Beryllium	0.13	U	0.13	U	ug/L		NC	20
Cadmium	0.39	U	0.39	U	ug/L		NC	20
Calcium	53.6	U	53.6	U	ug/L		NC	20

Eurofins Edison

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 460-272828-6 DU

Matrix: Water

Analysis Batch: 888909

Client Sample ID: RB-11222397-011123-ZB-11

Prep Type: Total/NA

Prep Batch: 888193

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Chromium	2.5	U	2.5	U	ug/L		NC	20
Cobalt	0.71	U	0.71	U	ug/L		NC	20
Copper	23.3		24.76		ug/L		6	20
Iron	58.2	U	58.2	U	ug/L		NC	20
Lead	0.84	U	0.84	U	ug/L		NC	20
Magnesium	46.9	U	46.9	U	ug/L		NC	20
Manganese	1.5	U	1.5	U	ug/L		NC	20
Nickel	41.5		42.80		ug/L		3	20
Potassium	112	U	112	U	ug/L		NC	20
Selenium	0.59	U	0.59	U	ug/L		NC	20
Silver	0.29	U	0.29	U	ug/L		NC	20
Sodium	163	U	163	U	ug/L		NC	20
Thallium	0.21	U	0.21	U	ug/L		NC	20
Vanadium	0.68	U	0.68	U	ug/L		NC	20
Zinc	6.5	U	6.5	U	ug/L		NC	20

Lab Sample ID: MB 460-888690/1-A

Matrix: Water

Analysis Batch: 888909

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 888690

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	19.5	U	40.0	19.5	ug/L		01/18/23 09:37	01/19/23 11:42	1
Antimony	0.76	U	2.0	0.76	ug/L		01/18/23 09:37	01/19/23 11:42	1
Arsenic	0.89	U	2.0	0.89	ug/L		01/18/23 09:37	01/19/23 11:42	1
Barium	0.91	U	4.0	0.91	ug/L		01/18/23 09:37	01/19/23 11:42	1
Beryllium	0.13	U	0.80	0.13	ug/L		01/18/23 09:37	01/19/23 11:42	1
Cadmium	0.39	U	2.0	0.39	ug/L		01/18/23 09:37	01/19/23 11:42	1
Calcium	53.6	U	500	53.6	ug/L		01/18/23 09:37	01/19/23 11:42	1
Chromium	2.5	U	4.0	2.5	ug/L		01/18/23 09:37	01/19/23 11:42	1
Cobalt	0.71	U	4.0	0.71	ug/L		01/18/23 09:37	01/19/23 11:42	1
Copper	2.5	U	4.0	2.5	ug/L		01/18/23 09:37	01/19/23 11:42	1
Iron	58.2	U	120	58.2	ug/L		01/18/23 09:37	01/19/23 11:42	1
Lead	0.84	U	1.2	0.84	ug/L		01/18/23 09:37	01/19/23 11:42	1
Magnesium	46.9	U	200	46.9	ug/L		01/18/23 09:37	01/19/23 11:42	1
Manganese	1.5	U	8.0	1.5	ug/L		01/18/23 09:37	01/19/23 11:42	1
Nickel	0.91	U	4.0	0.91	ug/L		01/18/23 09:37	01/19/23 11:42	1
Potassium	112	U	200	112	ug/L		01/18/23 09:37	01/19/23 11:42	1
Selenium	0.59	U	2.5	0.59	ug/L		01/18/23 09:37	01/19/23 11:42	1
Silver	0.29	U	2.0	0.29	ug/L		01/18/23 09:37	01/19/23 11:42	1
Sodium	163	U	500	163	ug/L		01/18/23 09:37	01/19/23 11:42	1
Thallium	0.21	U	0.80	0.21	ug/L		01/18/23 09:37	01/19/23 11:42	1
Vanadium	0.68	U	4.0	0.68	ug/L		01/18/23 09:37	01/19/23 11:42	1
Zinc	6.5	U	16.0	6.5	ug/L		01/18/23 09:37	01/19/23 11:42	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 460-888690/2-A
Matrix: Water
Analysis Batch: 888909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 888690

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	2500	2405		ug/L		96	80 - 120
Antimony	25.0	23.74		ug/L		95	80 - 120
Arsenic	50.0	45.74		ug/L		91	80 - 120
Barium	50.0	49.86		ug/L		100	80 - 120
Beryllium	25.0	23.93		ug/L		96	80 - 120
Cadmium	25.0	22.85		ug/L		91	80 - 120
Calcium	2500	2418		ug/L		97	80 - 120
Chromium	50.0	49.91		ug/L		100	80 - 120
Cobalt	25.0	24.58		ug/L		98	80 - 120
Copper	50.0	50.83		ug/L		102	80 - 120
Iron	2500	2455		ug/L		98	80 - 120
Lead	25.0	23.62		ug/L		94	80 - 120
Magnesium	2500	2355		ug/L		94	80 - 120
Manganese	250	244.6		ug/L		98	80 - 120
Nickel	50.0	48.28		ug/L		97	80 - 120
Potassium	2500	2428		ug/L		97	80 - 120
Selenium	50.0	48.44		ug/L		97	80 - 120
Silver	25.0	23.84		ug/L		95	80 - 120
Sodium	2500	2343		ug/L		94	80 - 120
Thallium	20.0	18.80		ug/L		94	80 - 120
Vanadium	50.0	47.91		ug/L		96	80 - 120
Zinc	250	242.8		ug/L		97	80 - 120

Lab Sample ID: 460-273072-D-4-C MS
Matrix: Water
Analysis Batch: 888909

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 888690

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	19.5	U	2500	2389		ug/L		96	75 - 125
Antimony	0.76	U	25.0	24.44		ug/L		98	75 - 125
Arsenic	26.3		50.0	74.85		ug/L		97	75 - 125
Barium	87.7		50.0	143.9		ug/L		112	75 - 125
Beryllium	0.13	U	25.0	24.36		ug/L		97	75 - 125
Cadmium	0.39	U	25.0	25.20		ug/L		101	75 - 125
Calcium	183000		2500	192100	4	ug/L		363	75 - 125
Chromium	4720		50.0	4862	4	ug/L		291	75 - 125
Cobalt	1.9	J	25.0	25.41		ug/L		94	75 - 125
Copper	10.1		50.0	55.85		ug/L		91	75 - 125
Iron	2520		2500	4989		ug/L		99	75 - 125
Lead	3.8		25.0	27.82		ug/L		96	75 - 125
Magnesium	35000		2500	38060	4	ug/L		122	75 - 125
Manganese	3690		250	3992	4	ug/L		119	75 - 125
Nickel	32.3		50.0	80.38		ug/L		96	75 - 125
Potassium	16500		2500	19190	4	ug/L		109	75 - 125
Selenium	0.59	U	50.0	47.84		ug/L		96	75 - 125
Silver	0.29	U	25.0	23.48		ug/L		94	75 - 125
Sodium	242000		2500	250600	4	ug/L		336	75 - 125
Thallium	0.21	U	20.0	19.44		ug/L		97	75 - 125
Vanadium	1.9	J	50.0	49.49		ug/L		95	75 - 125

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 460-273072-D-4-C MS

Matrix: Water

Analysis Batch: 888909

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 888690

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Zinc	86.6		250	319.0		ug/L		93	75 - 125

Lab Sample ID: 460-273072-D-4-D MSD

Matrix: Water

Analysis Batch: 888909

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 888690

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	19.5	U	2500	2351		ug/L		94	75 - 125	2	20
Antimony	0.76	U	25.0	23.56		ug/L		94	75 - 125	4	20
Arsenic	26.3		50.0	74.37		ug/L		96	75 - 125	1	20
Barium	87.7		50.0	132.3		ug/L		89	75 - 125	8	20
Beryllium	0.13	U	25.0	23.41		ug/L		94	75 - 125	4	20
Cadmium	0.39	U	25.0	23.27		ug/L		93	75 - 125	8	20
Calcium	183000		2500	186900	4	ug/L		153	75 - 125	3	20
Chromium	4720		50.0	4784	4	ug/L		136	75 - 125	2	20
Cobalt	1.9	J	25.0	24.99		ug/L		92	75 - 125	2	20
Copper	10.1		50.0	53.41		ug/L		87	75 - 125	4	20
Iron	2520		2500	4855		ug/L		93	75 - 125	3	20
Lead	3.8		25.0	26.98		ug/L		93	75 - 125	3	20
Magnesium	35000		2500	37410	4	ug/L		96	75 - 125	2	20
Manganese	3690		250	3928	4	ug/L		94	75 - 125	2	20
Nickel	32.3		50.0	79.31		ug/L		94	75 - 125	1	20
Potassium	16500		2500	18880	4	ug/L		96	75 - 125	2	20
Selenium	0.59	U	50.0	45.23		ug/L		90	75 - 125	6	20
Silver	0.29	U	25.0	22.38		ug/L		90	75 - 125	5	20
Sodium	242000		2500	247100	4	ug/L		197	75 - 125	1	20
Thallium	0.21	U	20.0	18.94		ug/L		95	75 - 125	3	20
Vanadium	1.9	J	50.0	47.63		ug/L		91	75 - 125	4	20
Zinc	86.6		250	315.2		ug/L		91	75 - 125	1	20

Lab Sample ID: 460-273072-D-4-B DU

Matrix: Water

Analysis Batch: 888909

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 888690

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	19.5	U	19.5	U	ug/L		NC	20
Antimony	0.76	U	0.76	U	ug/L		NC	20
Arsenic	26.3		26.37		ug/L		0.4	20
Barium	87.7		90.68		ug/L		3	20
Beryllium	0.13	U	0.13	U	ug/L		NC	20
Cadmium	0.39	U	0.39	U	ug/L		NC	20
Calcium	183000		184800		ug/L		1	20
Chromium	4720		4722		ug/L		0.1	20
Cobalt	1.9	J	1.78	J	ug/L		6	20
Copper	10.1		10.59		ug/L		4	20
Iron	2520		2557		ug/L		2	20
Lead	3.8		3.80		ug/L		0.7	20
Magnesium	35000		35200		ug/L		0.5	20
Manganese	3690		3719		ug/L		0.7	20

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 460-273072-D-4-B DU
Matrix: Water
Analysis Batch: 888909

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 888690

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Nickel	32.3		33.73		ug/L		4	20
Potassium	16500		16630		ug/L		1	20
Selenium	0.59	U	0.59	U	ug/L		NC	20
Silver	0.29	U	0.29	U	ug/L		NC	20
Sodium	242000		242900		ug/L		0.3	20
Thallium	0.21	U	0.21	U	ug/L		NC	20
Vanadium	1.9	J	1.97	J	ug/L		2	20
Zinc	86.6		87.75		ug/L		1	20

Lab Sample ID: MB 460-889158/1-A
Matrix: Water
Analysis Batch: 889348

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 889158

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese, Dissolved	1.5	U	8.0	1.5	ug/L		01/20/23 21:49	01/20/23 23:19	1

Lab Sample ID: LCS 460-889158/2-A
Matrix: Water
Analysis Batch: 889348

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 889158

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese, Dissolved	250	263.4		ug/L		105	80 - 120

Lab Sample ID: MB 460-889577/1-A
Matrix: Water
Analysis Batch: 889814

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 889577

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	19.5	U	40.0	19.5	ug/L		01/24/23 13:23	01/25/23 20:28	1
Antimony	0.76	U	2.0	0.76	ug/L		01/24/23 13:23	01/25/23 20:28	1
Arsenic	0.89	U	2.0	0.89	ug/L		01/24/23 13:23	01/25/23 20:28	1
Barium	0.91	U	4.0	0.91	ug/L		01/24/23 13:23	01/25/23 20:28	1
Beryllium	0.13	U	0.80	0.13	ug/L		01/24/23 13:23	01/25/23 20:28	1
Cadmium	0.39	U	2.0	0.39	ug/L		01/24/23 13:23	01/25/23 20:28	1
Calcium	53.6	U	500	53.6	ug/L		01/24/23 13:23	01/25/23 20:28	1
Chromium	2.5	U	4.0	2.5	ug/L		01/24/23 13:23	01/25/23 20:28	1
Cobalt	0.71	U	4.0	0.71	ug/L		01/24/23 13:23	01/25/23 20:28	1
Copper	2.5	U	4.0	2.5	ug/L		01/24/23 13:23	01/25/23 20:28	1
Iron	58.2	U	120	58.2	ug/L		01/24/23 13:23	01/25/23 20:28	1
Lead	0.84	U	1.2	0.84	ug/L		01/24/23 13:23	01/25/23 20:28	1
Magnesium	46.9	U	200	46.9	ug/L		01/24/23 13:23	01/25/23 20:28	1
Manganese	1.5	U	8.0	1.5	ug/L		01/24/23 13:23	01/25/23 20:28	1
Nickel	0.91	U	4.0	0.91	ug/L		01/24/23 13:23	01/25/23 20:28	1
Potassium	112	U	200	112	ug/L		01/24/23 13:23	01/25/23 20:28	1
Selenium	0.59	U	2.5	0.59	ug/L		01/24/23 13:23	01/25/23 20:28	1
Silver	0.29	U	2.0	0.29	ug/L		01/24/23 13:23	01/25/23 20:28	1
Sodium	163	U	500	163	ug/L		01/24/23 13:23	01/25/23 20:28	1
Vanadium	0.68	U	4.0	0.68	ug/L		01/24/23 13:23	01/25/23 20:28	1
Zinc	6.5	U	16.0	6.5	ug/L		01/24/23 13:23	01/25/23 20:28	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 460-889577/1-A
Matrix: Water
Analysis Batch: 890039

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 889577

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	0.21	U	0.80	0.21	ug/L		01/24/23 13:23	01/26/23 21:17	1

Lab Sample ID: LCS 460-889577/2-A
Matrix: Water
Analysis Batch: 889814

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 889577

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	2500	2345		ug/L		94	80 - 120
Antimony	25.0	22.16		ug/L		89	80 - 120
Arsenic	50.0	47.36		ug/L		95	80 - 120
Barium	50.0	46.70		ug/L		93	80 - 120
Beryllium	25.0	21.81		ug/L		87	80 - 120
Cadmium	25.0	21.87		ug/L		87	80 - 120
Calcium	2500	2408		ug/L		96	80 - 120
Chromium	50.0	47.94		ug/L		96	80 - 120
Cobalt	25.0	23.50		ug/L		94	80 - 120
Copper	50.0	48.26		ug/L		97	80 - 120
Iron	2500	2414		ug/L		97	80 - 120
Lead	25.0	23.03		ug/L		92	80 - 120
Magnesium	2500	2174		ug/L		87	80 - 120
Manganese	250	238.9		ug/L		96	80 - 120
Nickel	50.0	43.51		ug/L		87	80 - 120
Potassium	2500	2186		ug/L		87	80 - 120
Selenium	50.0	46.35		ug/L		93	80 - 120
Silver	25.0	22.29		ug/L		89	80 - 120
Vanadium	50.0	44.74		ug/L		89	80 - 120
Zinc	250	236.4		ug/L		95	80 - 120

Lab Sample ID: LCS 460-889577/2-A
Matrix: Water
Analysis Batch: 890039

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 889577

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	2500	2382		ug/L		95	80 - 120
Thallium	20.0	19.61		ug/L		98	80 - 120

Lab Sample ID: 460-273069-G-10-C MS
Matrix: Water
Analysis Batch: 889814

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 889577

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	23.4	J	2500	2545		ug/L		101	75 - 125
Antimony	0.76	U	25.0	23.78		ug/L		95	75 - 125
Arsenic	0.89	U	50.0	51.63		ug/L		103	75 - 125
Barium	12.5		50.0	61.95		ug/L		99	75 - 125
Beryllium	0.13	U	25.0	24.14		ug/L		97	75 - 125
Cadmium	0.39	U	25.0	24.09		ug/L		96	75 - 125
Calcium	22400		2500	24660	4	ug/L		89	75 - 125
Chromium	2.5	U	50.0	52.11		ug/L		104	75 - 125

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 460-273069-G-10-C MS

Matrix: Water

Analysis Batch: 889814

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 889577

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cobalt	1.6	J	25.0	27.11		ug/L		102	75 - 125
Copper	2.5	U	50.0	53.11		ug/L		106	75 - 125
Iron	83.0	J	2500	2645		ug/L		102	75 - 125
Lead	0.84	U	25.0	24.75		ug/L		99	75 - 125
Magnesium	7930		2500	10300		ug/L		95	75 - 125
Manganese	144		250	405.2		ug/L		104	75 - 125
Nickel	0.91	U	50.0	49.55		ug/L		99	75 - 125
Potassium	3740		2500	6190		ug/L		98	75 - 125
Selenium	0.59	U	50.0	50.60		ug/L		101	75 - 125
Silver	0.29	U	25.0	23.78		ug/L		95	75 - 125
Sodium	12300		2500	14630	4	ug/L		91	75 - 125
Vanadium	0.68	U	50.0	49.41		ug/L		99	75 - 125
Zinc	6.5	U	250	252.8		ug/L		101	75 - 125

Lab Sample ID: 460-273069-G-10-C MS

Matrix: Water

Analysis Batch: 890039

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 889577

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Thallium	0.21	U	20.0	21.60		ug/L		108	75 - 125

Lab Sample ID: 460-273069-G-10-B DU

Matrix: Water

Analysis Batch: 889814

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 889577

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	23.4	J	23.32	J	ug/L		0.2	20
Antimony	0.76	U	0.76	U	ug/L		NC	20
Arsenic	0.89	U	0.89	U	ug/L		NC	20
Barium	12.5		12.70		ug/L		1	20
Beryllium	0.13	U	0.13	U	ug/L		NC	20
Cadmium	0.39	U	0.39	U	ug/L		NC	20
Calcium	22400		22460		ug/L		0.06	20
Chromium	2.5	U	2.5	U	ug/L		NC	20
Cobalt	1.6	J	1.61	J	ug/L		3	20
Copper	2.5	U	2.5	U	ug/L		NC	20
Iron	83.0	J	75.56	J	ug/L		9	20
Lead	0.84	U	0.84	U	ug/L		NC	20
Magnesium	7930		8080		ug/L		2	20
Manganese	144		143.9		ug/L		0.1	20
Nickel	0.91	U	0.91	U	ug/L		NC	20
Potassium	3740		3832		ug/L		2	20
Selenium	0.59	U	0.59	U	ug/L		NC	20
Silver	0.29	U	0.29	U	ug/L		NC	20
Sodium	12300		12440		ug/L		0.7	20
Vanadium	0.68	U	0.68	U	ug/L		NC	20
Zinc	6.5	U	6.5	U	ug/L		NC	20

Eurofins Edison

QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 460-273069-G-10-B DU

Matrix: Water

Analysis Batch: 890039

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 889577

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Thallium	0.21	U	0.21	U	ug/L		NC	20

Lab Sample ID: 460-272828-7 MS

Matrix: Water

Analysis Batch: 887778

Client Sample ID: GW-11222397-011123-ZB-12

Prep Type: Dissolved

Prep Batch: 887906

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Manganese, Dissolved	1170		250	1399	4	ug/L		91	75 - 125		

Lab Sample ID: 460-272828-7 MSD

Matrix: Water

Analysis Batch: 887778

Client Sample ID: GW-11222397-011123-ZB-12

Prep Type: Dissolved

Prep Batch: 887906

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Manganese, Dissolved	1170		250	1454	4	ug/L		113	75 - 125	4	20

Lab Sample ID: 460-272828-7 DU

Matrix: Water

Analysis Batch: 887778

Client Sample ID: GW-11222397-011123-ZB-12

Prep Type: Dissolved

Prep Batch: 887906

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Manganese, Dissolved	1170		1174		ug/L		0.2	20

Lab Sample ID: 460-272921-E-1-C MS

Matrix: Water

Analysis Batch: 889348

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 889158

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Manganese, Dissolved	2.6	J	250	241.0		ug/L		95	75 - 125		

Lab Sample ID: 460-272921-E-1-B DU

Matrix: Water

Analysis Batch: 889348

Client Sample ID: Duplicate

Prep Type: Dissolved

Prep Batch: 889158

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Manganese, Dissolved	2.6	J	2.92	J	ug/L		11	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 460-888555/1-A

Matrix: Water

Analysis Batch: 888595

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 888555

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.091	U	0.20	0.091	ug/L		01/17/23 14:32	01/17/23 15:04	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 460-888555/2-A

Matrix: Water

Analysis Batch: 888595

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 888555

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.00	0.939		ug/L		94	80 - 120

Lab Sample ID: 460-272828-7 MS

Matrix: Water

Analysis Batch: 888595

Client Sample ID: GW-11222397-011123-ZB-12

Prep Type: Total/NA

Prep Batch: 888555

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.091	U	1.00	0.948		ug/L		95	75 - 125

Lab Sample ID: 460-272828-7 MSD

Matrix: Water

Analysis Batch: 888595

Client Sample ID: GW-11222397-011123-ZB-12

Prep Type: Total/NA

Prep Batch: 888555

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.091	U	1.00	0.907		ug/L		91	75 - 125	4	20

Lab Sample ID: 460-272828-7 DU

Matrix: Water

Analysis Batch: 888595

Client Sample ID: GW-11222397-011123-ZB-12

Prep Type: Total/NA

Prep Batch: 888555

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	0.091	U	0.091	U	ug/L		NC	20

QC Association Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

GC/MS VOA

Analysis Batch: 888265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-1	RB-11222397-011123-ZB-06	Total/NA	Water	8260B	
460-272828-2	GW-11222397-011123-ZB-07	Total/NA	Water	8260B	
460-272828-3	GW-11222397-011123-MA-08	Total/NA	Water	8260B	
460-272828-4	GW-11222397-011123-MA-09	Total/NA	Water	8260B	
460-272828-5	GW-11222397-011123-ZB-10	Total/NA	Water	8260B	
460-272828-8	GW-11222397-011123-MA-13	Total/NA	Water	8260B	
460-272828-11	TRIP BLANK	Total/NA	Water	8260B	
MB 460-888265/8	Method Blank	Total/NA	Water	8260B	
LCS 460-888265/4	Lab Control Sample	Total/NA	Water	8260B	
460-272828-2 MS	GW-11222397-011123-ZB-07	Total/NA	Water	8260B	
460-272828-2 MSD	GW-11222397-011123-ZB-07	Total/NA	Water	8260B	

Analysis Batch: 888607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-10	TRIP BLANK	Total/NA	Water	8260B	
MB 460-888607/9	Method Blank	Total/NA	Water	8260B	
LCS 460-888607/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 460-888607/5	Lab Control Sample Dup	Total/NA	Water	8260B	

Metals

Analysis Batch: 887778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-6	RB-11222397-011123-ZB-11	Dissolved	Water	6020B	887906
460-272828-7	GW-11222397-011123-ZB-12	Dissolved	Water	6020B	887906
MB 460-887906/17-A	Method Blank	Total/NA	Water	6020B	887906
LCS 460-887906/18-A	Lab Control Sample	Total/NA	Water	6020B	887906
460-272828-7 MS	GW-11222397-011123-ZB-12	Dissolved	Water	6020B	887906
460-272828-7 MSD	GW-11222397-011123-ZB-12	Dissolved	Water	6020B	887906
460-272828-7 DU	GW-11222397-011123-ZB-12	Dissolved	Water	6020B	887906

Prep Batch: 887906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-6	RB-11222397-011123-ZB-11	Dissolved	Water	3010A	
460-272828-7	GW-11222397-011123-ZB-12	Dissolved	Water	3010A	
MB 460-887906/17-A	Method Blank	Total/NA	Water	3010A	
LCS 460-887906/18-A	Lab Control Sample	Total/NA	Water	3010A	
460-272828-7 MS	GW-11222397-011123-ZB-12	Dissolved	Water	3010A	
460-272828-7 MSD	GW-11222397-011123-ZB-12	Dissolved	Water	3010A	
460-272828-7 DU	GW-11222397-011123-ZB-12	Dissolved	Water	3010A	

Prep Batch: 888107

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-7	GW-11222397-011123-ZB-12	Total/NA	Water	3010A	
MB 460-888107/1-A	Method Blank	Total/NA	Water	3010A	
LCS 460-888107/2-A	Lab Control Sample	Total/NA	Water	3010A	
460-272718-F-5-G MS	Matrix Spike	Total/NA	Water	3010A	
460-272718-F-5-G MS ^2	Matrix Spike	Total/NA	Water	3010A	
460-272718-F-5-H MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	
460-272718-F-5-H MSD ^2	Matrix Spike Duplicate	Total/NA	Water	3010A	
460-272828-7 MS	GW-11222397-011123-ZB-12	Total/NA	Water	3010A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Metals (Continued)

Prep Batch: 888107 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-7 MSD	GW-11222397-011123-ZB-12	Total/NA	Water	3010A	
460-272718-F-5-F DU	Duplicate	Total/NA	Water	3010A	
460-272718-F-5-F DU ^2	Duplicate	Total/NA	Water	3010A	

Prep Batch: 888193

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-6	RB-11222397-011123-ZB-11	Total/NA	Water	3010A	
MB 460-888193/1-A	Method Blank	Total/NA	Water	3010A	
LCS 460-888193/2-A	Lab Control Sample	Total/NA	Water	3010A	
460-272828-6 MS	RB-11222397-011123-ZB-11	Total/NA	Water	3010A	
460-272828-6 DU	RB-11222397-011123-ZB-11	Total/NA	Water	3010A	

Analysis Batch: 888513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-7	GW-11222397-011123-ZB-12	Total/NA	Water	6020B	888107
MB 460-888107/1-A	Method Blank	Total/NA	Water	6020B	888107
LCS 460-888107/2-A	Lab Control Sample	Total/NA	Water	6020B	888107
460-272828-7 MS	GW-11222397-011123-ZB-12	Total/NA	Water	6020B	888107
460-272828-7 MSD	GW-11222397-011123-ZB-12	Total/NA	Water	6020B	888107
460-272718-F-5-F DU	Duplicate	Total/NA	Water	6020B	888107

Prep Batch: 888555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-6	RB-11222397-011123-ZB-11	Total/NA	Water	7470A	
460-272828-7	GW-11222397-011123-ZB-12	Total/NA	Water	7470A	
460-272828-8	GW-11222397-011123-MA-13	Total/NA	Water	7470A	
460-272828-9	GW-11222397-011123-MA-14	Total/NA	Water	7470A	
MB 460-888555/1-A	Method Blank	Total/NA	Water	7470A	
LCS 460-888555/2-A	Lab Control Sample	Total/NA	Water	7470A	
460-272828-7 MS	GW-11222397-011123-ZB-12	Total/NA	Water	7470A	
460-272828-7 MSD	GW-11222397-011123-ZB-12	Total/NA	Water	7470A	
460-272828-7 DU	GW-11222397-011123-ZB-12	Total/NA	Water	7470A	

Analysis Batch: 888595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-6	RB-11222397-011123-ZB-11	Total/NA	Water	7470A	888555
460-272828-7	GW-11222397-011123-ZB-12	Total/NA	Water	7470A	888555
460-272828-8	GW-11222397-011123-MA-13	Total/NA	Water	7470A	888555
460-272828-9	GW-11222397-011123-MA-14	Total/NA	Water	7470A	888555
MB 460-888555/1-A	Method Blank	Total/NA	Water	7470A	888555
LCS 460-888555/2-A	Lab Control Sample	Total/NA	Water	7470A	888555
460-272828-7 MS	GW-11222397-011123-ZB-12	Total/NA	Water	7470A	888555
460-272828-7 MSD	GW-11222397-011123-ZB-12	Total/NA	Water	7470A	888555
460-272828-7 DU	GW-11222397-011123-ZB-12	Total/NA	Water	7470A	888555

Prep Batch: 888690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-8	GW-11222397-011123-MA-13	Total/NA	Water	3010A	
MB 460-888690/1-A	Method Blank	Total/NA	Water	3010A	
LCS 460-888690/2-A	Lab Control Sample	Total/NA	Water	3010A	
460-273072-D-4-C MS	Matrix Spike	Total/NA	Water	3010A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Metals (Continued)

Prep Batch: 888690 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-273072-D-4-D MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	
460-273072-D-4-B DU	Duplicate	Total/NA	Water	3010A	

Analysis Batch: 888724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-7	GW-11222397-011123-ZB-12	Total/NA	Water	6020B	888107
MB 460-888107/1-A	Method Blank	Total/NA	Water	6020B	888107
LCS 460-888107/2-A	Lab Control Sample	Total/NA	Water	6020B	888107
460-272718-F-5-G MS	Matrix Spike	Total/NA	Water	6020B	888107
460-272718-F-5-G MS ^2	Matrix Spike	Total/NA	Water	6020B	888107
460-272718-F-5-H MSD	Matrix Spike Duplicate	Total/NA	Water	6020B	888107
460-272718-F-5-H MSD ^2	Matrix Spike Duplicate	Total/NA	Water	6020B	888107
460-272828-7 MS	GW-11222397-011123-ZB-12	Total/NA	Water	6020B	888107
460-272828-7 MSD	GW-11222397-011123-ZB-12	Total/NA	Water	6020B	888107
460-272718-F-5-F DU	Duplicate	Total/NA	Water	6020B	888107
460-272718-F-5-F DU ^2	Duplicate	Total/NA	Water	6020B	888107

Analysis Batch: 888909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-6	RB-11222397-011123-ZB-11	Total/NA	Water	6020B	888193
460-272828-8	GW-11222397-011123-MA-13	Total/NA	Water	6020B	888690
MB 460-888193/1-A	Method Blank	Total/NA	Water	6020B	888193
MB 460-888690/1-A	Method Blank	Total/NA	Water	6020B	888690
LCS 460-888193/2-A	Lab Control Sample	Total/NA	Water	6020B	888193
LCS 460-888690/2-A	Lab Control Sample	Total/NA	Water	6020B	888690
460-272828-6 MS	RB-11222397-011123-ZB-11	Total/NA	Water	6020B	888193
460-273072-D-4-C MS	Matrix Spike	Total/NA	Water	6020B	888690
460-273072-D-4-D MSD	Matrix Spike Duplicate	Total/NA	Water	6020B	888690
460-272828-6 DU	RB-11222397-011123-ZB-11	Total/NA	Water	6020B	888193
460-273072-D-4-B DU	Duplicate	Total/NA	Water	6020B	888690

Prep Batch: 889158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-8	GW-11222397-011123-MA-13	Dissolved	Water	3010A	
460-272828-9	GW-11222397-011123-MA-14	Dissolved	Water	3010A	
MB 460-889158/1-A	Method Blank	Total/NA	Water	3010A	
LCS 460-889158/2-A	Lab Control Sample	Total/NA	Water	3010A	
460-272921-E-1-C MS	Matrix Spike	Dissolved	Water	3010A	
460-272921-E-1-B DU	Duplicate	Dissolved	Water	3010A	

Analysis Batch: 889348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 460-889158/1-A	Method Blank	Total/NA	Water	6020B	889158
LCS 460-889158/2-A	Lab Control Sample	Total/NA	Water	6020B	889158
460-272921-E-1-C MS	Matrix Spike	Dissolved	Water	6020B	889158
460-272921-E-1-B DU	Duplicate	Dissolved	Water	6020B	889158

Analysis Batch: 889381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-8	GW-11222397-011123-MA-13	Dissolved	Water	6020B	889158
460-272828-9	GW-11222397-011123-MA-14	Dissolved	Water	6020B	889158

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QC Association Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Metals

Prep Batch: 889577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-9	GW-11222397-011123-MA-14	Total/NA	Water	3010A	
MB 460-889577/1-A	Method Blank	Total/NA	Water	3010A	
LCS 460-889577/2-A	Lab Control Sample	Total/NA	Water	3010A	
460-273069-G-10-C MS	Matrix Spike	Total/NA	Water	3010A	
460-273069-G-10-B DU	Duplicate	Total/NA	Water	3010A	

Analysis Batch: 889814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-9	GW-11222397-011123-MA-14	Total/NA	Water	6020B	889577
MB 460-889577/1-A	Method Blank	Total/NA	Water	6020B	889577
LCS 460-889577/2-A	Lab Control Sample	Total/NA	Water	6020B	889577
460-273069-G-10-C MS	Matrix Spike	Total/NA	Water	6020B	889577
460-273069-G-10-B DU	Duplicate	Total/NA	Water	6020B	889577

Analysis Batch: 890039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 460-889577/1-A	Method Blank	Total/NA	Water	6020B	889577
LCS 460-889577/2-A	Lab Control Sample	Total/NA	Water	6020B	889577
460-273069-G-10-C MS	Matrix Spike	Total/NA	Water	6020B	889577
460-273069-G-10-B DU	Duplicate	Total/NA	Water	6020B	889577

Analysis Batch: 890148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272828-9	GW-11222397-011123-MA-14	Total/NA	Water	6020B	889577

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: RB-11222397-011123-ZB-06

Lab Sample ID: 460-272828-1

Date Collected: 01/11/23 09:30

Matrix: Water

Date Received: 01/11/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	888265	KLB	EET EDI	01/16/23 12:51

Client Sample ID: GW-11222397-011123-ZB-07

Lab Sample ID: 460-272828-2

Date Collected: 01/11/23 10:30

Matrix: Water

Date Received: 01/11/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	888265	KLB	EET EDI	01/16/23 15:18

Client Sample ID: GW-11222397-011123-MA-08

Lab Sample ID: 460-272828-3

Date Collected: 01/11/23 12:30

Matrix: Water

Date Received: 01/11/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	888265	KLB	EET EDI	01/16/23 15:39

Client Sample ID: GW-11222397-011123-MA-09

Lab Sample ID: 460-272828-4

Date Collected: 01/11/23 12:45

Matrix: Water

Date Received: 01/11/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	888265	KLB	EET EDI	01/16/23 16:00

Client Sample ID: GW-11222397-011123-ZB-10

Lab Sample ID: 460-272828-5

Date Collected: 01/11/23 12:30

Matrix: Water

Date Received: 01/11/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	888265	KLB	EET EDI	01/16/23 14:36

Client Sample ID: RB-11222397-011123-ZB-11

Lab Sample ID: 460-272828-6

Date Collected: 01/11/23 13:20

Matrix: Water

Date Received: 01/11/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3010A			887906	VAD	EET EDI	01/12/23 20:17
Dissolved	Analysis	6020B		1	887778	MDC	EET EDI	01/12/23 21:44
Total/NA	Prep	3010A			888193	NNW	EET EDI	01/15/23 10:19
Total/NA	Analysis	6020B		1	888909	MDC	EET EDI	01/20/23 00:38
Total/NA	Prep	7470A			888555	RBS	EET EDI	01/17/23 14:32
Total/NA	Analysis	7470A		1	888595	RBS	EET EDI	01/17/23 15:55

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: GW-11222397-011123-ZB-12

Lab Sample ID: 460-272828-7

Date Collected: 01/11/23 14:05

Matrix: Water

Date Received: 01/11/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3010A			887906	VAD	EET EDI	01/12/23 20:17
Dissolved	Analysis	6020B		1	887778	MDC	EET EDI	01/12/23 21:37
Total/NA	Prep	3010A			888107	GAE	EET EDI	01/13/23 19:05
Total/NA	Analysis	6020B		1	888513	MDC	EET EDI	01/18/23 01:53
Total/NA	Prep	3010A			888107	GAE	EET EDI	01/13/23 19:05
Total/NA	Analysis	6020B		1	888724	CDC	EET EDI	01/18/23 12:07
Total/NA	Prep	7470A			888555	RBS	EET EDI	01/17/23 14:32
Total/NA	Analysis	7470A		1	888595	RBS	EET EDI	01/17/23 15:08

Client Sample ID: GW-11222397-011123-MA-13

Lab Sample ID: 460-272828-8

Date Collected: 01/11/23 14:00

Matrix: Water

Date Received: 01/11/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	888265	KLB	EET EDI	01/16/23 14:57
Dissolved	Prep	3010A			889158	VAD	EET EDI	01/20/23 21:58
Dissolved	Analysis	6020B		1	889381	MDC	EET EDI	01/23/23 20:15
Total/NA	Prep	3010A			888690	VAP	EET EDI	01/18/23 09:37
Total/NA	Analysis	6020B		1	888909	MDC	EET EDI	01/19/23 18:28
Total/NA	Prep	7470A			888555	RBS	EET EDI	01/17/23 14:32
Total/NA	Analysis	7470A		1	888595	RBS	EET EDI	01/17/23 15:57

Client Sample ID: GW-11222397-011123-MA-14

Lab Sample ID: 460-272828-9

Date Collected: 01/11/23 14:15

Matrix: Water

Date Received: 01/11/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3010A			889158	VAD	EET EDI	01/20/23 21:58
Dissolved	Analysis	6020B		1	889381	MDC	EET EDI	01/23/23 20:18
Total/NA	Prep	3010A			889577	VAP	EET EDI	01/24/23 13:23
Total/NA	Analysis	6020B		1	890148	MDC	EET EDI	01/27/23 18:49
Total/NA	Prep	3010A			889577	VAP	EET EDI	01/24/23 13:23
Total/NA	Analysis	6020B		1	889814	CDC	EET EDI	01/25/23 21:17
Total/NA	Prep	7470A			888555	RBS	EET EDI	01/17/23 14:32
Total/NA	Analysis	7470A		1	888595	RBS	EET EDI	01/17/23 15:58

Client Sample ID: TRIP BLANK

Lab Sample ID: 460-272828-10

Date Collected: 01/11/23 14:15

Matrix: Water

Date Received: 01/11/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	888607	MZS	EET EDI	01/18/23 00:12

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Lab Chronicle

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Client Sample ID: TRIP BLANK
Date Collected: 01/11/23 14:15
Date Received: 01/11/23 20:00

Lab Sample ID: 460-272828-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	888265	KLB	EET EDI	01/16/23 11:48

Laboratory References:
EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

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Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Laboratory: Eurofins Edison

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	01-01-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3010A	Water	Aluminum
6020B	3010A	Water	Antimony
6020B	3010A	Water	Arsenic
6020B	3010A	Water	Barium
6020B	3010A	Water	Beryllium
6020B	3010A	Water	Cadmium
6020B	3010A	Water	Calcium
6020B	3010A	Water	Chromium
6020B	3010A	Water	Cobalt
6020B	3010A	Water	Copper
6020B	3010A	Water	Iron
6020B	3010A	Water	Lead
6020B	3010A	Water	Magnesium
6020B	3010A	Water	Manganese
6020B	3010A	Water	Manganese, Dissolved
6020B	3010A	Water	Nickel
6020B	3010A	Water	Potassium
6020B	3010A	Water	Selenium
6020B	3010A	Water	Silver
6020B	3010A	Water	Sodium
6020B	3010A	Water	Thallium
6020B	3010A	Water	Vanadium
6020B	3010A	Water	Zinc
7470A	7470A	Water	Mercury
8260B		Water	1,1,1-Trichloroethane
8260B		Water	1,1,2,2-Tetrachloroethane
8260B		Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8260B		Water	1,1,2-Trichloroethane
8260B		Water	1,1-Dichloroethane
8260B		Water	1,1-Dichloroethene
8260B		Water	1,2,4-Trichlorobenzene
8260B		Water	1,2,4-Trimethylbenzene
8260B		Water	1,2-Dibromo-3-Chloropropane
8260B		Water	1,2-Dibromoethane
8260B		Water	1,2-Dichlorobenzene
8260B		Water	1,2-Dichloroethane
8260B		Water	1,2-Dichloropropane
8260B		Water	1,3-Dichlorobenzene
8260B		Water	1,4-Dichlorobenzene
8260B		Water	2-Butanone (MEK)
8260B		Water	2-Hexanone
8260B		Water	4-Methyl-2-pentanone (MIBK)
8260B		Water	Acetone
8260B		Water	Benzene
8260B		Water	Bromodichloromethane

Eurofins Edison

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Laboratory: Eurofins Edison (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Bromoform
8260B		Water	Bromomethane
8260B		Water	Carbon disulfide
8260B		Water	Carbon tetrachloride
8260B		Water	Chlorobenzene
8260B		Water	Chloroethane
8260B		Water	Chloroform
8260B		Water	Chloromethane
8260B		Water	cis-1,2-Dichloroethene
8260B		Water	cis-1,3-Dichloropropene
8260B		Water	Cyclohexane
8260B		Water	Dibromochloromethane
8260B		Water	Dichlorodifluoromethane
8260B		Water	Ethylbenzene
8260B		Water	Isopropylbenzene
8260B		Water	Methyl acetate
8260B		Water	Methyl tert-butyl ether
8260B		Water	Methylcyclohexane
8260B		Water	Methylene Chloride
8260B		Water	Styrene
8260B		Water	Tetrachloroethene
8260B		Water	Toluene
8260B		Water	trans-1,2-Dichloroethene
8260B		Water	trans-1,3-Dichloropropene
8260B		Water	Trichloroethene
8260B		Water	Trichlorofluoromethane
8260B		Water	Vinyl chloride
8260B		Water	Xylenes, Total

Method Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organics (GC/MS)	SW846	EET EDI
6020B	Metals (ICP/MS)	SW846	EET EDI
7470A	Mercury (CVAA)	SW846	EET EDI
3010A	Preparation, Total Metals	SW846	EET EDI
5030B	Purge and Trap	SW846	EET EDI
7470A	Preparation, Mercury	SW846	EET EDI

Protocol References:

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

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: GHD Services Inc.
Project/Site: 11222397- RACER

Job ID: 460-272828-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
460-272828-1	RB-11222397-011123-ZB-06	Water	01/11/23 09:30	01/11/23 20:00
460-272828-2	GW-11222397-011123-ZB-07	Water	01/11/23 10:30	01/11/23 20:00
460-272828-3	GW-11222397-011123-MA-08	Water	01/11/23 12:30	01/11/23 20:00
460-272828-4	GW-11222397-011123-MA-09	Water	01/11/23 12:45	01/11/23 20:00
460-272828-5	GW-11222397-011123-ZB-10	Water	01/11/23 12:30	01/11/23 20:00
460-272828-6	RB-11222397-011123-ZB-11	Water	01/11/23 13:20	01/11/23 20:00
460-272828-7	GW-11222397-011123-ZB-12	Water	01/11/23 14:05	01/11/23 20:00
460-272828-8	GW-11222397-011123-MA-13	Water	01/11/23 14:00	01/11/23 20:00
460-272828-9	GW-11222397-011123-MA-14	Water	01/11/23 14:15	01/11/23 20:00
460-272828-10	TRIP BLANK	Water	01/11/23 14:15	01/11/23 20:00
460-272828-11	TRIP BLANK	Water	01/11/23 14:15	01/11/23 20:00

Address: **South Jersey Service Center**
Rancocas, NJ 08053-372

Chain of Custody Record

614810



Environment Testing
America

TAL-8210

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact		Project Manager: FRANK R.		Site Contact:		Date: 1/11/23		COC No:	
Company Name: GHD SERVICES		Tel/Email: 215-853-3231		Lab Contact:		Carrier: EUROFINS		1 of 1 COCs	
Address: 410 Eagleview Blvd		Analysis Turnaround Time		Perform MS / MSD (Y / N)		Sampler: 2. BOSTON - 215-776-0127		For Lab Use Only:	
City/State/Zip: Exton, PA		☐ CALENDAR DAYS ☐ WORKING DAYS		Filtered Sample (Y / N)		Walk-in Client:		amplifying:	
Phone: 215-776-0127		TAT if different from Below 5 Working Days		8260 VOC		Barcode		SDG No.: 272828	
Fax:		2 weeks		6020-DSS MW Field Filtered		460-272828 Chain of Custody			
Project Name: Rancocas 11222397		1 week		8260 VOC					
Site:		2 days		6020-DSS MW Field Filtered					
P O #		1 day		8260 VOC					

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes:
RB-11222397-011123-ZB-06	1/11/23	0930	G	RB	3	1
GW-11222397-011123-ZB-07		1030	G	GW	9	2
GW-11222397-011123-MA-08		1230	G	GW	3	3
GW-11222397-011123-MA-09		1245	G	GW	3	4
GW-11222397-011123-ZB-10		1230	G	GW	3	5
RB-11222397-011123-ZB-11		1320	G	RB	2	6
GW-11222397-011123-ZB-12		1405	G	GW	6	7
GW-11222397-011123-ZB-13		1400	G	GW	5	8
GW-11222397-011123-MA-14		1415	G	GW	2	9
TRIP BLANK	1/5/22	-	-	FB	2	10
TRIP BLANK	1/5/22	-	-	FB	2	11

Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Special Instructions/QC Requirements & Comments: **MS/MSD taken @ ZB-07 & ZB-12**

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for Months

Custody Seal No.:	Cooler Temp. (°C): Observed	Corr'd:	Therm ID No.:
Relinquished by: Z. BOSTON	Received by: EUROFINS	Company: EUROFINS	Date/Time: 1/11/23 1445
Relinquished by: Frank R.	Received by: EUROFINS	Company: EUROFINS	Date/Time: 1/11/23 1754
Relinquished by: Frank R.	Received by: EUROFINS	Company: EUROFINS	Date/Time: 1/11/23 2000

1/5/1.4 IR 10

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Job Number: 272828

Number of Coolers:

IR Gun #

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	1.5 °C	1.4 °C	Cooler #4:	°C	°C
Cooler #2:		°C	Cooler #5:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C
			Cooler #7:	°C	°C
			Cooler #8:	°C	°C
			Cooler #9:	°C	°C

[illegible]

If pH adjustments are required record the information below:

Sample No(s). adjusted:

Preservative Name/Conc.:

Lot # of Preservative(s):

Expiration Date:

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Initials:

Date: 1/16/23

EDS-WI-038, Rev 4, 06/09/2014

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 460-272828-1

Login Number: 272828

List Number: 1

Creator: Arana, Jeanette X

List Source: Eurofins Edison

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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 containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Michelle Kukta
GHD Services Inc.
2055 Niagara Falls Blvd., Suite 3
Niagara Falls, New York 14304

Generated 1/24/2023 4:14:39 PM

JOB DESCRIPTION

Racer 11222397

JOB NUMBER

460-272929-1

Eurofins Edison

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing Northeast, LLC Edison and its client. All questions regarding this report should be directed to the Eurofins Environment Testing Northeast, LLC Edison Project Manager or designee who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northeast, LLC Project Manager.

Authorization



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Authorized for release by
Elizabeth Flannery, Project Manager I
Elizabeth.Flannery@et.eurofinsus.com
(732)549-3900

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	7
Client Sample Results	8
QC Sample Results	10
QC Association Summary	14
Lab Chronicle	16
Certification Summary	17
Method Summary	18
Sample Summary	19
Chain of Custody	20
Receipt Checklists	22



Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

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

Case Narrative

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Job ID: 460-272929-1

Laboratory: Eurofins Edison

Narrative

CASE NARRATIVE

Client: GHD Services Inc.

Project: Racer 11222397

Report Number: 460-272929-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 1/12/2023 8:00 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 1.6° C.

Receipt Exceptions

The following sample was canceled by the client on 1/19/23: TRIP BLANK (460-272929-3).

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

METALS - DISSOLVED)(ICP/MS)

Samples GW - 11222397- 011223 -MA - 15 (460-272929-1) and GW - 11222397- 011223 - MA - 16 (460-272929-2) were analyzed for Metals - Dissolved)(ICP/MS) in accordance with EPA SW-846 Method 6020B - Dissolved. The samples were prepared and analyzed on 01/23/2023.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

No other difficulties were encountered during the metals, diss. analysis.

All other quality control parameters were within the acceptance limits.

METALS - TOTAL (ICP/MS)

Samples GW - 11222397- 011223 -MA - 15 (460-272929-1) and GW - 11222397- 011223 - MA - 16 (460-272929-2) were analyzed for Metals - Total (ICP/MS) in accordance with EPA SW-846 Method 6020B - Total. The samples were prepared on 01/15/2023 and analyzed on 01/20/2023 and 01/23/2023.

Case Narrative

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Job ID: 460-272929-1 (Continued)

Laboratory: Eurofins Edison (Continued)

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

MERCURY

Samples GW - 11222397- 011223 -MA - 15 (460-272929-1) and GW - 11222397- 011223 - MA - 16 (460-272929-2) were analyzed for mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 01/18/2023.

No difficulties were encountered during the Hg analysis.

All quality control parameters were within the acceptance limits.

Detection Summary

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Client Sample ID: GW - 11222397- 011223 -MA - 15

Lab Sample ID: 460-272929-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	1040		40.0	19.5	ug/L	1		6020B	Total/NA
Barium	264		4.0	0.91	ug/L	1		6020B	Total/NA
Calcium	36600		500	53.6	ug/L	1		6020B	Total/NA
Chromium	2.6	J	4.0	2.5	ug/L	1		6020B	Total/NA
Cobalt	17.7		4.0	0.71	ug/L	1		6020B	Total/NA
Iron	833		120	58.2	ug/L	1		6020B	Total/NA
Lead	0.84	J	1.2	0.84	ug/L	1		6020B	Total/NA
Magnesium	31400		200	46.9	ug/L	1		6020B	Total/NA
Manganese	4720		8.0	1.5	ug/L	1		6020B	Total/NA
Nickel	3.4	J	4.0	0.91	ug/L	1		6020B	Total/NA
Potassium	4550		200	112	ug/L	1		6020B	Total/NA
Sodium	74300		500	163	ug/L	1		6020B	Total/NA
Vanadium	3.8	J	4.0	0.68	ug/L	1		6020B	Total/NA
Manganese, Dissolved	4850		8.0	1.5	ug/L	1		6020B	Dissolved

Client Sample ID: GW - 11222397- 011223 - MA - 16

Lab Sample ID: 460-272929-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	1200		40.0	19.5	ug/L	1		6020B	Total/NA
Antimony	1.9	J	2.0	0.76	ug/L	1		6020B	Total/NA
Arsenic	1.6	J	2.0	0.89	ug/L	1		6020B	Total/NA
Barium	55.0		4.0	0.91	ug/L	1		6020B	Total/NA
Calcium	90800		500	53.6	ug/L	1		6020B	Total/NA
Chromium	7.3		4.0	2.5	ug/L	1		6020B	Total/NA
Cobalt	2.8	J	4.0	0.71	ug/L	1		6020B	Total/NA
Copper	16.9		4.0	2.5	ug/L	1		6020B	Total/NA
Iron	4170		120	58.2	ug/L	1		6020B	Total/NA
Lead	11.9		1.2	0.84	ug/L	1		6020B	Total/NA
Magnesium	33800		200	46.9	ug/L	1		6020B	Total/NA
Manganese	125		8.0	1.5	ug/L	1		6020B	Total/NA
Nickel	6.0		4.0	0.91	ug/L	1		6020B	Total/NA
Potassium	35100		200	112	ug/L	1		6020B	Total/NA
Sodium	49900		500	163	ug/L	1		6020B	Total/NA
Vanadium	6.7		4.0	0.68	ug/L	1		6020B	Total/NA
Zinc	20.8		16.0	6.5	ug/L	1		6020B	Total/NA
Manganese, Dissolved	67.0		8.0	1.5	ug/L	1		6020B	Dissolved
Mercury	0.10	J	0.20	0.091	ug/L	1		7470A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Edison

Client Sample Results

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Client Sample ID: GW - 11222397- 011223 -MA - 15

Lab Sample ID: 460-272929-1

Date Collected: 01/12/23 10:40

Matrix: Water

Date Received: 01/12/23 20:00

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1040		40.0	19.5	ug/L		01/15/23 10:19	01/20/23 01:43	1
Antimony	0.76	U	2.0	0.76	ug/L		01/15/23 10:19	01/20/23 01:43	1
Arsenic	0.89	U	2.0	0.89	ug/L		01/15/23 10:19	01/20/23 01:43	1
Barium	264		4.0	0.91	ug/L		01/15/23 10:19	01/20/23 01:43	1
Beryllium	0.13	U	0.80	0.13	ug/L		01/15/23 10:19	01/20/23 01:43	1
Cadmium	0.39	U	2.0	0.39	ug/L		01/15/23 10:19	01/20/23 01:43	1
Calcium	36600		500	53.6	ug/L		01/15/23 10:19	01/23/23 12:50	1
Chromium	2.6	J	4.0	2.5	ug/L		01/15/23 10:19	01/20/23 01:43	1
Cobalt	17.7		4.0	0.71	ug/L		01/15/23 10:19	01/20/23 01:43	1
Copper	2.5	U	4.0	2.5	ug/L		01/15/23 10:19	01/20/23 01:43	1
Iron	833		120	58.2	ug/L		01/15/23 10:19	01/20/23 01:43	1
Lead	0.84	J	1.2	0.84	ug/L		01/15/23 10:19	01/20/23 01:43	1
Magnesium	31400		200	46.9	ug/L		01/15/23 10:19	01/20/23 01:43	1
Manganese	4720		8.0	1.5	ug/L		01/15/23 10:19	01/20/23 01:43	1
Nickel	3.4	J	4.0	0.91	ug/L		01/15/23 10:19	01/20/23 01:43	1
Potassium	4550		200	112	ug/L		01/15/23 10:19	01/20/23 01:43	1
Selenium	0.59	U	2.5	0.59	ug/L		01/15/23 10:19	01/20/23 01:43	1
Silver	0.29	U	2.0	0.29	ug/L		01/15/23 10:19	01/20/23 01:43	1
Sodium	74300		500	163	ug/L		01/15/23 10:19	01/20/23 01:43	1
Thallium	0.21	U	0.80	0.21	ug/L		01/15/23 10:19	01/20/23 01:43	1
Vanadium	3.8	J	4.0	0.68	ug/L		01/15/23 10:19	01/20/23 01:43	1
Zinc	6.5	U	16.0	6.5	ug/L		01/15/23 10:19	01/20/23 01:43	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese, Dissolved	4850		8.0	1.5	ug/L		01/23/23 21:20	01/23/23 22:31	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.091	U	0.20	0.091	ug/L		01/18/23 12:23	01/18/23 14:50	1

Client Sample ID: GW - 11222397- 011223 - MA - 16

Lab Sample ID: 460-272929-2

Date Collected: 01/12/23 11:45

Matrix: Water

Date Received: 01/12/23 20:00

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1200		40.0	19.5	ug/L		01/15/23 10:19	01/20/23 01:46	1
Antimony	1.9	J	2.0	0.76	ug/L		01/15/23 10:19	01/20/23 01:46	1
Arsenic	1.6	J	2.0	0.89	ug/L		01/15/23 10:19	01/20/23 01:46	1
Barium	55.0		4.0	0.91	ug/L		01/15/23 10:19	01/20/23 01:46	1
Beryllium	0.13	U	0.80	0.13	ug/L		01/15/23 10:19	01/20/23 01:46	1
Cadmium	0.39	U	2.0	0.39	ug/L		01/15/23 10:19	01/20/23 01:46	1
Calcium	90800		500	53.6	ug/L		01/15/23 10:19	01/23/23 12:52	1
Chromium	7.3		4.0	2.5	ug/L		01/15/23 10:19	01/20/23 01:46	1
Cobalt	2.8	J	4.0	0.71	ug/L		01/15/23 10:19	01/20/23 01:46	1
Copper	16.9		4.0	2.5	ug/L		01/15/23 10:19	01/20/23 01:46	1
Iron	4170		120	58.2	ug/L		01/15/23 10:19	01/20/23 01:46	1
Lead	11.9		1.2	0.84	ug/L		01/15/23 10:19	01/20/23 01:46	1
Magnesium	33800		200	46.9	ug/L		01/15/23 10:19	01/20/23 01:46	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Client Sample ID: GW - 11222397- 011223 - MA - 16

Lab Sample ID: 460-272929-2

Date Collected: 01/12/23 11:45

Matrix: Water

Date Received: 01/12/23 20:00

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	125		8.0	1.5	ug/L		01/15/23 10:19	01/20/23 01:46	1
Nickel	6.0		4.0	0.91	ug/L		01/15/23 10:19	01/20/23 01:46	1
Potassium	35100		200	112	ug/L		01/15/23 10:19	01/20/23 01:46	1
Selenium	0.59	U	2.5	0.59	ug/L		01/15/23 10:19	01/20/23 01:46	1
Silver	0.29	U	2.0	0.29	ug/L		01/15/23 10:19	01/20/23 01:46	1
Sodium	49900		500	163	ug/L		01/15/23 10:19	01/20/23 01:46	1
Thallium	0.21	U	0.80	0.21	ug/L		01/15/23 10:19	01/20/23 01:46	1
Vanadium	6.7		4.0	0.68	ug/L		01/15/23 10:19	01/20/23 01:46	1
Zinc	20.8		16.0	6.5	ug/L		01/15/23 10:19	01/20/23 01:46	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese, Dissolved	67.0		8.0	1.5	ug/L		01/23/23 21:20	01/23/23 22:36	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.10	J	0.20	0.091	ug/L		01/18/23 12:23	01/18/23 14:51	1

QC Sample Results

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 460-888193/1-A
Matrix: Water
Analysis Batch: 888909

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 888193

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	19.5	U	40.0	19.5	ug/L		01/15/23 10:19	01/20/23 00:26	1
Antimony	0.76	U	2.0	0.76	ug/L		01/15/23 10:19	01/20/23 00:26	1
Arsenic	0.89	U	2.0	0.89	ug/L		01/15/23 10:19	01/20/23 00:26	1
Barium	0.91	U	4.0	0.91	ug/L		01/15/23 10:19	01/20/23 00:26	1
Beryllium	0.13	U	0.80	0.13	ug/L		01/15/23 10:19	01/20/23 00:26	1
Cadmium	0.39	U	2.0	0.39	ug/L		01/15/23 10:19	01/20/23 00:26	1
Calcium	53.6	U	500	53.6	ug/L		01/15/23 10:19	01/20/23 00:26	1
Chromium	2.5	U	4.0	2.5	ug/L		01/15/23 10:19	01/20/23 00:26	1
Cobalt	0.71	U	4.0	0.71	ug/L		01/15/23 10:19	01/20/23 00:26	1
Copper	2.5	U	4.0	2.5	ug/L		01/15/23 10:19	01/20/23 00:26	1
Iron	58.2	U	120	58.2	ug/L		01/15/23 10:19	01/20/23 00:26	1
Lead	0.84	U	1.2	0.84	ug/L		01/15/23 10:19	01/20/23 00:26	1
Magnesium	46.9	U	200	46.9	ug/L		01/15/23 10:19	01/20/23 00:26	1
Manganese	1.5	U	8.0	1.5	ug/L		01/15/23 10:19	01/20/23 00:26	1
Nickel	0.91	U	4.0	0.91	ug/L		01/15/23 10:19	01/20/23 00:26	1
Potassium	112	U	200	112	ug/L		01/15/23 10:19	01/20/23 00:26	1
Selenium	0.59	U	2.5	0.59	ug/L		01/15/23 10:19	01/20/23 00:26	1
Silver	0.29	U	2.0	0.29	ug/L		01/15/23 10:19	01/20/23 00:26	1
Sodium	163	U	500	163	ug/L		01/15/23 10:19	01/20/23 00:26	1
Thallium	0.21	U	0.80	0.21	ug/L		01/15/23 10:19	01/20/23 00:26	1
Vanadium	0.68	U	4.0	0.68	ug/L		01/15/23 10:19	01/20/23 00:26	1
Zinc	6.5	U	16.0	6.5	ug/L		01/15/23 10:19	01/20/23 00:26	1

Lab Sample ID: LCS 460-888193/2-A
Matrix: Water
Analysis Batch: 888909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 888193

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	2500	2502		ug/L		100	80 - 120
Antimony	25.0	23.19		ug/L		93	80 - 120
Arsenic	50.0	51.53		ug/L		103	80 - 120
Barium	50.0	54.29		ug/L		109	80 - 120
Beryllium	25.0	22.94		ug/L		92	80 - 120
Cadmium	25.0	24.17		ug/L		97	80 - 120
Calcium	2500	2647		ug/L		106	80 - 120
Chromium	50.0	50.17		ug/L		100	80 - 120
Cobalt	25.0	24.75		ug/L		99	80 - 120
Copper	50.0	50.11		ug/L		100	80 - 120
Iron	2500	2491		ug/L		100	80 - 120
Lead	25.0	24.22		ug/L		97	80 - 120
Magnesium	2500	2385		ug/L		95	80 - 120
Manganese	250	252.7		ug/L		101	80 - 120
Nickel	50.0	47.69		ug/L		95	80 - 120
Potassium	2500	2567		ug/L		103	80 - 120
Selenium	50.0	47.48		ug/L		95	80 - 120
Silver	25.0	23.34		ug/L		93	80 - 120
Sodium	2500	2429		ug/L		97	80 - 120
Thallium	20.0	19.51		ug/L		98	80 - 120
Vanadium	50.0	48.31		ug/L		97	80 - 120

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 460-888193/2-A
Matrix: Water
Analysis Batch: 888909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 888193

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Zinc	250	240.7		ug/L		96	80 - 120

Lab Sample ID: 460-272828-A-6-D MS
Matrix: Water
Analysis Batch: 888909

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 888193

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	19.5	U	2500	2590		ug/L		104	75 - 125
Antimony	0.76	U	25.0	24.48		ug/L		98	75 - 125
Arsenic	0.89	U	50.0	49.79		ug/L		100	75 - 125
Barium	0.91	U	50.0	54.22		ug/L		108	75 - 125
Beryllium	0.13	U	25.0	23.95		ug/L		96	75 - 125
Cadmium	0.39	U	25.0	25.32		ug/L		101	75 - 125
Calcium	53.6	U	2500	2628		ug/L		105	75 - 125
Chromium	2.5	U	50.0	51.24		ug/L		102	75 - 125
Cobalt	0.71	U	25.0	25.18		ug/L		101	75 - 125
Copper	23.3		50.0	73.42		ug/L		100	75 - 125
Iron	58.2	U	2500	2529		ug/L		101	75 - 125
Lead	0.84	U	25.0	25.13		ug/L		101	75 - 125
Magnesium	46.9	U	2500	2440		ug/L		98	75 - 125
Manganese	1.5	U	250	257.4		ug/L		103	75 - 125
Nickel	41.5		50.0	91.00		ug/L		99	75 - 125
Potassium	112	U	2500	2648		ug/L		106	75 - 125
Selenium	0.59	U	50.0	49.89		ug/L		100	75 - 125
Silver	0.29	U	25.0	24.05		ug/L		96	75 - 125
Sodium	163	U	2500	2534		ug/L		101	75 - 125
Thallium	0.21	U	20.0	19.82		ug/L		99	75 - 125
Vanadium	0.68	U	50.0	49.28		ug/L		99	75 - 125
Zinc	6.5	U	250	238.8		ug/L		96	75 - 125

Lab Sample ID: 460-272828-A-6-C DU
Matrix: Water
Analysis Batch: 888909

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 888193

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	19.5	U	19.5	U	ug/L		NC	20
Antimony	0.76	U	0.76	U	ug/L		NC	20
Arsenic	0.89	U	0.89	U	ug/L		NC	20
Barium	0.91	U	0.91	U	ug/L		NC	20
Beryllium	0.13	U	0.13	U	ug/L		NC	20
Cadmium	0.39	U	0.39	U	ug/L		NC	20
Calcium	53.6	U	53.6	U	ug/L		NC	20
Chromium	2.5	U	2.5	U	ug/L		NC	20
Cobalt	0.71	U	0.71	U	ug/L		NC	20
Copper	23.3		24.76		ug/L		6	20
Iron	58.2	U	58.2	U	ug/L		NC	20
Lead	0.84	U	0.84	U	ug/L		NC	20
Magnesium	46.9	U	46.9	U	ug/L		NC	20
Manganese	1.5	U	1.5	U	ug/L		NC	20

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 460-272828-A-6-C DU
Matrix: Water
Analysis Batch: 888909

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 888193

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Nickel	41.5		42.80		ug/L		3	20
Potassium	112	U	112	U	ug/L		NC	20
Selenium	0.59	U	0.59	U	ug/L		NC	20
Silver	0.29	U	0.29	U	ug/L		NC	20
Sodium	163	U	163	U	ug/L		NC	20
Thallium	0.21	U	0.21	U	ug/L		NC	20
Vanadium	0.68	U	0.68	U	ug/L		NC	20
Zinc	6.5	U	6.5	U	ug/L		NC	20

Lab Sample ID: MB 460-889453/4-A
Matrix: Water
Analysis Batch: 889381

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 889453

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese, Dissolved	1.5	U	8.0	1.5	ug/L		01/23/23 21:20	01/23/23 22:19	1

Lab Sample ID: LCS 460-889453/5-A
Matrix: Water
Analysis Batch: 889381

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 889453

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese, Dissolved	250	258.0		ug/L		103	80 - 120

Lab Sample ID: 460-272929-1 MS
Matrix: Water
Analysis Batch: 889381

Client Sample ID: GW - 11222397- 011223 -MA - 15
Prep Type: Dissolved
Prep Batch: 889453

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese, Dissolved	4850		250	5107	4	ug/L		104	75 - 125

Lab Sample ID: 460-272929-1 DU
Matrix: Water
Analysis Batch: 889381

Client Sample ID: GW - 11222397- 011223 -MA - 15
Prep Type: Dissolved
Prep Batch: 889453

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Manganese, Dissolved	4850		4854		ug/L		0.1	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 460-888720/1-A
Matrix: Water
Analysis Batch: 888764

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 888720

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.091	U	0.20	0.091	ug/L		01/18/23 12:23	01/18/23 14:22	1

QC Sample Results

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 460-888720/2-A

Matrix: Water

Analysis Batch: 888764

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 888720

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.00	0.906		ug/L		91	80 - 120

Lab Sample ID: 460-272857-E-4-D MS

Matrix: Water

Analysis Batch: 888764

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 888720

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.091	U	1.00	0.924		ug/L		92	75 - 125

Lab Sample ID: 460-272857-E-4-C DU

Matrix: Water

Analysis Batch: 888764

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 888720

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	0.091	U	0.091	U	ug/L		NC	20

QC Association Summary

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Metals

Prep Batch: 888193

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272929-1	GW - 11222397- 011223 -MA - 15	Total/NA	Water	3010A	
460-272929-2	GW - 11222397- 011223 - MA - 16	Total/NA	Water	3010A	
MB 460-888193/1-A	Method Blank	Total/NA	Water	3010A	
LCS 460-888193/2-A	Lab Control Sample	Total/NA	Water	3010A	
460-272828-A-6-D MS	Matrix Spike	Total/NA	Water	3010A	
460-272828-A-6-C DU	Duplicate	Total/NA	Water	3010A	

Prep Batch: 888720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272929-1	GW - 11222397- 011223 -MA - 15	Total/NA	Water	7470A	
460-272929-2	GW - 11222397- 011223 - MA - 16	Total/NA	Water	7470A	
MB 460-888720/1-A	Method Blank	Total/NA	Water	7470A	
LCS 460-888720/2-A	Lab Control Sample	Total/NA	Water	7470A	
460-272857-E-4-D MS	Matrix Spike	Total/NA	Water	7470A	
460-272857-E-4-C DU	Duplicate	Total/NA	Water	7470A	

Analysis Batch: 888764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272929-1	GW - 11222397- 011223 -MA - 15	Total/NA	Water	7470A	888720
460-272929-2	GW - 11222397- 011223 - MA - 16	Total/NA	Water	7470A	888720
MB 460-888720/1-A	Method Blank	Total/NA	Water	7470A	888720
LCS 460-888720/2-A	Lab Control Sample	Total/NA	Water	7470A	888720
460-272857-E-4-D MS	Matrix Spike	Total/NA	Water	7470A	888720
460-272857-E-4-C DU	Duplicate	Total/NA	Water	7470A	888720

Analysis Batch: 888909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272929-1	GW - 11222397- 011223 -MA - 15	Total/NA	Water	6020B	888193
460-272929-2	GW - 11222397- 011223 - MA - 16	Total/NA	Water	6020B	888193
MB 460-888193/1-A	Method Blank	Total/NA	Water	6020B	888193
LCS 460-888193/2-A	Lab Control Sample	Total/NA	Water	6020B	888193
460-272828-A-6-D MS	Matrix Spike	Total/NA	Water	6020B	888193
460-272828-A-6-C DU	Duplicate	Total/NA	Water	6020B	888193

Analysis Batch: 889381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272929-1	GW - 11222397- 011223 -MA - 15	Dissolved	Water	6020B	889453
460-272929-2	GW - 11222397- 011223 - MA - 16	Dissolved	Water	6020B	889453
MB 460-889453/4-A	Method Blank	Total/NA	Water	6020B	889453
LCS 460-889453/5-A	Lab Control Sample	Total/NA	Water	6020B	889453
460-272929-1 MS	GW - 11222397- 011223 -MA - 15	Dissolved	Water	6020B	889453
460-272929-1 DU	GW - 11222397- 011223 -MA - 15	Dissolved	Water	6020B	889453

Analysis Batch: 889399

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272929-1	GW - 11222397- 011223 -MA - 15	Total/NA	Water	6020B	888193
460-272929-2	GW - 11222397- 011223 - MA - 16	Total/NA	Water	6020B	888193

Prep Batch: 889453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272929-1	GW - 11222397- 011223 -MA - 15	Dissolved	Water	3010A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Metals (Continued)

Prep Batch: 889453 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-272929-2	GW - 11222397- 011223 - MA - 16	Dissolved	Water	3010A	
MB 460-889453/4-A	Method Blank	Total/NA	Water	3010A	
LCS 460-889453/5-A	Lab Control Sample	Total/NA	Water	3010A	
460-272929-1 MS	GW - 11222397- 011223 -MA - 15	Dissolved	Water	3010A	
460-272929-1 DU	GW - 11222397- 011223 -MA - 15	Dissolved	Water	3010A	

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Client Sample ID: GW - 11222397- 011223 -MA - 15

Lab Sample ID: 460-272929-1

Date Collected: 01/12/23 10:40

Matrix: Water

Date Received: 01/12/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3010A			889453	VAD	EET EDI	01/23/23 21:20
Dissolved	Analysis	6020B		1	889381	MDC	EET EDI	01/23/23 22:31
Total/NA	Prep	3010A			888193	NNW	EET EDI	01/15/23 10:19
Total/NA	Analysis	6020B		1	889399	YZH	EET EDI	01/23/23 12:50
Total/NA	Prep	3010A			888193	NNW	EET EDI	01/15/23 10:19
Total/NA	Analysis	6020B		1	888909	MDC	EET EDI	01/20/23 01:43
Total/NA	Prep	7470A			888720	RBS	EET EDI	01/18/23 12:23
Total/NA	Analysis	7470A		1	888764	RBS	EET EDI	01/18/23 14:50

Client Sample ID: GW - 11222397- 011223 - MA - 16

Lab Sample ID: 460-272929-2

Date Collected: 01/12/23 11:45

Matrix: Water

Date Received: 01/12/23 20:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3010A			889453	VAD	EET EDI	01/23/23 21:20
Dissolved	Analysis	6020B		1	889381	MDC	EET EDI	01/23/23 22:36
Total/NA	Prep	3010A			888193	NNW	EET EDI	01/15/23 10:19
Total/NA	Analysis	6020B		1	889399	YZH	EET EDI	01/23/23 12:52
Total/NA	Prep	3010A			888193	NNW	EET EDI	01/15/23 10:19
Total/NA	Analysis	6020B		1	888909	MDC	EET EDI	01/20/23 01:46
Total/NA	Prep	7470A			888720	RBS	EET EDI	01/18/23 12:23
Total/NA	Analysis	7470A		1	888764	RBS	EET EDI	01/18/23 14:51

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Laboratory: Eurofins Edison

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	01-01-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3010A	Water	Aluminum
6020B	3010A	Water	Antimony
6020B	3010A	Water	Arsenic
6020B	3010A	Water	Barium
6020B	3010A	Water	Beryllium
6020B	3010A	Water	Cadmium
6020B	3010A	Water	Calcium
6020B	3010A	Water	Chromium
6020B	3010A	Water	Cobalt
6020B	3010A	Water	Copper
6020B	3010A	Water	Iron
6020B	3010A	Water	Lead
6020B	3010A	Water	Magnesium
6020B	3010A	Water	Manganese
6020B	3010A	Water	Manganese, Dissolved
6020B	3010A	Water	Nickel
6020B	3010A	Water	Potassium
6020B	3010A	Water	Selenium
6020B	3010A	Water	Silver
6020B	3010A	Water	Sodium
6020B	3010A	Water	Thallium
6020B	3010A	Water	Vanadium
6020B	3010A	Water	Zinc
7470A	7470A	Water	Mercury

Method Summary

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	EET EDI
7470A	Mercury (CVAA)	SW846	EET EDI
3010A	Preparation, Total Metals	SW846	EET EDI
7470A	Preparation, Mercury	SW846	EET EDI

Protocol References:

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

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: GHD Services Inc.
Project/Site: Racer 11222397

Job ID: 460-272929-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
460-272929-1	GW - 11222397- 011223 -MA - 15	Water	01/12/23 10:40	01/12/23 20:00
460-272929-2	GW - 11222397- 011223 - MA - 16	Water	01/12/23 11:45	01/12/23 20:00

1

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272929

IR Gun #

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	1.7°C	1.6°C	Cooler #4:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C
			Cooler #7:	°C	°C
			Cooler #8:	°C	°C
			Cooler #9:	°C	°C

[illegible]

If pH adjustments are required record the information below:

Sample No(s). adjusted:

Preservative Name/Conc.:

Volume of Preservative used (ml):

Lot # of Preservative(s):

Expiration Date:

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

EDS-WI-038, Rev 4, 06/09/2014

Initials:

Date: 4/12/23

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 460-272929-1

Login Number: 272929

List Source: Eurofins Edison

List Number: 1

Creator: Arana, Jeanette X

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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 containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix D

Data Validation Memo

Technical Memorandum

February 21, 2023

July 7, 2023

To	Francis Ramacciotti	Tel	716-205-1990
Copy to	Matthew Porter; Samantha Sasnow	Email	Michelle.Kukta@ghd.com
From	Michelle Kukta/cs/1	Ref. No.	11222397
Subject	Analytical Results and Full Validation Long-Term Stewardship Plan - Groundwater Sampling Program RACER Trust RACER Wilmington - Former Assembly Plant Wilmington, Delaware January 2023		

1. Introduction

This document details a validation of analytical results for groundwater samples collected in support of the Long-Term Stewardship Plan - Groundwater Sampling Program at the RACER Wilmington - Former Assembly Plant during January 2023. Samples were submitted to Eurofins – Edison located in Edison, New Jersey. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Full Contract Laboratory Program (CLP) equivalent raw data deliverables were provided by the laboratory. Evaluation of the data was based on information obtained from the finished data sheets, raw data, chain of custody forms, calibration data, blank data, recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spike (MS) samples, and field quality assurance/quality control (QA/QC) samples. The assessment of analytical and in house data included checks for data consistency (by observing comparability of duplicate analyses), adherence to accuracy and precision criteria, and transmittal errors.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

- "National Functional Guidelines for Organic Superfund Methods Data Review", United States Environmental Protection Agency (USEPA), 540-R-20-005, November 2020
- "National Functional Guidelines for Inorganic Superfund Methods Data Review", USEPA, 542-R-20-006, November 2020
- "Department of Natural Resources and Environmental Control (DNREC), Remediation Section Guidance for Analytical Data Usability Assessment for Programs Under Hazardous Substance Cleanup Act (HSCA), May 2020

These items will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and/or analyzed within the required holding times.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Gas Chromatography/Mass Spectrometer (GC/MS) and Inductively Coupled Plasma/Mass Spectrometer (ICP/MS) Tuning/Mass Calibration and Instrument Performance Checks

3.1 Organic Analyses

Prior to volatile organic compound (VOC) and semi volatile organic compound (SVOC) analysis, GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, methods require the analysis of specific tuning compounds bromofluorobenzene (BFB) and decafluorotriphenylphosphine (DFTPP), respectively. The resulting spectra must meet the criteria cited in the methods before analysis is initiated. Analysis of the tuning compound must then be repeated every 12 hours throughout sample analysis to ensure the continued optimization of the instrument.

Tuning compounds were analyzed at the required frequency throughout VOC and SVOC analysis periods. All tuning criteria were met indicating that proper optimization of the instrumentation was achieved.

3.2 Inorganic Analyses

To ensure adequate mass resolution, identification, and to some degree, sensitivity, the performance of each ICP/MS instrument used for metals analyses is checked prior to calibration and initiating an analysis sequence through the analysis of a tuning solution.

Instrument performance check data were reviewed. The tuning solution was analyzed at the required frequency throughout the analyses. The results of all instrument performance checks were within the method acceptance criteria, indicating that proper optimization of the instrumentation was achieved.

4. Initial Calibration - Organic Analyses

4.1 GC/MS

To quantify VOCs and SVOCs of interest in samples, calibration of the GC/MS over a specific concentration range must be performed. Initially, a five-point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each analyte over a specific concentration range. Linearity of the calibration curve and instrument sensitivity are evaluated against the following criteria:

- 1) All relative response factors (RRFs) must be greater than or equal to the method acceptance criteria.
- 2) The percent relative standard deviation (%RSD) values must not exceed 20.0 percent or a minimum coefficient of determination (R^2) of 0.99 if linear and quadratic regression calibration curves are used.

The initial calibration data for VOCs and SVOCs were reviewed. All compounds met the above criteria for sensitivity and linearity.

5. Initial Calibration – Inorganic Analyses

Initial calibration of the instruments ensures that they are capable of producing satisfactory quantitative data at the beginning of a series of analyses. For ICP/MS analysis, a calibration blank and at least one standard must be analyzed at each wavelength to establish the analytical curve. For mercury atomic absorption (AA) analyses, a calibration blank and a minimum of five standards must be analyzed to establish the analytical curve and resulting correlation coefficients (R) must be 0.995 or greater.

After the analyses of the calibration curves, an initial calibration verification (ICV) standard must be analyzed to verify the analytical accuracy of the calibration curves. All analyte recoveries from the analyses of the ICVs must be within the following control limits:

Analytical Method	Parameter	Control Limits
ICP/MS	Metals	90 - 110%
Cold Vapor AA	Mercury	85 - 115%

Upon review of the data, it was determined that the calibration curves and ICVs were analyzed at the proper frequencies and that all of the above-specified criteria were met. The laboratory effectively demonstrated that the instrumentation used for metals analyses were properly calibrated prior to sample analysis.

6. Continuing Calibration - Organic Analyses

6.1 GC/MS

To ensure that instrument calibration for VOC and SVOC analyses is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve every 12 hours.

The following criteria were employed to evaluate continuing calibration data:

- 1) All RRF values must be greater than or equal to the method acceptance criteria.
- 2) Percent difference (%D) or %Drift values must not exceed 20.0 percent

Calibration standards were analyzed at the required frequency, and most results met the above criteria for instrument sensitivity and stability. Sample results associated with outlying %D values have been qualified as estimated, see Table 4.

7. Continuing Calibration - Inorganic Analyses

To ensure that instrument calibration is acceptable throughout the sample analysis period, continuing calibration verification (CCV) standards are analyzed on a regular basis. Each CCV is deemed acceptable if all analyte recoveries are within the control limits specified above for the ICVs. If some of the CCV analyte recoveries are outside the control limits, samples analyzed before and after the CCV, up until the previous and proceeding CCV analyses, are affected.

For this study, CCVs were analyzed at the proper frequency. All analyte recoveries reported for the CCVs were within the specified limits.

8. Laboratory Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures. Additionally, initial and continuing calibration blanks (ICBs/CCBs) are routinely analyzed after each ICV/CCV for the inorganic parameters.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

8.1 Organic Analyses

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

8.2 Inorganic Analyses

Upon review of the ICBs, CCBs, and method blanks, it was noted that metal concentrations were observed above the method detection limit (MDL) for various analytes of interest. All investigative samples associated with the low-level blank detections were either non-detect or reported concentrations significantly greater than the blank concentration. These sample results were not impacted by the contamination detected and were reported without qualification.

9. Surrogate Spike Recoveries

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for VOC and SVOC determinations were spiked with the appropriate number of surrogate compounds prior to sample extraction and/or analysis.

Each individual surrogate compound is expected to meet the laboratory control limits. For SVOC analyses, it is generally acceptable for there to be one outlying surrogate in the base/neutral or acid fraction provided that the recovery is at least 10 percent.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries met the above criteria.

10. Internal Standards (IS) Analyses

IS data were evaluated for all VOC, SVOC and metals sample analyses.

10.1 Organics Analyses

To ensure that changes in the GC/MS sensitivity and response do not affect sample analysis results, IS compounds are added to each sample prior to analysis. All results are then calculated as a ratio of the IS responses.

The sample IS results were evaluated against the following criteria:

1. The retention time of the IS must not vary more than ± 30 seconds from the associated calibration standard.
2. IS area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated calibration standard.

All organic IS recoveries and retention times met the above criteria.

10.2 Inorganic Analyses

IS elements were added to all samples prior to metals analysis by ICP/MS. Overall instrument stability and performance for metals analyses were monitored using the IS intensity data. IS recoveries were assessed using control limits of 70-120 percent.

All inorganic IS recoveries were acceptable, demonstrating adequate analytical performance.

11. Laboratory Control Sample Analyses

LCS or LCS/laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

For this study, LCS or LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

11.1 Organic Analyses

The LCS or LCS/LCSD contained all compounds of interest. All LCS recoveries and RPDs were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

11.2 Inorganic Analyses

The LCS contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries were within the control limits, demonstrating acceptable analytical accuracy.

12. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed. If only the MS or MSD recovery was outside of control limits, no qualification of the data was performed based on the acceptable recovery of the companion spike and the acceptable RPD.

MS/MSD analyses were performed as specified in Table 1. The laboratory performed additional site-specific MS/MSD analyses internally.

12.1 Organic Analyses

The MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

12.2 Inorganic Analyses

The MS/MSD samples were spiked with the analytes of interest, and the results were evaluated using the "Guidelines". All assessed percent recoveries and RPD values were within the control limits, demonstrating acceptable analytical accuracy and precision.

13. Duplicate Sample Analyses – Inorganic Analyses

Analytical precision is evaluated based on the analysis of laboratory duplicate samples. For this study, duplicate samples were prepared and analyzed internally by the laboratory. The duplicate results were evaluated per the "Guidelines". All duplicate analyses performed were acceptable, demonstrating acceptable analytical precision.

14. ICP/MS Serial Dilution

The serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. A minimum of 1 per 20 investigative samples or at least 1 per analytical batch must be analyzed at a five-fold dilution. For samples with sufficient analyte concentrations (>50 times the method detection limit), the serial dilution results must agree within 20 percent of the original results.

A serial dilution was performed on each MS/MSD sample. All results met the criteria above.

15. ICP Interference Check Sample Analysis (ICS)

To verify that the laboratory has established proper inter-element and background correction factors, ICSs are analyzed. These samples contain high concentrations of aluminum, calcium, magnesium, and iron and are analyzed at the beginning of each sample analysis period. The ICSs are evaluated against recovery control limits of 80 to 120 percent.

ICS analysis results were evaluated for all samples using the criteria in the "Guidelines". All ICS recoveries and results were acceptable.

16. Field QA/QC Samples

The field QA/QC consisted of two trip blank samples, three rinse blank samples, and three field duplicate sample sets.

16.1 Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, two trip blanks were submitted to the laboratory for VOC analysis. All results were non-detect for the compounds of interest.

16.2 Rinse Blank Sample Analysis

To assess field decontamination procedures, ambient conditions at the site, and cleanliness of sample containers, three rinse blanks were submitted for analysis, as identified in Table 1. Most results were non-detect for the analytes of interest. Concentrations of copper and nickel were detected in one blank. The associated samples with concentrations similar to the rinse blank concentrations were qualified as non-detect, see Table 5.

16.3 Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, three field duplicate sample sets were collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one time the RL value.

Most field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision. One duplicate set displayed variability for various metals and the associated sample results were qualified as estimated, see Table 6.

17. Analyte Reporting

The laboratory reported detected results down to the laboratory's MDL for each analyte. Positive analyte detections less than the RL but greater than the MDL were qualified as estimated (J) in Table 2 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the RL in Table 2.

18. Target Compound Identification

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra were evaluated according to the identification criteria established by the method. The samples identified in Table 1 were reviewed. The organic compounds reported adhered to the specified identification criteria.

19. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable with the specific qualifications noted herein.

Regards,



Michelle Kukta
Project Chemist

Table 1

Sample Collection and Analysis Summary
Long-Term Stewardship Plan - Groundwater Sampling Program
RACER Trust
RACER Wilmington - Former Assembly Plant
Wilmington, Delaware
January 2023

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Parameters				Comments
					VOC	SVOC	Metals	Mercury	
GW - 11222397- 011223-MA-15	MW-113R	Groundwater	01/12/2023	10:40			X	X	
GW - 11222397- 011223-MA-16	MW-109R	Groundwater	01/12/2023	11:45			X	X	
GW-11222397-011023-MA-03	MW-36S	Groundwater	01/10/2023	12:12	X	X			
GW-11222397-011023-MA-04	MW-36S	Groundwater	01/10/2023	12:27		X			FD(GW-11222397-011023-MA-03)
GW-11222397-011023-ZB-02	MW-36D	Groundwater	01/10/2023	11:45	X	X			MS/MSD-P
GW-11222397-011023-ZB-05	MW-50R	Groundwater	01/10/2023	13:00	X	X			
GW-11222397-011123-MA-08	MW-19R	Groundwater	01/11/2023	12:30	X				
GW-11222397-011123-MA-09	MW-19R	Groundwater	01/11/2023	12:45	X				FD(GW-11222397-011123-MA-08)
GW-11222397-011123-MA-13	MW-48R	Groundwater	01/11/2023	14:00	X		X	X	
GW-11222397-011123-MA-14	MW-48R	Groundwater	01/11/2023	14:15			X	X	FD(GW-11222397-011123-MA-13)
GW-11222397-011123-ZB-07	MW-8R	Groundwater	01/11/2023	10:30	X				MS/MSD
GW-11222397-011123-ZB-10	MW-9R	Groundwater	01/11/2023	12:30	X				
GW-11222397-011123-ZB-12	MW-112	Groundwater	01/11/2023	14:05			X	X	MS/MSD-P
RB-11222397-011023-ZB-01	-	Water	01/10/2023	09:30		X			Rinse Blank
RB-11222397-011123-ZB-06	-	Water	01/11/2023	09:30	X				Rinse Blank
RB-11222397-011123-ZB-11	-	Water	01/11/2023	13:20			X	X	Rinse Blank
TRIP BLANK	-	Water	01/11/2023	-	X				Trip Blank
TRIP BLANKS	-	Water	01/10/2023	-	X				Trip Blank

Notes:

FD - Field Duplicate sample of sample in parenthesis

MS/MSD - Matrix Spik/Matrix Spike Duplicate

MS/MSD-P - Matrix Spik/Matrix Spike Duplicate (partial parameters)

VOC - Volatile Organic Compounds

SVOC - Semi-volatile Organic Compounds

"--" - Not applicable

Table 2								
Analytical Results Summary								
Long-Term Stewardship Plant - Groundwater Sampling Program								
RACER Trust								
RACER Wilmington - Former Assembly Plant								
Wilmington, Delaware								
January 2023								
Location ID:	MW-8R	MW-9R	MW-19R	MW-19R	MW-36D	MW-36S	MW-36S	
Sample Name:	GW-11222397-011123-ZB-07	GW-11222397-011123-ZB-10	GW-11222397-011123-MA-08	GW-11222397-011123-MA-09	GW-11222397-011023-ZB-02	GW-11222397-011023-MA-03	GW-11222397-011023-MA-04	
Sample Date:	01/11/2023	01/11/2023	01/11/2023	01/11/2023 Duplicate	01/10/2023	01/10/2023	01/10/2023 Duplicate	
Parameters	Unit							
Volatile Organic Compounds								
1,1,1-Trichloroethane	µg/L	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	--
1,1,2,2-Tetrachloroethane	µg/L	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	--
1,1,2-Trichloroethane	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--
1,1-Dichloroethane	µg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	--
1,1-Dichloroethene	µg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	--
1,2,4-Trichlorobenzene	µg/L	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	--
1,2,4-Trimethylbenzene	µg/L	0.37 U	0.37 U	7.1	7.4	65	160	--
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	0.38 UJ	0.38 UJ	0.38 UJ	0.38 UJ	0.38 UJ	0.38 UJ	--
1,2-Dibromoethane (Ethylene dibromide)	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	--
1,2-Dichlorobenzene	µg/L	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	--
1,2-Dichloroethane	µg/L	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	--
1,2-Dichloropropane	µg/L	0.35 U	0.35 U	0.35 J	0.38 J	0.35 U	0.35 U	--
1,3-Dichlorobenzene	µg/L	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	--
1,4-Dichlorobenzene	µg/L	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	1.9 U	1.9 U	15	14	1.9 U	7.9	--
2-Hexanone	µg/L	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	1.3 U	1.3 U	3.7 J	3.8 J	1.3 U	1.3 U	--
Acetone	µg/L	4.4 U	4.4 U	70	74	9.7	15	--
Benzene	µg/L	0.20 U	0.20 U	0.26 J	0.35 J	37	140	--
Bromodichloromethane	µg/L	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	--
Bromoform	µg/L	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	0.54 U	--
Bromomethane (Methyl bromide)	µg/L	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	--
Carbon disulfide	µg/L	0.82 U	0.82 U	14	17	0.82 U	0.82 U	--
Carbon tetrachloride	µg/L	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	--
Chlorobenzene	µg/L	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	--
Chloroethane	µg/L	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	--
Chloroform (Trichloromethane)	µg/L	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	--
Chloromethane (Methyl chloride)	µg/L	0.40 U	0.40 U	0.40 U	0.40 U	7.9	0.40 U	--
cis-1,2-Dichloroethene	µg/L	0.22 U	0.22 U	1.1	1.1	0.22 U	0.22 U	--
cis-1,3-Dichloropropene	µg/L	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	--
Cyclohexane	µg/L	0.32 U	0.32 U	0.32 U	0.32 U	100	110	--
Dibromochloromethane	µg/L	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	--
Dichlorodifluoromethane (CFC-12)	µg/L	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	--
Ethylbenzene	µg/L	0.30 U	0.30 U	3.3	3.3	210	340	--
Isopropyl benzene	µg/L	0.34 U	0.34 U	0.34 U	0.34 J	17	11	--
Methyl acetate	µg/L	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	--
Methyl cyclohexane	µg/L	0.71 U	0.71 U	0.71 U	0.71 U	52	36	--
Methyl tert butyl ether (MTBE)	µg/L	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.28 J	--
Methylene chloride	µg/L	0.32 U	0.32 U	0.35 J	0.32 U	0.32 U	0.32 U	--
Styrene	µg/L	0.42 U	0.42 U	1.6	1.8	0.42 U	0.42 U	--
Tetrachloroethene	µg/L	0.42 J	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	--
Toluene	µg/L	0.38 U	0.38 U	2.0	2.0	130	49	--
trans-1,2-Dichloroethene	µg/L	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	--
trans-1,3-Dichloropropene	µg/L	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	--
Trichloroethene	µg/L	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	--
Trichlorofluoromethane (CFC-11)	µg/L	2.1	0.33 J	3.4	3.1	0.32 UJ	0.32 UJ	--
Trifluorotrichloroethane (CFC-113)	µg/L	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	--
Vinyl chloride	µg/L	0.17 U	0.17 U	0.45 J	0.39 J	0.17 U	0.17 U	--
Xylenes (total)	µg/L	0.65 U	0.65 U	17	19	480	480	--

Table 2
Analytical Results Summary
Long-Term Stewardship Plant - Groundwater Sampling Program
RACER Trust
RACER Wilmington - Former Assembly Plant
Wilmington, Delaware
January 2023

Location ID:		MW-8R	MW-9R	MW-19R	MW-19R	MW-36D	MW-36S	MW-36S
Sample Name:		GW-11222397-011123-ZB-07	GW-11222397-011123-ZB-10	GW-11222397-011123-MA-08	GW-11222397-011123-MA-09	GW-11222397-011023-ZB-02	GW-11222397-011023-MA-03	GW-11222397-011023-MA-04
Sample Date:		01/11/2023	01/11/2023	01/11/2023	01/11/2023 Duplicate	01/10/2023	01/10/2023	01/10/2023 Duplicate
Parameters	Unit							
Semivolatile Organic Compounds								
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	--	--	--	--	0.63 U	0.63 U	0.63 U
2,4,5-Trichlorophenol	µg/L	--	--	--	--	0.88 U	0.88 U	0.88 U
2,4,6-Trichlorophenol	µg/L	--	--	--	--	0.86 U	0.86 U	0.86 U
2,4-Dichlorophenol	µg/L	--	--	--	--	1.1 U	1.1 U	1.1 U
2,4-Dimethylphenol	µg/L	--	--	--	--	1.7 J	19	16
2,4-Dinitrophenol	µg/L	--	--	--	--	2.6 UJ	2.6 UJ	2.6 UJ
2,4-Dinitrotoluene	µg/L	--	--	--	--	1.0 U	1.0 U	1.0 U
2,6-Dinitrotoluene	µg/L	--	--	--	--	0.83 U	0.83 U	0.83 U
2-Chloronaphthalene	µg/L	--	--	--	--	1.2 U	1.2 U	1.2 U
2-Chlorophenol	µg/L	--	--	--	--	0.38 U	0.38 U	0.38 U
2-Methylnaphthalene	µg/L	--	--	--	--	7.3 J	64	63
2-Methylphenol	µg/L	--	--	--	--	0.67 U	9.6 J	7.8 J
2-Nitroaniline	µg/L	--	--	--	--	0.47 U	0.47 U	0.47 U
2-Nitrophenol	µg/L	--	--	--	--	0.75 U	0.75 U	0.75 U
3,3'-Dichlorobenzidine	µg/L	--	--	--	--	1.4 U	1.4 U	1.4 U
3-Nitroaniline	µg/L	--	--	--	--	1.9 U	1.9 U	1.9 U
4,6-Dinitro-2-methylphenol	µg/L	--	--	--	--	3.0 UJ	3.0 UJ	3.0 UJ
4-Bromophenyl phenyl ether	µg/L	--	--	--	--	0.75 U	0.75 U	0.75 U
4-Chloro-3-methylphenol	µg/L	--	--	--	--	0.58 U	0.58 U	0.58 U
4-Chloroaniline	µg/L	--	--	--	--	1.9 U	1.9 U	1.9 U
4-Chlorophenyl phenyl ether	µg/L	--	--	--	--	1.3 U	1.3 U	1.3 U
4-Methylphenol	µg/L	--	--	--	--	0.75 J	0.65 U	0.65 U
4-Nitroaniline	µg/L	--	--	--	--	1.2 U	1.2 U	1.2 U
4-Nitrophenol	µg/L	--	--	--	--	4.0 U	4.0 U	4.0 U
Acenaphthene	µg/L	--	--	--	--	1.1 U	1.1 U	1.3 J
Acenaphthylene	µg/L	--	--	--	--	0.82 U	0.82 U	0.82 U
Acetophenone	µg/L	--	--	--	--	2.3 U	2.3 U	2.3 U
Anthracene	µg/L	--	--	--	--	1.3 U	1.3 U	1.3 U
Atrazine	µg/L	--	--	--	--	1.3 U	1.3 U	1.3 U
Benzaldehyde	µg/L	--	--	--	--	2.1 UJ	2.1 UJ	2.1 UJ
Benzo(a)anthracene	µg/L	--	--	--	--	0.59 U	0.59 U	0.59 U
Benzo(a)pyrene	µg/L	--	--	--	--	0.41 U	0.41 U	0.41 U
Benzo(b)fluoranthene	µg/L	--	--	--	--	0.68 U	0.68 U	0.68 U
Benzo(g,h,i)perylene	µg/L	--	--	--	--	0.70 U	0.70 U	0.70 U
Benzo(k)fluoranthene	µg/L	--	--	--	--	0.67 U	0.67 U	0.67 U
Biphenyl (1,1-Biphenyl)	µg/L	--	--	--	--	1.2 U	5.0 J	4.6 J
bis(2-Chloroethoxy)methane	µg/L	--	--	--	--	0.59 U	0.59 U	0.59 U
bis(2-Chloroethyl)ether	µg/L	--	--	--	--	0.63 U	0.63 U	0.63 U
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	--	--	--	--	0.80 U	0.80 U	0.80 U
Butyl benzylphthalate (BBP)	µg/L	--	--	--	--	0.85 U	0.85 U	0.85 U
Caprolactam	µg/L	--	--	--	--	2.2 U	2.2 U	2.2 U
Carbazole	µg/L	--	--	--	--	0.68 U	0.68 U	0.68 U
Chrysene	µg/L	--	--	--	--	0.91 U	0.91 U	0.91 U
Di-n-butylphthalate (DBP)	µg/L	--	--	--	--	0.84 U	0.84 U	0.84 U
Di-n-octyl phthalate (DnOP)	µg/L	--	--	--	--	0.75 U	0.75 U	0.75 U
Dibenz(a,h)anthracene	µg/L	--	--	--	--	0.72 U	0.72 U	0.72 U
Dibenzofuran	µg/L	--	--	--	--	1.1 U	1.8 J	1.9 J
Diethyl phthalate	µg/L	--	--	--	--	0.98 U	0.98 U	0.98 U
Dimethyl phthalate	µg/L	--	--	--	--	0.77 U	0.77 U	0.77 U

Table 2

Analytical Results Summary

Long-Term Stewardship Plant - Groundwater Sampling Program

RACER Trust

RACER Wilmington - Former Assembly Plant

Wilmington, Delaware

January 2023

Location ID:	MW-8R	MW-9R	MW-19R	MW-19R	MW-36D	MW-36S	MW-36S
Sample Name:	GW-11222397-011123-ZB-07	GW-11222397-011123-ZB-10	GW-11222397-011123-MA-08	GW-11222397-011123-MA-09	GW-11222397-011023-ZB-02	GW-11222397-011023-MA-03	GW-11222397-011023-MA-04
Sample Date:	01/11/2023	01/11/2023	01/11/2023	01/11/2023 Duplicate	01/10/2023	01/10/2023	01/10/2023 Duplicate
Parameters	Unit						
Semivolatile Organic Compounds							
Fluoranthene	µg/L	--	--	--	0.84 U	0.84 U	0.84 U
Fluorene	µg/L	--	--	--	0.91 U	2.2 J	2.2 J
Hexachlorobenzene	µg/L	--	--	--	0.40 U	0.40 U	0.40 U
Hexachlorobutadiene	µg/L	--	--	--	0.78 U	0.78 U	0.78 U
Hexachlorocyclopentadiene	µg/L	--	--	--	3.6 U	3.6 U	3.6 U
Hexachloroethane	µg/L	--	--	--	0.80 U	0.80 U	0.80 U
Indeno(1,2,3-cd)pyrene	µg/L	--	--	--	0.94 U	0.94 U	0.94 U
Isophorone	µg/L	--	--	--	0.80 U	0.80 U	0.80 U
N-Nitrosodi-n-propylamine	µg/L	--	--	--	0.43 U	0.43 U	0.43 U
N-Nitrosodiphenylamine	µg/L	--	--	--	0.89 U	0.89 U	0.89 U
Naphthalene	µg/L	--	--	--	57	92	91
Nitrobenzene	µg/L	--	--	--	0.57 U	0.57 U	0.57 U
Pentachlorophenol	µg/L	--	--	--	1.4 U	1.4 U	1.4 U
Phenanthrene	µg/L	--	--	--	1.3 U	1.6 J	1.5 J
Phenol	µg/L	--	--	--	0.29 U	0.29 U	0.29 U
Pyrene	µg/L	--	--	--	1.6 U	1.6 U	1.6 U
Metals							
Aluminum	µg/L	--	--	--	--	--	--
Antimony	µg/L	--	--	--	--	--	--
Arsenic	µg/L	--	--	--	--	--	--
Barium	µg/L	--	--	--	--	--	--
Beryllium	µg/L	--	--	--	--	--	--
Cadmium	µg/L	--	--	--	--	--	--
Calcium	µg/L	--	--	--	--	--	--
Chromium	µg/L	--	--	--	--	--	--
Cobalt	µg/L	--	--	--	--	--	--
Copper	µg/L	--	--	--	--	--	--
Iron	µg/L	--	--	--	--	--	--
Lead	µg/L	--	--	--	--	--	--
Magnesium	µg/L	--	--	--	--	--	--
Manganese	µg/L	--	--	--	--	--	--
Manganese (dissolved)	µg/L	--	--	--	--	--	--
Mercury	µg/L	--	--	--	--	--	--
Nickel	µg/L	--	--	--	--	--	--
Potassium	µg/L	--	--	--	--	--	--
Selenium	µg/L	--	--	--	--	--	--
Silver	µg/L	--	--	--	--	--	--
Sodium	µg/L	--	--	--	--	--	--
Thallium	µg/L	--	--	--	--	--	--
Vanadium	µg/L	--	--	--	--	--	--
Zinc	µg/L	--	--	--	--	--	--

Table 2

Analytical Results Summary

Long-Term Stewardship Plant - Groundwater Sampling Program

RACER Trust

RACER Wilmington - Former Assembly Plant

Wilmington, Delaware

January 2023

	Location ID:	MW-48R	MW-48R	MW-50R	MW-109R	MW-112	MW-113R
	Sample Name:	GW-11222397-011123-MA-13	GW-11222397-011123-MA-14	GW-11222397-011023-ZB-05	GW - 11222397- 011223-MA-16	GW-11222397-011123-ZB-12	GW - 11222397- 011223-MA-15
	Sample Date:	01/11/2023	01/11/2023	01/10/2023	01/12/2023	01/11/2023	01/12/2023
			Duplicate				
Parameters	Unit						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/L	--	--	0.24 U	--	--	--
1,1,2,2-Tetrachloroethane	µg/L	--	--	0.37 U	--	--	--
1,1,2-Trichloroethane	µg/L	--	--	0.20 U	--	--	--
1,1-Dichloroethane	µg/L	--	--	0.26 U	--	--	--
1,1-Dichloroethene	µg/L	--	--	0.26 U	--	--	--
1,2,4-Trichlorobenzene	µg/L	--	--	0.37 U	--	--	--
1,2,4-Trimethylbenzene	µg/L	--	--	0.37 U	--	--	--
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	--	--	0.38 UJ	--	--	--
1,2-Dibromoethane (Ethylene dibromide)	µg/L	--	--	0.50 U	--	--	--
1,2-Dichlorobenzene	µg/L	--	--	0.21 U	--	--	--
1,2-Dichloroethane	µg/L	--	--	0.43 U	--	--	--
1,2-Dichloropropane	µg/L	--	--	0.35 U	--	--	--
1,3-Dichlorobenzene	µg/L	--	--	0.34 U	--	--	--
1,4-Dichlorobenzene	µg/L	--	--	0.33 U	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	--	--	1.9 U	--	--	--
2-Hexanone	µg/L	--	--	1.1 U	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	--	--	1.3 U	--	--	--
Acetone	µg/L	--	--	4.4 U	--	--	--
Benzene	µg/L	0.20 U	--	0.20 U	--	--	--
Bromodichloromethane	µg/L	--	--	0.34 U	--	--	--
Bromoform	µg/L	--	--	0.54 U	--	--	--
Bromomethane (Methyl bromide)	µg/L	--	--	0.55 U	--	--	--
Carbon disulfide	µg/L	--	--	0.82 U	--	--	--
Carbon tetrachloride	µg/L	--	--	0.21 U	--	--	--
Chlorobenzene	µg/L	--	--	0.38 U	--	--	--
Chloroethane	µg/L	--	--	0.32 U	--	--	--
Chloroform (Trichloromethane)	µg/L	--	--	0.33 U	--	--	--
Chloromethane (Methyl chloride)	µg/L	--	--	0.40 U	--	--	--
cis-1,2-Dichloroethene	µg/L	--	--	0.22 U	--	--	--
cis-1,3-Dichloropropene	µg/L	--	--	0.22 U	--	--	--
Cyclohexane	µg/L	--	--	0.32 U	--	--	--
Dibromochloromethane	µg/L	--	--	0.28 U	--	--	--
Dichlorodifluoromethane (CFC-12)	µg/L	--	--	0.31 U	--	--	--
Ethylbenzene	µg/L	--	--	0.30 U	--	--	--
Isopropyl benzene	µg/L	--	--	0.34 U	--	--	--
Methyl acetate	µg/L	--	--	0.79 U	--	--	--
Methyl cyclohexane	µg/L	--	--	0.71 U	--	--	--
Methyl tert butyl ether (MTBE)	µg/L	--	--	0.22 U	--	--	--
Methylene chloride	µg/L	--	--	0.32 U	--	--	--
Styrene	µg/L	--	--	0.42 U	--	--	--
Tetrachloroethene	µg/L	--	--	0.25 U	--	--	--
Toluene	µg/L	--	--	0.38 U	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	0.24 U	--	--	--
trans-1,3-Dichloropropene	µg/L	--	--	0.22 U	--	--	--
Trichloroethene	µg/L	3.8	--	0.31 U	--	--	--
Trichlorofluoromethane (CFC-11)	µg/L	--	--	0.32 U	--	--	--
Trifluorotrichloroethane (CFC-113)	µg/L	--	--	0.31 U	--	--	--
Vinyl chloride	µg/L	--	--	0.17 U	--	--	--
Xylenes (total)	µg/L	--	--	0.65 U	--	--	--

Table 2

Analytical Results Summary

Long-Term Stewardship Plant - Groundwater Sampling Program

RACER Trust

RACER Wilmington - Former Assembly Plant

Wilmington, Delaware

January 2023

Location ID:	MW-48R	MW-48R	MW-50R	MW-109R	MW-112	MW-113R
Sample Name:	GW-11222397-011123-MA-13	GW-11222397-011123-MA-14	GW-11222397-011023-ZB-05	GW - 11222397- 011223-MA-16	GW-11222397-011123-ZB-12	GW - 11222397- 011223-MA-15
Sample Date:	01/11/2023	01/11/2023	01/10/2023	01/12/2023	01/11/2023	01/12/2023
		Duplicate				
Parameters	Unit					
Semivolatile Organic Compounds						
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	µg/L	--	--	0.63 U	--	--
2,4,5-Trichlorophenol	µg/L	--	--	0.88 U	--	--
2,4,6-Trichlorophenol	µg/L	--	--	0.86 U	--	--
2,4-Dichlorophenol	µg/L	--	--	1.1 U	--	--
2,4-Dimethylphenol	µg/L	--	--	0.62 U	--	--
2,4-Dinitrophenol	µg/L	--	--	2.6 UJ	--	--
2,4-Dinitrotoluene	µg/L	--	--	1.0 U	--	--
2,6-Dinitrotoluene	µg/L	--	--	0.83 U	--	--
2-Chloronaphthalene	µg/L	--	--	1.2 U	--	--
2-Chlorophenol	µg/L	--	--	0.38 U	--	--
2-Methylnaphthalene	µg/L	--	--	0.53 U	--	--
2-Methylphenol	µg/L	--	--	0.67 U	--	--
2-Nitroaniline	µg/L	--	--	0.47 U	--	--
2-Nitrophenol	µg/L	--	--	0.75 U	--	--
3,3'-Dichlorobenzidine	µg/L	--	--	1.4 U	--	--
3-Nitroaniline	µg/L	--	--	1.9 U	--	--
4,6-Dinitro-2-methylphenol	µg/L	--	--	3.0 UJ	--	--
4-Bromophenyl phenyl ether	µg/L	--	--	0.75 U	--	--
4-Chloro-3-methylphenol	µg/L	--	--	0.58 U	--	--
4-Chloroaniline	µg/L	--	--	1.9 U	--	--
4-Chlorophenyl phenyl ether	µg/L	--	--	1.3 U	--	--
4-Methylphenol	µg/L	--	--	0.65 U	--	--
4-Nitroaniline	µg/L	--	--	1.2 U	--	--
4-Nitrophenol	µg/L	--	--	4.0 U	--	--
Acenaphthene	µg/L	--	--	1.1 U	--	--
Acenaphthylene	µg/L	--	--	0.82 U	--	--
Acetophenone	µg/L	--	--	2.3 U	--	--
Anthracene	µg/L	--	--	1.3 U	--	--
Atrazine	µg/L	--	--	1.3 U	--	--
Benzaldehyde	µg/L	--	--	2.1 UJ	--	--
Benzo(a)anthracene	µg/L	--	--	0.59 U	--	--
Benzo(a)pyrene	µg/L	--	--	0.41 U	--	--
Benzo(b)fluoranthene	µg/L	--	--	0.68 U	--	--
Benzo(g,h,i)perylene	µg/L	--	--	0.70 U	--	--
Benzo(k)fluoranthene	µg/L	--	--	0.67 U	--	--
Biphenyl (1,1-Biphenyl)	µg/L	--	--	1.2 U	--	--
bis(2-Chloroethoxy)methane	µg/L	--	--	0.59 U	--	--
bis(2-Chloroethyl)ether	µg/L	--	--	0.63 U	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	--	--	0.80 U	--	--
Butyl benzylphthalate (BBP)	µg/L	--	--	0.85 U	--	--
Caprolactam	µg/L	--	--	2.2 U	--	--
Carbazole	µg/L	--	--	0.68 U	--	--
Chrysene	µg/L	--	--	0.91 U	--	--
Di-n-butylphthalate (DBP)	µg/L	--	--	0.84 U	--	--
Di-n-octyl phthalate (DnOP)	µg/L	--	--	0.75 U	--	--
Dibenz(a,h)anthracene	µg/L	--	--	0.72 U	--	--
Dibenzofuran	µg/L	--	--	1.1 U	--	--
Diethyl phthalate	µg/L	--	--	0.98 U	--	--
Dimethyl phthalate	µg/L	--	--	0.77 U	--	--

Table 2

Analytical Results Summary

Long-Term Stewardship Plant - Groundwater Sampling Program

RACER Trust

RACER Wilmington - Former Assembly Plant

Wilmington, Delaware

January 2023

Location ID:	MW-48R	MW-48R	MW-50R	MW-109R	MW-112	MW-113R	
Sample Name:	GW-11222397-011123-MA-13	GW-11222397-011123-MA-14	GW-11222397-011023-ZB-05	GW - 11222397- 011223-MA-16	GW-11222397-011123-ZB-12	GW - 11222397- 011223-MA-15	
Sample Date:	01/11/2023	01/11/2023	01/10/2023	01/12/2023	01/11/2023	01/12/2023	
		Duplicate					
Parameters	Unit						
Semivolatile Organic Compounds							
Fluoranthene	µg/L	--	--	0.84 U	--	--	
Fluorene	µg/L	--	--	0.91 U	--	--	
Hexachlorobenzene	µg/L	--	--	0.40 U	--	--	
Hexachlorobutadiene	µg/L	--	--	0.78 U	--	--	
Hexachlorocyclopentadiene	µg/L	--	--	3.6 U	--	--	
Hexachloroethane	µg/L	--	--	0.80 U	--	--	
Indeno(1,2,3-cd)pyrene	µg/L	--	--	0.94 U	--	--	
Isophorone	µg/L	--	--	0.80 U	--	--	
N-Nitrosodi-n-propylamine	µg/L	--	--	0.43 U	--	--	
N-Nitrosodiphenylamine	µg/L	--	--	0.89 U	--	--	
Naphthalene	µg/L	--	--	0.54 U	--	--	
Nitrobenzene	µg/L	--	--	0.57 U	--	--	
Pentachlorophenol	µg/L	--	--	1.4 U	--	--	
Phenanthrene	µg/L	--	--	1.3 U	--	--	
Phenol	µg/L	--	--	0.29 U	--	--	
Pyrene	µg/L	--	--	1.6 U	--	--	
Metals							
Aluminum	µg/L	94.4 J	1290 J	--	1200	1920	1040
Antimony	µg/L	0.76 U	0.76 U	--	1.9 J	0.76 U	0.76 U
Arsenic	µg/L	0.89 U	0.89 U	--	1.6 J	1.0 J	0.89 U
Barium	µg/L	271	290	--	55.0	327	264
Beryllium	µg/L	0.13 U	0.13 U	--	0.13 U	0.13 U	0.13 U
Cadmium	µg/L	0.39 U	0.39 U	--	0.39 U	0.39 U	0.39 U
Calcium	µg/L	35200	38100	--	90800	74300	36600
Chromium	µg/L	2.5 UJ	8.7 J	--	7.3	3.4 J	2.6 J
Cobalt	µg/L	6.0	7.3	--	2.8 J	7.4	17.7
Copper	µg/L	2.5 U	3.6 U	--	16.9	5.1 U	2.5 U
Iron	µg/L	90.3 J	1950 J	--	4170	3500	833
Lead	µg/L	0.84 UJ	8.7 J	--	11.9	2.7	0.84 J
Magnesium	µg/L	37600	41200	--	33800	52700	31400
Manganese	µg/L	6780	7170	--	125	1270	4720
Manganese (dissolved)	µg/L	7910	7890	--	67.0	1170	4850
Mercury	µg/L	0.091 U	0.091 U	--	0.10 J	0.091 U	0.091 U
Nickel	µg/L	5.1 U	5.5 U	--	6.0	9.3 U	3.4 J
Potassium	µg/L	3370	3520	--	35100	8730	4550
Selenium	µg/L	0.59 U	0.59 U	--	0.59 U	0.59 U	0.59 U
Silver	µg/L	0.29 U	0.29 U	--	0.29 U	0.29 U	0.29 U
Sodium	µg/L	106000	105000	--	49900	84800	74300
Thallium	µg/L	0.21 U	0.21 U	--	0.21 U	0.21 U	0.21 U
Vanadium	µg/L	0.76 J	5.6 J	--	6.7	5.3	3.8 J
Zinc	µg/L	10 J	17.7	--	20.8	20.5	6.5 U

Notes:

- U - Not detected at the associated reporting limit
- J - Estimated concentration
- UJ - Not detected; associated reporting limit is estimated
- - Not applicable

Table 3

Analytical Methods
Long-Term Stewardship Plan - Groundwater Sampling Plan
RACER Trust
RACER Wilmington - Former Assembly Plant
Wilmington, Delaware
January 2023

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
Volatile Organic Compounds (VOCs)	SW-846 8260B	Groundwater	--	14
Semivolatile Organic Compounds (SVOCs)	SW-846 8270C	Groundwater	7	40
Metals	SW-846 6020B	Groundwater	--	180
Mercury	SW-846 7470A	Groundwater	--	28

Notes:

-- - Not applicable

Method References:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

Table 4

Qualified Sample Results Due to Outlying Continuing Calibration Results
Long-Term Stewardship Plan - Groundwater Sampling Plan
RACER Trust
RACER Wilmington - Former Assembly Plant
Wilmington, Delaware
January 2023

Parameter	Analyte	Calibration Date (mm/dd/yyyy)	%D	Associated Sample ID	Qualified Result	Units
SVOCs	2,4-Dinitrophenol	01/12/2023	42	GW-11222397-011023-ZB-02	40 UJ	µg/L
				GW-11222397-011023-MA-03	40 UJ	µg/L
				GW-11222397-011023-MA-04	40 UJ	µg/L
				GW-11222397-011023-ZB-05	40 UJ	µg/L
	4,6-Dinitro-2-methylphenol	01/12/2023	35	GW-11222397-011023-ZB-02	20 UJ	µg/L
				GW-11222397-011023-MA-03	20 UJ	µg/L
				GW-11222397-011023-MA-04	20 UJ	µg/L
				GW-11222397-011023-ZB-05	20 UJ	µg/L
	Benzaldehyde	01/12/2023	43	GW-11222397-011023-ZB-02	10 UJ	µg/L
				GW-11222397-011023-MA-03	10 UJ	µg/L
				GW-11222397-011023-MA-04	10 UJ	µg/L
				GW-11222397-011023-ZB-05	10 UJ	µg/L
VOCs	1,2-Dibromo-3-chloropropane (DBCP)	01/16/2023	32	GW-11222397-011023-ZB-05	1.0 UJ	µg/L
				GW-11222397-011123-ZB-07	1.0 UJ	µg/L
				GW-11222397-011123-MA-08	1.0 UJ	µg/L
				GW-11222397-011123-MA-09	1.0 UJ	µg/L
				GW-11222397-011123-ZB-10	1.0 UJ	µg/L

Table 4

Qualified Sample Results Due to Outlying Continuing Calibration Results
Long-Term Stewardship Plan - Groundwater Sampling Plan
RACER Trust
RACER Wilmington - Former Assembly Plant
Wilmington, Delaware
January 2023

Parameter	Analyte	Calibration Date (mm/dd/yyyy)	%D	Associated Sample ID	Qualified Result	Units
VOCs	1,2-Dibromo-3-chloropropane (DBCP)	01/17/2023	36	GW-11222397-011023-ZB-02	1.0 UJ	µg/L
				GW-11222397-011023-MA-03	1.0 UJ	µg/L
	Trichlorofluoromethane (CFC-11)	01/17/2023	27	GW-11222397-011023-ZB-02	1.0 UJ	µg/L
				GW-11222397-011023-MA-03	1.0 UJ	µg/L

Notes:

%D - Percent difference

UJ - Not detected; associated reporting limit is estimated

SVOCs - Semi-volatile Organic Compounds

VOCs - Volatile Organic Compounds

Table 5

Qualified Sample Data Due to Analyte Concentrations in the Rinse Blanks
Long-Term Stewardship Plan - Groundwater Sampling Program
RACER Trust
RACER Wilmington - Former Assembly Plant
Wilmington, Delaware
January 2023

Parameter	Rinse Blank ID	Blank Date (mm/dd/yyyy)	Analyte	Blank Result	Associated Sample ID	Original Result	Qualified Result	Units
Metals	RB-11222397-011123-ZB-11	01/11/2023	Copper	23.3	GW-11222397-011123-ZB-12	5.1	5.1 U	µg/L
					GW-11222397-011123-MA-14	3.6 J	3.6 U	µg/L
	RB-11222397-011123-ZB-11	01/11/2023	Nickel	41.5	GW-11222397-011123-ZB-12	9.3	9.3 U	µg/L
					GW-11222397-011123-MA-13	5.1	5.1 U	µg/L
					GW-11222397-011123-MA-14	5.5	5.5 U	µg/L

Notes:

U - Not detected at the associated reporting limit

J - Estimated concentration

Table 6

Qualified Sample Data Due to Variability in Field Duplicate Results
Long-Term Stewardship Plan - Groundwater Sampling Program
RACER Trust
RACER Wilmington - Former Assembly Plant
Wilmington, Delaware
January 2023

Parameter	Analyte	RPD/Diff		Sample ID	Qualified Result	Field Duplicate Sample ID	Qualified Result	Units
Metals	Aluminum	173	1195.6	GW-11222397-011123-MA-13	94.4 J	GW-11222397-011123-MA-14	1290 J	µg/L
	Chromium	111	6.2	GW-11222397-011123-MA-13	2.5 UJ	GW-11222397-011123-MA-14	8.7 J	µg/L
	Iron	182	1859.7	GW-11222397-011123-MA-13	90.3 J	GW-11222397-011123-MA-14	1950 J	µg/L
	Lead	165	7.86	GW-11222397-011123-MA-13	0.84 UJ	GW-11222397-011123-MA-14	8.7 J	µg/L
	Vanadium	152	4.84	GW-11222397-011123-MA-13	0.76 J	GW-11222397-011123-MA-14	5.6 J	µg/L

Notes:

Diff - Difference (i.e., >1X RL for waters)

RPD - Relative Percent Difference

J - Estimated concentration

UJ - Not detected; associated reporting limit is estimated

Appendix E

Historical Groundwater Analytical Results

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-2 MW-8 GW-017338-012110-ACH-001 01/21/2010	OU-2 MW-8 MW8-060205EAP001 06/02/2005	OU-2 MW-8 MW8-060205EAP002 06/02/2005 (Duplicate)	OU-2 MW-8 WG-17338-111405-RR-015 11/14/2005	OU-2 MW-8 GW17338082106004 08/21/2006	OU-2 MW-8 GW17338082306015 08/23/2006	OU-2 MW-8 GW-17338-121406-MJW-10 12/14/2006	OU-2 MW-8 GW-17338-080408-02 08/04/2008	OU-2 MW-8 GW-17338-112008-01 11/20/2008	OU-2 MW-8 GW-017338-022409-009 02/24/2009	OU-2 MW-8 GW-017338-050809-ACH-003 05/08/2009
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)											
Volatile Organic Compounds														
1,1,1-Trichloroethane	ug/L	200	11	-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	0.076	610	-	1.0 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	0.041	1200	-	3.0 U	3.0 U	3.0 U	3.0 U	-	3.0 U	3.0 U	3.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	2.8	47	-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	7	25	-	2.0 U	2.0 U	2.0 U	2.0 U	-	2.0 U	2.0 U	2.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	0.4	24	-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	-	1.0 U	1.0 U
1,2,4-Trimethylbenzene	ug/L	5.6		-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.00033		-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	-	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.0075		-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	-	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	30	0.7	-	0.7 J	0.8 J ^b	5.0 U	5.0 U	-	5.0 U	5.0 U	-	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	0.17	100	-	2.0 U	2.0 U	2.0 U	2.0 U	-	2.0 U	2.0 U	2.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	0.82		-	1.0 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	ug/L	6	71	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ug/L			-	0.6 J	0.6 J	5.0 U	5.0 U	-	5.0 U	5.0 U	-	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	0.48	26	-	3.7 J ^a	3.8 J ^a	1.3 J ^a	5.0 U	-	5.0 U	5.0 U	-	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	560	14000	-	R	R	R	5.0 U	-	R	5.0 U	5.0 U	10 U	10 U
2-Hexanone	ug/L	3.8	99	-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	630	170	-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	10 U	10 U
Acetone	ug/L	1800	1500	-	5.0 U	5.0 U	5.0 U	R	-	R	R	5.0 U	10 U	10 UJ
Benzene	ug/L	0.46	370	-	4.7 ^a	4.9 ^a	7.6 ^a	7.2 ^a	-	6.6 ^a	1.2 ^a	3.9 ^a	2.9 ^a	1.9 ^a
Bromodichloromethane	ug/L	0.13		-	1.0 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	3.3	320	-	4.0 U	4.0 U	4.0 U	4.0 U	-	4.0 U	4.0 U	4.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	0.75		-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	81	0.92	-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	0.46	13.3	-	2.0 U	2.0 U	2.0 U	2.0 U	-	2.0 U	2.0 U	2.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	7.8	1.3	-	810 ^{ab}	710 ^{ab}	250 ^{ab}	60 ^{ab}	-	49 ^{ab}	4.6 J ^b	3.3 J ^b	2.9 ^b	1.6 ^b
Chloroethane	ug/L	830		-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	0.22	1.8	-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	19		-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	2.5		-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L			-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1300		-	0.6 J	0.7 J	1.7 J	1.1 J	-	1.6 J	0.9 J	-	3.1	3.1
Dibromochloromethane	ug/L	0.87		-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	20		-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	-	1.0 U	1.0 U
Ethylbenzene	ug/L	1.5	90	-	6.5 ^a	7.3 ^a	0.9 J	4.0 U	-	4.0 U	4.0 U	4.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	45	2.6	-	2.5 J	2.7 J ^b	7.8 ^a	2.8 J ^b	-	0.9 J	0.6 J	-	5.9 ^a	2.9 ^b
Methyl acetate	ug/L	2000		-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	-	1.0 U	2.0 U
Methyl cyclohexane	ug/L			-	5.0 U	5.0 U	1.9 J	0.8 J	-	1.8 J	2.4 J	-	11	16
Methyl tert butyl ether (MTBE)	ug/L	10	11070	-	1.3 J	1.4 J	2.2 J	16 ^a	-	17 ^a	4.5 J	-	6.3	5.0
Methylene chloride	ug/L	5	98.1	-	3.0 U	3.0 U	3.0 U	3.0 U	-	3.0 U	3.0 U	3.0 U	1.0 U	1.0 U
Styrene	ug/L	100	72	-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1	111	-	1.0 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	110	2	-	40 ^b	42 ^b	0.9 J	5.0 U	-	5.0 U	5.0 U	0.4 J	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	6.8	970	-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L			-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	0.28	21	-	1.0 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	520		-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	-	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1000		-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	-	1.0 U	1.0 U
Vinyl chloride	ug/L	0.019	930	-	5.0 U	5.0 U	5.0 U	5.0 U	-	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	19	13	-	9.1	9.6	1.6 J	5.0 U	-	5.0 U	5.0 U	5.0 U	0.5 J	3.0 U

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-2 MW-8 GW-017338-012110-ACH-001 01/21/2010	OU-2 MW-8 MW8-060205EAP001 06/02/2005	OU-2 MW-8 MW8-060205EAP002 06/02/2005 (Duplicate)	OU-2 MW-8 WG-17338-111405-RR-015 11/14/2005	OU-2 MW-8 GW17338082106004 08/21/2006	OU-2 MW-8 GW17338082306015 08/23/2006	OU-2 MW-8 GW-17338-121406-MJW-10 12/14/2006	OU-2 MW-8 GW-17338-080408-02 08/04/2008	OU-2 MW-8 GW-17338-112008-01 11/20/2008	OU-2 MW-8 GW-017338-022409-009 02/24/2009	OU-2 MW-8 GW-017338-050809-ACH-003 05/08/2009
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)											
Semi-Volatile Organic Compounds														
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	71		10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	ug/L	120		10 U	10 U	17 U	10 U	11 U	-	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	ug/L	1.2	4.9	10 U	10 U	17 U	10 U	11 U	-	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	ug/L	4.6	11	10 U	10 U	17 U	10 U	11 U	-	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	ug/L	36		10 U	10 U	17 U	5.6 J	11 U	-	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	ug/L	3.9		30 U	42 U	67 U	41 U	33 UJ	-	31 U	30 U	31 U	32 U	30 U
2,4-Dinitrotoluene	ug/L	0.24	44	2.0 U	2.1 U	3.3 U	2.1 U	2.2 UJ	-	2.1 U	2.0 U	2.0 U	2.1 U	2.0 U
2,6-Dinitrotoluene	ug/L	0.049	81	2.0 U	2.1 U	3.3 U	0.4 J ^a	2.2 UJ	-	2.1 U	2.0 U	2.0 U	2.1 U	2.0 U
2-Chloronaphthalene	ug/L	75		10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	ug/L	9.1	24	10 U	4.4 J	4.8 J	1.0 J	11 U	-	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	ug/L	3.6	4.7	10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	0.4 J	10 U	10 U
2-Methylphenol	ug/L	93	13	10 U	0.2 J	17 U	10 U	11 U	-	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	ug/L	19		20 U	21 U	33 U	21 U	22 UJ	-	21 U	20 U	20 U	21 U	20 U
2-Nitrophenol	ug/L			10 U	10 U	17 U	10 U	11 U	-	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	ug/L	0.13	4.5	20 U	21 U	33 U	21 U	22 UJ	-	21 U	20 U	20 U	21 U	20 U
3-Nitroaniline	ug/L			20 U	21 U	33 U	21 U	22 UJ	-	21 U	20 U	20 U	21 U	20 U
4,6-Dinitro-2-methylphenol	ug/L	0.15		30 U	42 U	67 U	41 U	33 UJ	-	31 U	30 U	31 U	32 U	30 U
4-Bromophenyl phenyl ether	ug/L			10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	ug/L	140		10 U	10 U	17 U	10 U	11 U	-	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	ug/L	0.37	232	10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl phenyl ether	ug/L			10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	ug/L	37	543	10 U	10 U	0.4 J	10 U	11 U	-	10 U	10 U	-	10 U	10 U
4-Nitroaniline	ug/L	3.8		20 U	21 U	33 U	21 U	22 UJ	-	21 U	20 U	20 U	21 U	20 U
4-Nitrophenol	ug/L			30 U	42 U	67 U	41 U	33 U	-	31 U	30 U	31 U	32 U	30 U
Acenaphthene	ug/L	53	5.8	10 U	10 U	17 U	0.4 J	11 UJ	-	0.6 J	0.3 J	0.8 J	0.8 J	10 U
Acenaphthylene	ug/L			10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Acetophenone	ug/L	190		10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Anthracene	ug/L	180	0.012	10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Atrazine	ug/L	0.3	1.8	10 U	10 UJ	17 UJ	10 UJ	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Benzaldehyde	ug/L	19		10 UJ	10 UJ	17 UJ	10 UJ	11 UJ	-	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Benzo(a)anthracene	ug/L	0.03	0.018	1.0 U	1.0 U	1.7 U	1.0 U	1.1 UJ	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)pyrene	ug/L	0.025	0.015	1.0 U	1.0 U	1.7 U	1.0 U	1.1 UJ	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(b)fluoranthene	ug/L	0.25		1.0 U	1.0 U	1.7 U	1.0 U	1.1 UJ	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(g,h,i)perylene	ug/L			10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	ug/L	2.5		1.0 U	1.0 U	1.7 U	1.0 U	1.1 UJ	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Biphenyl (1,1-Biphenyl)	ug/L	0.083	14	10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	ug/L	5.9		10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	ug/L	0.014		1.0 U	1.0 U	1.7 U	1.0 U	1.1 UJ	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	5.6	16	10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 UJ
Butyl benzylphthalate (BBP)	ug/L	16	19	10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Caprolactam	ug/L	990		10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Carbazole	ug/L			10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Chrysene	ug/L	25		10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	ug/L	0.025		1.0 U	1.0 U	1.7 U	1.0 U	1.1 UJ	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran	ug/L	0.79	3.7	10 U	10 U	17 U	0.3 J	11 UJ	-	0.3 J	10 U	0.3 J	10 U	10 U
Diethyl phthalate	ug/L	1500	210	10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	ug/L			10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate (DBP)	ug/L	90	19	10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate (DnOP)	ug/L	20	22	10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Fluoranthene	ug/L	80	0.04	10 U	10 U	17 U	0.4 J ^b	11 UJ	-	0.3 J ^b	10 U	10 U	0.3 J ^b	10 U
Fluorene	ug/L	29	3	10 U	10 U	17 U	0.5 J	11 UJ	-	0.6 J	10 U	0.4 J	10 U	10 U
Hexachlorobenzene	ug/L	0.0098	0.0003	1.0 U	1.0 U	1.7 U	1.0 U	1.1 UJ	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexachlorobutadiene	ug/L	0.14	1.3	2.0 U	2.1 U	3.3 U	2.1 U	2.2 UJ	-	2.1 U	2.0 U	2.0 U	2.1 U	2.0 U
Hexachlorocyclopentadiene	ug/L	0.041		10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	ug/L	0.33	12	1.0 U	1.0 U	1.7 U	1.0 U	1.1 UJ	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Indeno(1,2,3-cd)pyrene	ug/L	0.25		1.0 U	1.0 U	1.7 U	1.0 U	1.1 UJ	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isophorone	ug/L	78		10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Naphthalene	ug/L	0.12	1.1	140 J ^{ab}	0.8 J ^a	0.8 J ^a	0.4 J ^a	0.5 J ^a	-	5.2 J ^{ab}	10 U	43 ^{ab}	32 ^{ab}	10 U
Nitrobenzene	ug/L	0.14		1.0 U	1.0 U	1.7 U	1.0 U	1.1 UJ	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
N-Nitrosodi-n-propylamine	ug/L	0.011		1.0 U	1.0 U	1.7 U	1.0 U	1.1 UJ	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
N-Nitrosodiphenylamine	ug/L	12	210	10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	ug/L	0.041	0.5	30 U	42 U	67 U	41 U	33 UJ	-	31 U	30 U	31 U	32 U	30 U
Phenanthrene	ug/L	12	0.4	10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U
Phenol	ug/L	580	4	10 U	10 U	17 U	10 U	11 U	-	10 U	10 U	10 U	10 U	10 U
Pyrene	ug/L	12	0.025	10 U	10 U	17 U	10 U	11 UJ	-	10 U	10 U	10 U	10 U	10 U

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-2 MW-8 GW-017338-012110-ACH-001 01/21/2010	OU-2 MW-8 MW8-060205EAP001 06/02/2005	OU-2 MW-8 MW8-060205EAP002 06/02/2005 (Duplicate)	OU-2 MW-8 WG-17338-111405-RR-015 11/14/2005	OU-2 MW-8 GW17338082106004 08/21/2006	OU-2 MW-8 GW17338082306015 08/23/2006	OU-2 MW-8 GW-17338-121406-MJW-10 12/14/2006	OU-2 MW-8 GW-17338-080408-02 08/04/2008	OU-2 MW-8 GW-17338-112008-01 11/20/2008	OU-2 MW-8 GW-017338-022409-009 02/24/2009	OU-2 MW-8 GW-017338-050809-ACH-003 05/08/2009
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)											
Metals		a	b											
Aluminum	ug/L	2000	87	-	7060 ^{ab}	2310 ^{ab}	-	-	257 ^b	293 ^b	387 ^b	946 ^b	477 ^b	1180 ^b
Aluminum (dissolved)	ug/L	2000	87	-	-	-	-	-	160 U	200 U	-	-	-	-
Antimony	ug/L	0.78	30	-	12 U	12 U	-	-	12 U	10 U	8.4 U	10 U	10 U	10.0 U
Antimony (dissolved)	ug/L	0.78	30	-	-	-	-	-	12 U	10 U	-	-	-	-
Arsenic	ug/L	0.052	5	-	6.4 U	6.4 U	-	-	3.6 U	4.2 U	5.9 U	4.2 U	4.2 U	5.0 U
Arsenic (dissolved)	ug/L	0.052	5	-	-	-	-	-	3.6 U	4.2 U	-	-	-	-
Barium	ug/L	380	4	-	276 ^b	285 ^b	-	-	296 ^b	302 ^b	410 ^{ab}	529 ^{ab}	462 ^{ab}	491 ^{ab}
Barium (dissolved)	ug/L	380	4	-	-	-	-	-	305 ^b	305 ^b	-	-	-	-
Beryllium	ug/L	2.5	0.66	-	0.21	2 U	-	-	6 U	2 U	0.67 U	2 U	2 U	2.0 U
Beryllium (dissolved)	ug/L	2.5	0.66	-	-	-	-	-	6 U	2 U	-	-	-	-
Cadmium	ug/L	0.18	0.25	-	5 U	5 U	-	-	3.2 U	4 U	0.59 J ^{ab}	4 U	4 U	5.0 U
Cadmium (dissolved)	ug/L	0.18	0.25	-	-	-	-	-	3.2 U	4 U	-	-	-	-
Calcium	ug/L	-	-	-	41700	43000	-	-	47300	51400	53500	53800	58000	49900
Calcium (dissolved)	ug/L	-	-	-	-	-	-	-	48700	51100	-	-	-	-
Chromium	ug/L	10	85	-	11.1 ^a	3.0	-	-	5.7 U	10 U	18 U	10 U	10 U	10.0 U
Chromium (dissolved)	ug/L	10	85	-	-	-	-	-	5.7 U	10 U	-	-	-	-
Chromium VI (hexavalent)	ug/L	0.035	11	-	-	-	10 U	-	40.0 U	-	-	-	-	-
Chromium VI (hexavalent) (dissolved)	ug/L	0.035	11	-	-	-	-	-	50.0 U	-	-	-	-	-
Cobalt	ug/L	0.6	23	-	24.5 ^{ab}	21.7 ^a	-	-	22.2 J ^a	21.6 J ^a	19.0 J ^a	17.8 J ^a	19.5 J ^a	17.8 J ^a
Cobalt (dissolved)	ug/L	0.6	23	-	-	-	-	-	22.4 J ^a	21.4 J ^a	-	-	-	-
Copper	ug/L	80	9	-	9.3 ^b	25 U	-	-	30 U	25 U	3.3 J	25 U	25 U	25.0 U
Copper (dissolved)	ug/L	80	9	-	-	-	-	-	30 U	25 U	-	-	-	-
Iron	ug/L	1400	300	-	41300 ^{ab}	43700 ^{ab}	-	-	54600 ^{ab}	56700 ^{ab}	67800 ^{ab}	72700 ^{ab}	75500 ^{ab}	67100 ^{ab}
Iron (dissolved)	ug/L	1400	300	-	-	-	-	-	56600 ^{ab}	56600 ^{ab}	-	-	-	-
Lead	ug/L	15	2.5	-	4.0 ^b	3 U	-	-	3.7 U	3 U	13.7 ^b	3 U	3 U	3.4 J ^b
Lead (dissolved)	ug/L	15	2.5	-	-	-	-	-	3.7 U	3 U	-	-	-	-
Magnesium	ug/L	-	-	-	27600	29100	-	-	31800	32900	35300	37500	37100	32900
Magnesium (dissolved)	ug/L	-	-	-	-	-	-	-	33100	33100	-	-	-	-
Manganese	ug/L	43	120	-	2120 ^{ab}	2270 ^{ab}	-	-	1980 ^{ab}	1980 ^{ab}	1900 ^{ab}	1870 ^{ab}	1990 ^{ab}	1710 ^{ab}
Manganese (dissolved)	ug/L	43	120	-	-	-	-	-	2050 ^{ab}	1990 ^{ab}	-	-	-	-
Mercury	ug/L	0.063	0.026	-	0.20 U	0.20 U	-	-	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Mercury (dissolved)	ug/L	0.063	0.026	-	-	-	-	-	0.20 U	0.20 U	-	-	-	-
Nickel	ug/L	39	52	-	7.3	40 U	-	-	25 U	40 U	65 U	40 U	40 U	40.0 U
Nickel (dissolved)	ug/L	39	52	-	-	-	-	-	25 U	4.6 J	-	-	-	-
Potassium	ug/L	-	-	-	2780	2610	-	-	2790 J	3150 J	3220 J	3780 J	3370 J	3620 J
Potassium (dissolved)	ug/L	-	-	-	-	-	-	-	2850 J	3140 J	-	-	-	-
Selenium	ug/L	10	1	-	5.1 U	5.1 U	-	-	4.4 U	5 U	5.7 U	5 U	5 U	10.0 U
Selenium (dissolved)	ug/L	10	1	-	-	-	-	-	4.4 U	5 U	-	-	-	-
Silver	ug/L	9.4	3.2	-	15 U	15 U	-	-	12 U	10 U	8.6 U	10 U	10 U	10.0 U
Silver (dissolved)	ug/L	9.4	3.2	-	-	-	-	-	12 U	10 U	-	-	-	-
Sodium	ug/L	-	-	-	48900	51900	-	-	60000	55100	78500	101000	85400	102000
Sodium (dissolved)	ug/L	-	-	-	-	-	-	-	61700	56000	-	-	-	-
Thallium	ug/L	0.02	0.8	-	11 U	11 U	-	-	9.8 U	9.5 U	9.7 U	9.5 U	9.5 U	10.0 U
Thallium (dissolved)	ug/L	0.02	0.8	-	-	-	-	-	9.8 U	9.5 U	-	-	-	-
Vanadium	ug/L	8.6	20	-	18.1 ^a	4.8	-	-	160 U	50 U	16 U	50 U	50 U	50.0 U
Vanadium (dissolved)	ug/L	8.6	20	-	-	-	-	-	160 U	50 U	-	-	-	-
Zinc	ug/L	600	120	-	18.6	9.6	-	-	30 U	30 U	30 U	30 U	30 U	30.0 U
Zinc (dissolved)	ug/L	600	120	-	-	-	-	-	30 U	12.5 J	-	-	-	-

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-2 MW-8 GW-017338-050809-ACH-004 05/08/2009 (Duplicate)	OU-2 MW-8 GW-017338-081809-ACH-05 08/18/2009	OU-2 MW-8 GW-017338-111209-ACH-03 11/12/2009	OU-2 MW-8 GW-017338-111209-ACH-04 11/12/2009 (Duplicate)	OU-2 MW-8 GW-017338-030110-ACH-003 03/01/2010	OU-2 MW-8 GW-017338-051810-ACH-02 05/18/2010	OU-2 MW-8 WG-17338-110617-SG-044 11/06/2017	OU-2 MW-8 WG-17338-062618-AM-003 06/26/2018	OU-2 MW-8R GW-11222397-011123-ZB-07 01/11/2023
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)									
Volatile Organic Compounds												
1,1,1-Trichloroethane	ug/L	200	11	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.25 U	1.0 U	1.0 U	0.24 U
1,1,2,2-Tetrachloroethane	ug/L	0.076	610	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.090 U	1.0 U	1.0 U	0.37 U
1,1,2-Trichloroethane	ug/L	0.041	1200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	1.0 U	1.0 U	0.20 U
1,1-Dichloroethane	ug/L	2.8	47	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	1.0 U	1.0 U	0.26 U
1,1-Dichloroethene	ug/L	7	25	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.14 U	1.0 U	1.0 U	0.26 U
1,2,4-Trichlorobenzene	ug/L	0.4	24	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.44 U	1.0 U	1.0 U	0.37 U
1,2,4-Trimethylbenzene	ug/L	5.6		-	-	-	-	-	-	1.0 U	1.0 U	0.37 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.00033		1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	0.15 U	1.0 U	1.0 U	0.38 UJ
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.0075		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.090 U	1.0 U	1.0 U	0.50 U
1,2-Dichlorobenzene	ug/L	30	0.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.27 J	1.0 U	1.0 U	0.21 U
1,2-Dichloroethane	ug/L	0.17	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.24 U	1.0 U	1.0 U	0.43 U
1,2-Dichloropropane	ug/L	0.82		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.090 U	1.0 U	1.0 U	0.35 U
1,3,5-Trimethylbenzene	ug/L	6	71	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.22 U	1.0 U	1.0 U	0.34 U
1,4-Dichlorobenzene	ug/L	0.48	26	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.28 J	1.0 U	1.0 U	0.33 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	560	14000	10 U	R	10 UJ	10 UJ	10 U	0.82 U	5.0 U	5.0 U	1.9 U
2-Hexanone	ug/L	3.8	99	10 U	10 U	10 U	10 U	10 U	0.55 U	5.0 U	5.0 U	1.1 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	630	170	10 U	10 U	10 U	10 U	R	0.68 U	5.0 U	5.0 U	1.3 U
Acetone	ug/L	1800	1500	10 UJ	R	R	R	R	2.5 U	5.0 U	5.0 U	4.4 U
Benzene	ug/L	0.46	370	2.1 ^a	3.7 ^a	12 ^a	12 ^a	2.2 ^a	4.5 ^a	1.0 U	1.0 U	0.20 U
Bromodichloromethane	ug/L	0.13		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.093 U	1.0 U	1.0 U	0.34 U
Bromoform	ug/L	3.3	320	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	1.0 U	1.0 U	0.54 U
Bromomethane (Methyl bromide)	ug/L	0.75		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.31 U	1.0 U	1.0 U	0.55 U
Carbon disulfide	ug/L	81	0.92	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.15 U	1.0 U	1.0 U	0.82 U
Carbon tetrachloride	ug/L	0.46	13.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.19 U	1.0 U	1.0 U	0.21 U
Chlorobenzene	ug/L	7.8	1.3	1.7 ^b	2.0 ^b	2.8 ^b	2.8 ^b	1.7 ^b	2.9 ^b	1.0 U	1.0 U	0.38 U
Chloroethane	ug/L	830		1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	0.45 U	1.0 U	1.0 U	0.32 U
Chloroform (Trichloromethane)	ug/L	0.22	1.8	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.15 U	1.0 U	1.0 U	0.33 U
Chloromethane (Methyl chloride)	ug/L	19		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.21 U	1.0 U	1.0 U	0.40 U
cis-1,2-Dichloroethene	ug/L	2.5		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U	1.0 U	1.0 U	0.22 U
cis-1,3-Dichloropropene	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.11 U	1.0 U	1.0 U	0.22 U
Cyclohexane	ug/L	1300		2.9	2.1	5.3	5.1	2.3	2.8	1.0 U	1.0 U	0.32 U
Dibromochloromethane	ug/L	0.87		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.11 U	1.0 U	1.0 U	0.28 U
Dichlorodifluoromethane (CFC-12)	ug/L	20		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.29 U	1.0 U	1.0 U	0.31 U
Ethylbenzene	ug/L	1.5	90	1.0 U	0.43 J	0.80 J	0.79 J	0.31 J	0.33 J	1.0 U	1.0 U	0.30 U
Isopropyl benzene	ug/L	45	2.6	3.2 ^b	7.1 ^b	24 ^b	24 ^b	3.3 ^b	6.0 ^b	1.0 U	1.0 U	0.34 U
Methyl acetate	ug/L	2000		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	0.33 U	5.0 U	5.0 U	0.79 U
Methyl cyclohexane	ug/L			18	7.2	18	18	10	11	1.0 U	1.0 U	0.71 U
Methyl tert butyl ether (MTBE)	ug/L	10	11070	5.3	7.1	8.9	9.1	3.1	4.6	0.33 J	1.0 U	0.22 U
Methylene chloride	ug/L	5	98.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.19 U	1.0 U	1.0 U	0.32 U
Styrene	ug/L	100	72	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.13 U	1.0 U	1.0 U	0.42 U
Tetrachloroethene	ug/L	1	111	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U	1.0 U	1.0 U	0.42 J
Toluene	ug/L	110	2	1.0 U	0.30 J	0.25 J	0.28 J	0.58 J	0.090 U	1.0 U	1.0 U	0.38 U
trans-1,2-Dichloroethene	ug/L	6.8	970	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.14 U	1.0 U	1.0 U	0.24 U
trans-1,3-Dichloropropene	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.12 U	1.0 U	1.0 U	0.22 U
Trichloroethene	ug/L	0.28	21	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.18 U	1.0 U	1.0 U	0.31 U
Trichlorofluoromethane (CFC-11)	ug/L	520		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.16 U	1.0 U	1.0 U	2.1
Trifluorotrichloroethane (CFC-113)	ug/L	1000		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.28 U	1.0 U	1.0 U	0.31 U
Vinyl chloride	ug/L	0.019	930	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.13 U	1.0 U	1.0 U	0.17 U
Xylenes (total)	ug/L	19	13	3.0 U	18 ^b	17 ^b	17 ^b	0.82 J	1.2 J	2.0 U	2.0 U	0.65 U

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-2 MW-8 GW-017338-050809-ACH-004 05/08/2009 (Duplicate)	OU-2 MW-8 GW-017338-081809-ACH-05 08/18/2009	OU-2 MW-8 GW-017338-111209-ACH-03 11/12/2009	OU-2 MW-8 GW-017338-111209-ACH-04 11/12/2009 (Duplicate)	OU-2 MW-8 GW-017338-030110-ACH-003 03/01/2010	OU-2 MW-8 GW-017338-051810-ACH-02 05/18/2010	OU-2 MW-8 WG-17338-110617-SG-044 11/06/2017	OU-2 MW-8 WG-17338-062618-AM-003 06/26/2018	OU-2 MW-8R GW-11222397-011123-ZB-07 01/11/2023
Parameters		Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)								
Semi-Volatile Organic Compounds												
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	71		10 U	11 U	10 U	10 U	3.3 U	3.2 U	10 U	10 U	-
2,4,5-Trichlorophenol	ug/L	120		10 U	11 U	10 U	10 U	2.6 U	-	10 U	10 U	-
2,4,6-Trichlorophenol	ug/L	1.2	4.9	10 U	11 U	10 U	10 U	3.2 U	-	10 U	10 U	-
2,4-Dichlorophenol	ug/L	4.6	11	10 U	11 U	10 U	10 U	2.8 U	-	10 U	10 U	-
2,4-Dimethylphenol	ug/L	36		10 U	11 U	10 U	10 U	2.6 U	-	10 U	10 U	-
2,4-Dinitrophenol	ug/L	3.9		30 U	32 UJ	31 UJ	31 UJ	4.9 U	-	20 U	20 U	-
2,4-Dinitrotoluene	ug/L	0.24	44	2.0 U	2.1 U	2.1 U	2.0 U	0.44 U	0.43 U	2.0 U	2.0 U	-
2,6-Dinitrotoluene	ug/L	0.049	81	2.0 U	2.1 U	2.1 U	2.0 U	0.60 U	0.60 U	2.0 U	2.0 U	-
2-Chloronaphthalene	ug/L	75		10 U	11 U	10 U	10 U	3.8 U	3.8 U	10 U	10 U	-
2-Chlorophenol	ug/L	9.1	24	10 U	11 U	10 U	10 U	2.7 U	-	10 U	10 U	-
2-Methylnaphthalene	ug/L	3.6	4.7	10 U	11 U	10 U	10 U	3.2 U	3.1 U	10 UJ	10 U	-
2-Methylphenol	ug/L	93	13	10 U	11 U	10 U	10 U	1.7 U	-	10 U	10 U	-
2-Nitroaniline	ug/L	19		20 U	21 U	21 U	20 U	5.8 U	5.8 U	10 U	10 U	-
2-Nitrophenol	ug/L			10 U	11 U	10 U	10 U	3.5 U	-	10 U	10 U	-
3,3'-Dichlorobenzidine	ug/L	0.13	4.5	20 U	21 U	21 U	20 U	7.1 U	7.0 U	10 U	10 U	-
3-Nitroaniline	ug/L			20 U	21 U	21 U	20 U	4.4 U	4.4 UJ	10 U	10 U	-
4,6-Dinitro-2-methylphenol	ug/L	0.15		30 U	32 U	31 U	31 U	5.3 U	-	20 U	20 U	-
4-Bromophenyl phenyl ether	ug/L			10 U	11 U	10 U	10 U	4.0 U	4.0 U	10 U	10 U	-
4-Chloro-3-methylphenol	ug/L	140		10 U	11 U	10 U	10 U	2.0 U	-	10 U	10 U	-
4-Chloroaniline	ug/L	0.37	232	10 U	11 U	10 U	10 U	2.1 U	2.1 UJ	10 U	10 U	-
4-Chlorophenyl phenyl ether	ug/L			10 U	11 U	10 U	10 U	4.0 U	4.0 U	10 U	10 U	-
4-Methylphenol	ug/L	37	543	10 U	11 U	10 U	10 U	1.6 U	-	10 U	10 U	-
4-Nitroaniline	ug/L	3.8		20 U	21 U	21 U	20 U	4.1 U	4.0 U	10 U	10 U	-
4-Nitrophenol	ug/L			30 U	32 U	31 U	31 U	2.4 U	-	20 U	20 U	-
Acenaphthene	ug/L	53	5.8	10 U	11 U	10 U	10 U	3.8 U	3.8 U	10 U	10 U	-
Acenaphthylene	ug/L			10 U	11 U	10 U	10 U	4.1 U	4.1 U	10 U	10 U	-
Acetophenone	ug/L	190		10 U	11 U	10 U	10 U	4.4 U	4.3 U	10 U	10 U	-
Anthracene	ug/L	180	0.012	10 U	11 U	10 U	10 U	3.6 U	3.6 U	10 UJ	10 U	-
Atrazine	ug/L	0.3	1.8	10 U	11 U	10 U	10 U	4.9 U	4.8 U	2.0 U	2.0 U	-
Benzaldehyde	ug/L	19		10 U	11 U	10 UJ	10 UJ	1.4 UJ	1.4 UJ	10 U	10 U	-
Benzo(a)anthracene	ug/L	0.03	0.018	1.0 U	1.1 U	1.0 U	1.0 U	0.020 U	0.020 U	1.0 U	1.0 U	-
Benzo(a)pyrene	ug/L	0.025	0.015	1.0 U	1.1 U	1.0 U	1.0 U	0.031 U	0.030 U	1.0 U	1.0 U	-
Benzo(b)fluoranthene	ug/L	0.25		1.0 U	1.1 U	1.0 U	1.0 U	0.041 U	0.040 U	1.0 U	2.0 U	-
Benzo(g,h,i)perylene	ug/L			10 U	11 U	10 U	10 U	2.8 U	2.7 U	10 U	10 U	-
Benzo(k)fluoranthene	ug/L	2.5		1.0 U	1.1 U	1.0 U	1.0 U	0.31 U	0.30 U	1.0 U	1.0 U	-
Biphenyl (1,1-Biphenyl)	ug/L	0.083	14	10 U	11 U	10 U	10 U	5.5 U	5.5 U	10 U	10 U	-
bis(2-Chloroethoxy)methane	ug/L	5.9		10 U	11 U	10 U	10 U	3.5 U	3.5 U	10 U	10 U	-
bis(2-Chloroethyl)ether	ug/L	0.014		1.0 U	1.1 U	1.0 U	1.0 U	0.42 U	0.41 U	1.0 U	1.0 U	-
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	5.6	16	10 UJ	11 U	10 U	10 U	2.4 U	2.4 U	2.0 U	2.0 U	-
Butyl benzylphthalate (BBP)	ug/L	16	19	10 U	11 U	10 U	10 U	2.8 U	2.8 U	10 U	10 U	-
Caprolactam	ug/L	990		10 U	11 U	10 U	10 U	0.51 U	R	10 U	10 U	-
Carbazole	ug/L			10 U	11 U	10 U	10 U	3.1 U	3.1 U	10 U	10 U	-
Chrysene	ug/L	25		10 U	11 U	10 U	10 U	3.8 U	3.8 U	2.0 U	2.0 U	-
Dibenz(a,h)anthracene	ug/L	0.025		1.0 U	1.1 U	1.0 U	1.0 U	0.16 U	0.16 U	1.0 U	1.0 U	-
Dibenzofuran	ug/L	0.79	3.7	10 U	11 U	10 U	10 U	3.7 U	3.6 U	10 UJ	10 U	-
Diethyl phthalate	ug/L	1500	210	10 U	11 U	10 U	10 U	3.9 U	3.9 U	10 U	10 U	-
Dimethyl phthalate	ug/L			10 U	11 U	10 U	10 U	3.3 U	3.3 U	10 U	10 U	-
Di-n-butylphthalate (DBP)	ug/L	90	19	10 U	11 U	10 U	10 U	2.8 U	2.8 U	10 U	10 U	-
Di-n-octyl phthalate (DnOP)	ug/L	20	22	10 U	11 U	10 U	10 U	1.9 U	1.9 U	10 U	10 U	-
Fluoranthene	ug/L	80	0.04	10 U	11 U	10 U	10 U	2.7 U	2.7 U	10 U	10 U	-
Fluorene	ug/L	29	3	10 U	11 U	10 U	10 U	3.3 U	3.3 U	10 U	10 U	-
Hexachlorobenzene	ug/L	0.0098	0.0003	1.0 U	1.1 U	1.0 U	1.0 U	0.010 U	0.010 U	1.0 U	1.0 U	-
Hexachlorobutadiene	ug/L	0.14	1.3	2.0 U	2.1 U	2.1 U	2.0 U	0.96 U	0.95 UJ	1.0 U	1.0 U	-
Hexachlorocyclopentadiene	ug/L	0.041		10 U	11 U	10 U	10 U	4.7 U	4.6 U	10 U	10 U	-
Hexachloroethane	ug/L	0.33	12	1.0 U	1.1 U	1.0 U	1.0 U	0.51 U	0.51 U	1.0 U	2.0 U	-
Indeno(1,2,3-cd)pyrene	ug/L	0.25		1.0 U	1.1 U	1.0 U	1.0 U	0.12 U	0.12 U	1.0 U	2.0 U	-
Isophorone	ug/L	78		10 U	11 U	10 U	10 U	3.7 U	3.6 U	10 U	10 U	-
Naphthalene	ug/L	0.12	1.1	18 ^{ab}	83 ^{ab}	220 ^{ab}	220 ^{ab}	100 J ^{ab}	110 ^{ab}	10 UJ	10 U	-
Nitrobenzene	ug/L	0.14		1.0 U	1.1 U	1.0 U	1.0 U	0.42 U	0.41 U	1.0 UJ	1.0 U	-
N-Nitrosodi-n-propylamine	ug/L	0.011		1.0 U	1.1 U	1.0 U	1.0 U	0.33 U	0.32 U	1.0 U	1.0 U	-
N-Nitrosodiphenylamine	ug/L	12	210	10 U	11 U	10 U	10 U	3.9 U	3.9 U	10 U	10 U	-
Pentachlorophenol	ug/L	0.041	0.5	30 U	32 U	31 U	31 U	0.14 U	-	20 U	20 U	-
Phenanthrene	ug/L	12	0.4	10 U	11 U	10 U	10 U	3.6 U	3.6 U	10 U	10 U	-
Phenol	ug/L	580	4	10 U	11 U	10 UJ	10 UJ	0.91 U	-	10 U	10 U	-
Pyrene	ug/L	12	0.025	10 U	11 U	10 U	10 U	4.4 U	4.3 U	10 U	10 U	-

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-2 MW-8 GW-017338-050809-ACH-004 05/08/2009 (Duplicate)	OU-2 MW-8 GW-017338-081809-ACH-05 08/18/2009	OU-2 MW-8 GW-017338-111209-ACH-03 11/12/2009	OU-2 MW-8 GW-017338-111209-ACH-04 11/12/2009 (Duplicate)	OU-2 MW-8 GW-017338-030110-ACH-003 03/01/2010	OU-2 MW-8 GW-017338-051810-ACH-02 05/18/2010	OU-2 MW-8 WG-17338-110617-SG-044 11/06/2017	OU-2 MW-8 WG-17338-062618-AM-003 06/26/2018	OU-2 MW-8R GW-11222397-011123-ZB-07 01/11/2023
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)									
Metals												
Aluminum	ug/L	a 2000	b 87	1050 ^b	6530 ^{ab}	2530 J ^{ab}	2410 J ^{ab}	1050 ^b	5190 J ^{ab}	214 ^b	845 ^b	-
Aluminum (dissolved)	ug/L	2000	87	-	-	-	-	-	-	-	-	-
Antimony	ug/L	0.78	30	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	4.6 U	2.0 U	2.0 U	-
Antimony (dissolved)	ug/L	0.78	30	-	-	-	-	-	-	-	-	-
Arsenic	ug/L	0.052	5	5.0 U	5.0 U	3.9 J ^a	4.4 J ^a	5.0 U	3.8 U	6.1 ^{ab}	7.9 ^{ab}	-
Arsenic (dissolved)	ug/L	0.052	5	-	-	-	-	-	-	-	-	-
Barium	ug/L	380	4	465 ^{ab}	614 ^{ab}	613 ^{ab}	618 ^{ab}	427 ^{ab}	474 ^{ab}	184 ^b	170 ^b	-
Barium (dissolved)	ug/L	380	4	-	-	-	-	-	-	-	-	-
Beryllium	ug/L	2.5	0.66	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	0.94 U	0.80 U	0.80 U	-
Beryllium (dissolved)	ug/L	2.5	0.66	-	-	-	-	-	-	-	-	-
Cadmium	ug/L	0.18	0.25	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	0.92 U	2.0 U	2.0 U	-
Cadmium (dissolved)	ug/L	0.18	0.25	-	-	-	-	-	-	-	-	-
Calcium	ug/L			46600	61300	60100	60100	49400	58900	18400	18700	-
Calcium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-
Chromium	ug/L	10	85	10.0 U	5.8 J	10.0 U	10.0 U	10.0 U	3.2 J	4.0 U	1.3 J	-
Chromium (dissolved)	ug/L	10	85	-	-	-	-	-	-	-	-	-
Chromium VI (hexavalent)	ug/L	0.035	11	-	-	-	-	-	-	-	-	-
Chromium VI (hexavalent) (dissolved)	ug/L	0.035	11	-	-	-	-	-	-	-	-	-
Cobalt	ug/L	0.6	23	16.1 J ^a	21.5 J ^a	21.8 J ^a	21.4 J ^a	18.1 J ^a	20.3 J ^a	5.4 ^a	10.9 ^a	-
Cobalt (dissolved)	ug/L	0.6	23	-	-	-	-	-	-	-	-	-
Copper	ug/L	80	9	25.0 U	31.3 ^b	25.0 U	25.0 U	25.0 U	3.6 U	4.0 U	4.0 U	-
Copper (dissolved)	ug/L	80	9	-	-	-	-	-	-	-	-	-
Iron	ug/L	1400	300	63800 ^{ab}	87500 ^{ab}	85100 ^{ab}	85100 ^{ab}	62000 ^{ab}	74500 ^{ab}	27000 ^{ab}	34700 ^{ab}	-
Iron (dissolved)	ug/L	1400	300	-	-	-	-	-	-	-	-	-
Lead	ug/L	15	2.5	3.4 J ^b	5.0 U	5.0 U	5.0 U	5.0 U	7.0 ^b	1.2 U	0.74 J	-
Lead (dissolved)	ug/L	15	2.5	-	-	-	-	-	-	-	-	-
Magnesium	ug/L			31300	42000	40800	40800	30600	36200	14700	18500	-
Magnesium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-
Manganese	ug/L	43	120	1620 ^{ab}	2070 ^{ab}	1980 ^{ab}	1980 ^{ab}	1690 ^{ab}	1990 ^{ab}	524 ^{ab}	598 ^{ab}	-
Manganese (dissolved)	ug/L	43	120	-	-	-	-	-	-	-	-	-
Mercury	ug/L	0.063	0.026	0.20 U	0.33 ^{ab}	0.20 U	0.20 U	0.20 U	0.18 U	0.20 U	0.20 U	-
Mercury (dissolved)	ug/L	0.063	0.026	-	-	-	-	-	-	-	-	-
Nickel	ug/L	39	52	40.0 U	5.5 J	40.0 U	40.0 U	40.0 U	5.0 J	4.0 U	1.6 J	-
Nickel (dissolved)	ug/L	39	52	-	-	-	-	-	-	-	-	-
Potassium	ug/L			3390 J	3760 J	4020 J	4110 J	3230 J	3600 J	2600	2180	-
Potassium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-
Selenium	ug/L	10	1	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	4.8 U	10.0 U	10.0 U	-
Selenium (dissolved)	ug/L	10	1	-	-	-	-	-	-	-	-	-
Silver	ug/L	9.4	3.2	10.0 U	10.0 U	10.0 U	10.0 U	1.6 J	0.97 U	2.0 U	2.0 U	-
Silver (dissolved)	ug/L	9.4	3.2	-	-	-	-	-	-	-	-	-
Sodium	ug/L			98500	101000	109000	109000	86700	93900	46800	49300	-
Sodium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-
Thallium	ug/L	0.02	0.8	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	4.6 U	0.80 U	0.80 U	-
Thallium (dissolved)	ug/L	0.02	0.8	-	-	-	-	-	-	-	-	-
Vanadium	ug/L	8.6	20	50.0 U	8.5 J	3.0 J	3.1 J	50.0 U	5.8 J	4.0 U	1.2 J	-
Vanadium (dissolved)	ug/L	8.6	20	-	-	-	-	-	-	-	-	-
Zinc	ug/L	600	120	30.0 U	8.9 J	30.0 U	30.0 U	30.0 U	10.5 J	16.0 U	16.0 U	-
Zinc (dissolved)	ug/L	600	120	-	-	-	-	-	-	-	-	-

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

		Operable Unit: Sample Location: Sample ID: Sample Date:	OU-2 MW-9 MW9-060205EAP003 06/02/2005	OU-2 MW-9 MW9A060205EAP004 06/02/2005 (Duplicate)	OU-2 MW-9 WG-17338-111405-RR-016 11/14/2005	OU-2 MW-9 GW17338082106003 08/21/2006	OU-2 MW-9 GW-17338-121206-MJW-05 12/12/2006	OU-2 MW-9 GW-17338-121206-MJW-06 12/12/2006 (Duplicate)	OU-2 MW-9 GW-17338-080408-03 08/04/2008	OU-2 MW-9 GW-17338-112008-03 11/20/2008	OU-2 MW-9 GW-17338-112008-04 11/20/2008 (Duplicate)	OU-2 MW-9 GW-017338-022309-001 02/23/2009	OU-2 MW-9 GW-017338-050809-ACH-001 05/08/2009
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)										
Volatile Organic Compounds													
1,1,1-Trichloroethane	ug/L	200	11	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	0.076	610	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	0.041	1200	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	2.8	47	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	7	25	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	0.4	24	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	-	-	1.0 U	1.0 U
1,2,4-Trimethylbenzene	ug/L	5.6		-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.00033		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	-	-	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.0075		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	-	-	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	30	0.7	5.0 U	0.2 J	5.0 U	5.0 U	5.0 U	5.0 U	-	-	0.2 J	1.0 U
1,2-Dichloroethane	ug/L	0.17	100	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	0.82		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	ug/L	6	71	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ug/L			5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	-	-	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	0.48	26	5.0 U	0.5 J ^a	5.0 U	5.0 U	5.0 U	5.0 U	-	-	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	560	14000	R	R	R	5.0 U	R	5.0 U	5.0 U	5.0 U	10 U	10 U
2-Hexanone	ug/L	3.8	99	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	630	170	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	10 U
Acetone	ug/L	1800	1500	5.0 U	5.0 U	5.0 U	R	R	R	5.0 U	5.0 U	10 U	10 UJ
Benzene	ug/L	0.46	370	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	0.13		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	3.3	320	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	0.75		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	81	0.92	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	0.46	13.3	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	7.8	1.3	1.3 J	0.6 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Chloroethane	ug/L	830		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	0.22	1.8	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	19		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	2.5		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L			5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1300		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	-	-	1.0 U	1.0 U
Dibromochloromethane	ug/L	0.87		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	20		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	-	-	1.0 U	1.0 U
Ethylbenzene	ug/L	1.5	90	2.8 J ^a	1.0 J	8.0 ^a	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	45	2.6	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	-	-	1.0 U	1.0 U
Methyl acetate	ug/L	2000		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	-	-	1.0 U	2.0 U
Methyl cyclohexane	ug/L			5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	-	-	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	10	11070	5.0 U	5.0 U	5.0 U	5.0 U	0.4 J	0.4 J	0.2 J	-	1.0 U	1.0 U
Methylene chloride	ug/L	5	98.1	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	1.0 U	1.0 U
Styrene	ug/L	100	72	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1	111	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	110	2	23 J ^b	9.6 UJ	12 ^b	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	0.5 J	1.0 U
trans-1,2-Dichloroethene	ug/L	6.8	970	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L			5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	0.28	21	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	520		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	-	-	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1000		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	-	-	1.0 U	1.0 U
Vinyl chloride	ug/L	0.019	930	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	19	13	3.8 J	1.3 J	11	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

		Operable Unit: Sample Location: Sample ID: Sample Date:	OU-2 MW-9 MW9-060205EAP003 06/02/2005	OU-2 MW-9 MW9A060205EAP004 06/02/2005 (Duplicate)	OU-2 MW-9 WG-17338-111405-RR-016 11/14/2005	OU-2 MW-9 GW17338082106003 08/21/2006	OU-2 MW-9 GW-17338-121206-MJW-05 12/12/2006	OU-2 MW-9 GW-17338-121206-MJW-06 12/12/2006 (Duplicate)	OU-2 MW-9 GW-17338-080408-03 08/04/2008	OU-2 MW-9 GW-17338-112008-03 11/20/2008	OU-2 MW-9 GW-17338-112008-04 11/20/2008 (Duplicate)	OU-2 MW-9 GW-017338-022309-001 02/23/2009	OU-2 MW-9 GW-017338-050809-ACH-001 05/08/2009
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)										
Semi-Volatile Organic Compounds													
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	71		10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	ug/L	120		10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	ug/L	1.2	4.9	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	ug/L	4.6	11	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	ug/L	36		10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	ug/L	3.9		41 U	40 U	43 U	32 UJ	32 U	31 U	30 U	30 U	30 U	30 U
2,4-Dinitrotoluene	ug/L	0.24	44	2.0 U	2.0 U	2.2 U	2.1 U	2.2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,6-Dinitrotoluene	ug/L	0.049	81	2.0 U	2.0 U	2.2 U	2.1 U	2.2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Chloronaphthalene	ug/L	75		10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	ug/L	9.1	24	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	ug/L	3.6	4.7	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	ug/L	93	13	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	ug/L	19		20 U	20 U	22 U	21 U	22 U	20 U	20 U	20 U	20 U	20 U
2-Nitrophenol	ug/L			10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	ug/L	0.13	4.5	20 U	20 U	22 U	21 U	22 U	20 U	20 U	20 U	20 U	20 U
3-Nitroaniline	ug/L			20 U	20 U	22 U	21 U	22 U	20 U	20 U	20 U	20 U	20 U
4,6-Dinitro-2-methylphenol	ug/L	0.15		41 U	40 U	43 U	32 UJ	32 U	31 U	30 U	30 U	30 U	30 U
4-Bromophenyl phenyl ether	ug/L			10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	ug/L	140		10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	ug/L	0.37	232	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl phenyl ether	ug/L			10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	ug/L	37	543	10 U	10 U	11 U	10 U	11 U	10 U	-	-	10 U	10 U
4-Nitroaniline	ug/L	3.8		20 U	20 U	22 U	21 U	22 U	20 U	20 U	20 U	20 U	20 U
4-Nitrophenol	ug/L			41 U	40 U	43 U	32 U	32 U	31 U	30 U	30 U	30 U	30 U
Acenaphthene	ug/L	53	5.8	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	ug/L			10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Acetophenone	ug/L	190		10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Anthracene	ug/L	180	0.012	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Atrazine	ug/L	0.3	1.8	10 UJ	10 UJ	11 UJ	10 U	11 UJ	10 U	10 U	10 U	10 U	10 U
Benzaldehyde	ug/L	19		10 UJ	10 UJ	11 UJ	10 UJ	11 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Benzo(a)anthracene	ug/L	0.03	0.018	1.0 U	1.0 U	1.1 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)pyrene	ug/L	0.025	0.015	1.0 U	1.0 U	1.1 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(b)fluoranthene	ug/L	0.25		1.0 U	1.0 U	1.1 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(g,h,i)perylene	ug/L			10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	ug/L	2.5		1.0 U	1.0 U	1.1 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Biphenyl (1,1-Biphenyl)	ug/L	0.083	14	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane	ug/L	5.9		10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethyl)ether	ug/L	0.014		1.0 U	1.0 U	1.1 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	5.6	16	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 UJ
Butyl benzylphthalate (BBP)	ug/L	16	19	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Caprolactam	ug/L	990		10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	0.3 J	10 U
Carbazole	ug/L			10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Chrysene	ug/L	25		10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene	ug/L	0.025		1.0 U	1.0 U	1.1 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran	ug/L	0.79	3.7	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	ug/L	1500	210	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	ug/L			10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate (DBP)	ug/L	90	19	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate (DnOP)	ug/L	20	22	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	ug/L	80	0.04	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Fluorene	ug/L	29	3	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	ug/L	0.0098	0.0003	1.0 U	1.0 U	1.1 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Hexachlorobutadiene	ug/L	0.14	1.3	2.0 U	2.0 U	2.2 U	2.1 U	2.2 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexachlorocyclopentadiene	ug/L	0.041		10 U	10 U	11 U	10 UJ	11 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	ug/L	0.33	12	1.0 U	1.0 U	1.1 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Indeno(1,2,3-cd)pyrene	ug/L	0.25		1.0 U	1.0 U	1.1 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isophorone	ug/L	78		10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	ug/L	0.12	1.1	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	ug/L	0.14		1.0 U	1.0 U	1.1 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
N-Nitrosodi-n-propylamine	ug/L	0.011		1.0 U	1.0 U	1.1 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
N-Nitrosodiphenylamine	ug/L	12	210	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	ug/L	0.041	0.5	41 U	40 U	43 U	32 UJ	32 U	31 U	30 U	30 U	30 U	30 U
Phenanthrene	ug/L	12	0.4	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Phenol	ug/L	580	4	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U
Pyrene	ug/L	12	0.025	10 U	10 U	11 U	10 U	11 U	10 U	10 U	10 U	10 U	10 U

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Operable Unit: Sample Location: Sample ID: Sample Date:				OU-2 MW-9 MW9-060205EAP003 06/02/2005	OU-2 MW-9 MW9A060205EAP004 06/02/2005 (Duplicate)	OU-2 MW-9 WG-17338-111405-RR-016 11/14/2005	OU-2 MW-9 GW17338082106003 08/21/2006	OU-2 MW-9 GW-17338-121206-MJW-05 12/12/2006	OU-2 MW-9 GW-17338-121206-MJW-06 12/12/2006 (Duplicate)	OU-2 MW-9 GW-17338-080408-03 08/04/2008	OU-2 MW-9 GW-17338-112008-03 11/20/2008	OU-2 MW-9 GW-17338-112008-04 11/20/2008 (Duplicate)	OU-2 MW-9 GW-017338-022309-001 02/23/2009	OU-2 MW-9 GW-017338-050809-ACH-001 05/08/2009
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)											
Metals		a	b											
Aluminum	ug/L	2000	87	2860 ^{ab}	1930 ^b	-	395 ^b	541 ^b	328 U	1000 ^b	1460 ^b	1470 ^b	3670 ^{ab}	6220 ^{ab}
Aluminum (dissolved)	ug/L	2000	87	-	-	-	200 U	200 U	200 U	-	-	-	-	-
Antimony	ug/L	0.78	30	12 U	12 U	-	10 U	10 U	10 U	8.4 U	6.7 J ^a	10 U	10 U	10.0 U
Antimony (dissolved)	ug/L	0.78	30	-	-	-	10 U	10 U	10 U	-	-	-	-	-
Arsenic	ug/L	0.052	5	6.4 U	6.4 U	-	5 U	4.2 U	4.2 U	5.9 U	4.2 U	4.2 U	4.2 U	5.0 U
Arsenic (dissolved)	ug/L	0.052	5	-	-	-	5 U	4.2 U	4.2 U	-	-	-	-	-
Barium	ug/L	380	4	193 ^b	180 ^a	-	172 J ^b	163 J ^b	158 J ^b	284 ^b	287 ^b	287 ^a	275 ^b	278 ^b
Barium (dissolved)	ug/L	380	4	-	-	-	170 J ^b	174 J ^b	176 J ^b	-	-	-	-	-
Beryllium	ug/L	2.5	0.66	0.33	0.23	-	2 U	2 U	2 U	0.13 J	2 U	2 U	2 U	2.0 U
Beryllium (dissolved)	ug/L	2.5	0.66	-	-	-	2 U	2 U	2 U	-	-	-	-	-
Cadmium	ug/L	0.18	0.25	5 U	5 U	-	4 U	4 U	4 U	5 U	4 U	4 U	4 U	5.0 U
Cadmium (dissolved)	ug/L	0.18	0.25	-	-	-	4 U	4 U	4 U	-	-	-	-	-
Calcium	ug/L			29800	28000	-	30400	30100	29700	52100	58500	58300	61200	51400
Calcium (dissolved)	ug/L			-	-	-	30200	32600	32000	-	-	-	-	-
Chromium	ug/L	10	85	6.1	5.1	-	10 U	10 U	10 U	3.4 J	3.3 J	3.6 J	6.9 J	10.6 ^a
Chromium (dissolved)	ug/L	10	85	-	-	-	10 U	10 U	10 U	-	-	-	-	-
Chromium VI (hexavalent)	ug/L	0.035	11	-	-	10 U	10.0 U	-	-	-	-	-	-	-
Chromium VI (hexavalent) (dissolved)	ug/L	0.035	11	-	-	-	10.0 U	-	-	-	-	-	-	-
Cobalt	ug/L	0.6	23	4.2 ^a	3.6 ^a	-	50 U	50 U	50 U	100 U	50 U	50 U	3.9 J ^a	4.8 J ^a
Cobalt (dissolved)	ug/L	0.6	23	-	-	-	50 U	50 U	50 U	-	-	-	-	-
Copper	ug/L	80	9	5.2	5.3	-	25 U	25 U	25 U	21 U	25 U	25 U	25.6 ^b	26.6 ^b
Copper (dissolved)	ug/L	80	9	-	-	-	25 U	25 U	25 U	-	-	-	-	-
Iron	ug/L	1400	300	12200 ^{ab}	8170 ^{ab}	-	1450 ^{ab}	1250 ^b	1280 ^b	3940 ^{ab}	5030 ^{ab}	5570 ^{ab}	14300 ^{ab}	22900 ^{ab}
Iron (dissolved)	ug/L	1400	300	-	-	-	150 U	150 U	150 U	-	-	-	-	-
Lead	ug/L	15	2.5	3 U	3 U	-	3.2 U	3 U	3 U	2.4 U	3 U	3 U	3 U	4.5 J ^b
Lead (dissolved)	ug/L	15	2.5	-	-	-	3 U	3 U	3 U	-	-	-	-	-
Magnesium	ug/L			12400	11600	-	13100	13400	13100	26000	28200	28200	30100	25600
Magnesium (dissolved)	ug/L			-	-	-	13100	14400	14300	-	-	-	-	-
Manganese	ug/L	43	120	276 ^{ab}	236 ^{ab}	-	222 ^{ab}	238 ^{ab}	227 ^{ab}	682 ^{ab}	627 ^{ab}	619 ^{ab}	607 ^{ab}	531 ^{ab}
Manganese (dissolved)	ug/L	43	120	-	-	-	211 ^{ab}	258 ^{ab}	285 ^{ab}	-	-	-	-	-
Mercury	ug/L	0.063	0.026	0.20 U	0.20 U	-	0.20 U	0.20 U	0.20 U	0.28 ^{ab}	0.29 ^{ab}	0.28 ^{ab}	0.38 ^{ab}	0.40 ^{ab}
Mercury (dissolved)	ug/L	0.063	0.026	-	-	-	0.20 U	0.20 U	0.20 U	-	-	-	-	-
Nickel	ug/L	39	52	4.8	40 U	-	40 U	3.2 J	3.2 J	65 U	4.6 J	4.3 J	6.2 J	6.9 J
Nickel (dissolved)	ug/L	39	52	-	-	-	40 U	2.6 J	40 U	-	-	-	-	-
Potassium	ug/L			4100	3860	-	4450 J	5380	5180	8580	9190	9150	9270	8570
Potassium (dissolved)	ug/L			-	-	-	4510 J	5600	5580	-	-	-	-	-
Selenium	ug/L	10	1	5.1 U	5.1 U	-	5 U	5 U	5 U	5.7 U	5 U	5 U	5 U	10.0 U
Selenium (dissolved)	ug/L	10	1	-	-	-	5 U	5 U	5 U	-	-	-	-	-
Silver	ug/L	9.4	3.2	15 U	15 U	-	10 U	10 U	10 U	8.6 U	10 U	10 U	10 U	1.7 J
Silver (dissolved)	ug/L	9.4	3.2	-	-	-	10 U	10 U	10 U	-	-	-	-	-
Sodium	ug/L			46200	43600	-	52100	42100	40900	117000	153000	152000	140000	133000
Sodium (dissolved)	ug/L			-	-	-	52500	44600	44900	-	-	-	-	-
Thallium	ug/L	0.02	0.8	11 U	11 U	-	10 U	9.5 U	9.5 U	9.7 U	9.5 U	9.5 U	9.5 U	10.0 U
Thallium (dissolved)	ug/L	0.02	0.8	-	-	-	10 U	9.5 U	9.5 U	-	-	-	-	-
Vanadium	ug/L	8.6	20	5.5	3.9	-	50 U	50 U	50 U	1.7 J	50 U	50 U	50 U	50.0 U
Vanadium (dissolved)	ug/L	8.6	20	-	-	-	50 U	50 U	50 U	-	-	-	-	-
Zinc	ug/L	600	120	13.6	11.6	-	30 U	30 U	30 U	8.2 J	30 U	30 U	16.7 J	19.1 J
Zinc (dissolved)	ug/L	600	120	-	-	-	30 U	30 U	30 U	-	-	-	-	-

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-2 MW-9 GW-017338-081709-ACH-01 08/17/2009	OU-2 MW-9 GW-017338-111209-ACH-02 11/12/2009	OU-2 MW-9 GW-017338-030110-ACH-001 03/01/2010	OU-2 MW-9 GW-017338-051810-ACH-03 05/18/2010	OU-2 MW-9 GW-017338-051810-ACH-04 05/18/2010 (Duplicate)	OU-2 MW-9 WG-17338-110417-SG-024 11/04/2017	OU-2 MW-9 WG-17338-062618-AM-004 06/26/2018	OU-2 MW-9R GW-11222397-011123-ZB-10 01/11/2023	OU-2 MW-19 GW1733809070609 09/07/2006	OU-2 MW-19 GW-17338-121206-MJW-03 12/12/2006
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)										
Volatile Organic Compounds													
1,1,1-Trichloroethane	ug/L	200	11	1.0 U	1.0 U	1.0 U	0.25 U	0.25 U	1.0 U	1.0 U	0.24 U	5.0 U	5.0 U
1,1,2,2-Tetrachloroethane	ug/L	0.076	610	1.0 U	1.0 U	1.0 U	0.090 U	0.090 U	1.0 U	1.0 U	0.37 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	0.041	1200	1.0 U	1.0 U	1.0 U	0.10 U	0.10 U	1.0 U	1.0 U	0.20 U	3.0 U	3.0 U
1,1-Dichloroethane	ug/L	2.8	47	1.0 U	1.0 U	1.0 U	0.10 U	0.10 U	1.0 U	1.0 U	0.26 U	5.0 U	5.0 U
1,1-Dichloroethene	ug/L	7	25	1.0 U	1.0 U	1.0 U	0.14 U	0.14 U	1.0 U	1.0 U	0.26 U	2.0 U	2.0 U
1,2,4-Trichlorobenzene	ug/L	0.4	24	1.0 U	1.0 U	1.0 U	0.44 U	0.44 U	1.0 U	1.0 U	0.37 U	5.0 U	0.7 J ^a
1,2,4-Trimethylbenzene	ug/L	5.6		-	-	-	-	-	1.0 U	1.0 U	0.37 U	-	-
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.00033		1.0 U	1.0 UJ	1.0 U	0.15 U	0.15 U	1.0 U	1.0 U	0.38 UJ	5.0 U	5.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.0075		1.0 U	1.0 U	1.0 U	0.090 U	0.090 U	1.0 U	1.0 U	0.50 U	5.0 U	5.0 U
1,2-Dichlorobenzene	ug/L	30	0.7	1.0 U	1.0 U	1.0 U	0.16 U	0.16 U	1.0 U	1.0 U	0.21 U	5.1 ^b	4.8 J ^b
1,2-Dichloroethane	ug/L	0.17	100	1.0 U	1.0 U	1.0 U	0.24 U	0.24 U	1.0 U	1.0 U	0.43 U	2.0 U	2.0 U
1,2-Dichloropropane	ug/L	0.82		1.0 U	1.0 U	1.0 U	0.090 U	0.090 U	1.0 U	1.0 U	0.35 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	ug/L	6	71	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ug/L			1.0 U	1.0 U	1.0 U	0.22 U	0.22 U	1.0 U	1.0 U	0.34 U	0.6 J	1.0 J
1,4-Dichlorobenzene	ug/L	0.48	26	1.0 U	1.0 U	1.0 U	0.15 U	0.15 U	1.0 U	1.0 U	0.33 U	9.3 ^a	4.1 J ^a
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	560	14000	R	10 UJ	10 U	0.82 U	0.82 U	5.0 U	5.0 U	1.9 U	R	R
2-Hexanone	ug/L	3.8	99	10 U	10 U	10 U	0.55 U	0.55 U	5.0 U	5.0 U	1.1 U	5.0 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	630	170	10 U	10 U	R	0.68 U	0.68 U	5.0 U	5.0 U	1.3 U	5.0 U	5.0 U
Acetone	ug/L	1800	1500	R	R	R	2.5 U	2.5 U	7.1 U	5.0 U	4.4 U	R	R
Benzene	ug/L	0.46	370	1.0 U	1.0 U	1.0 U	0.13 U	0.13 U	1.0 U	1.0 U	0.20 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	0.13		1.0 U	1.0 U	1.0 U	0.093 U	0.093 U	1.0 U	1.0 U	0.34 U	1.0 U	1.0 U
Bromoform	ug/L	3.3	320	1.0 U	1.0 U	1.0 U	0.10 U	0.10 U	1.0 U	1.0 U	0.54 U	4.0 U	4.0 U
Bromomethane (Methyl bromide)	ug/L	0.75		1.0 UJ	1.0 U	1.0 U	0.31 U	0.31 U	1.0 U	1.0 U	0.55 U	5.0 U	5.0 U
Carbon disulfide	ug/L	81	0.92	1.0 U	1.0 U	1.0 U	0.15 U	0.15 U	1.0 U	1.0 U	0.82 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	0.46	13.3	1.0 U	1.0 U	1.0 U	0.19 U	0.19 U	1.0 U	1.0 U	0.21 U	2.0 U	2.0 U
Chlorobenzene	ug/L	7.8	1.3	1.0 U	1.0 U	1.0 U	0.16 U	0.16 U	1.0 U	1.0 U	0.38 U	9.1 ^{ab}	1.0 J
Chloroethane	ug/L	830		1.0 U	1.0 UJ	1.0 U	0.45 U	0.45 U	1.0 U	1.0 U	0.32 U	5.0 U	5.0 U
Chloroform (Trichloromethane)	ug/L	0.22	1.8	1.0 U	1.0 U	1.0 U	0.15 U	0.15 U	1.0 U	1.0 U	0.33 U	5.0 U	5.0 U
Chloromethane (Methyl chloride)	ug/L	19		1.0 U	1.0 U	1.0 U	0.21 U	0.21 U	1.0 U	1.0 U	0.40 U	5.0 U	5.0 U
cis-1,2-Dichloroethene	ug/L	2.5		1.0 U	1.0 U	1.0 U	0.20 U	0.20 U	1.0 U	1.0 U	0.22 U	5.0 U	5.0 U
cis-1,3-Dichloropropene	ug/L			1.0 U	1.0 U	1.0 U	0.11 U	0.11 U	1.0 U	1.0 U	0.22 U	5.0 U	5.0 U
Cyclohexane	ug/L	1300		1.0 U	1.0 U	1.0 U	0.13 U	0.13 U	1.0 U	1.0 U	0.32 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	0.87		1.0 U	1.0 U	1.0 U	0.11 U	0.11 U	1.0 U	1.0 U	0.28 U	5.0 U	5.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	20		1.0 U	1.0 U	1.0 U	0.29 U	0.29 U	1.0 U	1.0 U	0.31 U	5.0 U	5.0 U
Ethylbenzene	ug/L	1.5	90	1.0 U	1.0 U	1.0 U	0.25 U	0.25 U	1.0 U	1.0 U	0.30 U	1.4 J	4.0 U
Isopropyl benzene	ug/L	45	2.6	1.0 U	1.0 U	1.0 U	0.21 U	0.21 U	1.0 U	1.0 U	0.34 U	1.0 J	5.0 U
Methyl acetate	ug/L	2000		2.0 U	2.0 U	2.0 U	0.33 U	0.33 U	5.0 U	5.0 U	0.79 U	5.0 U	5.0 U
Methyl cyclohexane	ug/L			1.0 U	1.0 U	1.0 U	0.090 U	0.090 U	1.0 U	1.0 U	0.71 U	5.0 U	5.0 U
Methyl tert butyl ether (MTBE)	ug/L	10	11070	1.0 U	0.18 J	1.0 U	0.44 J	0.40 J	1.0 U	1.0 U	0.22 U	5.0 U	0.5 J
Methylene chloride	ug/L	5	98.1	1.0 U	1.0 U	1.0 U	0.19 U	0.19 U	1.0 U	1.0 U	0.32 U	3.0 U	3.0 U
Styrene	ug/L	100	72	1.0 U	1.0 U	1.0 U	0.13 U	0.13 U	1.0 U	1.0 U	0.42 U	5.0 U	5.0 U
Tetrachloroethene	ug/L	1	111	0.32 J	0.53 J	0.41 J	0.51 J	0.41 J	0.30 J	0.68 J	0.25 U	1.0 U	1.0 U
Toluene	ug/L	110	2	1.0 U	1.0 U	1.0 U	0.090 U	0.090 U	1.0 U	1.0 U	0.38 U	1.2 J	5.0 U
trans-1,2-Dichloroethene	ug/L	6.8	970	1.0 U	1.0 U	1.0 U	0.14 U	0.14 U	1.0 U	1.0 U	0.24 U	5.0 U	5.0 U
trans-1,3-Dichloropropene	ug/L			1.0 U	1.0 U	1.0 U	0.12 U	0.12 U	1.0 U	1.0 U	0.22 U	5.0 U	5.0 U
Trichloroethene	ug/L	0.28	21	1.0 U	1.0 U	1.0 U	0.18 U	0.18 U	1.0 U	1.0 U	0.31 U	1.0 U	1.8 ^a
Trichlorofluoromethane (CFC-11)	ug/L	520		1.0 U	1.0 U	1.0 U	0.16 U	0.16 U	1.0 U	1.0 U	0.33 J	5.0 UJ	5.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1000		1.0 U	1.0 U	1.0 U	0.28 U	0.28 U	1.0 U	1.0 U	0.31 U	5.0 U	5.0 U
Vinyl chloride	ug/L	0.019	930	1.0 U	1.0 U	1.0 U	0.13 U	0.13 U	1.0 U	1.0 U	0.17 U	5.0 U	5.0 U
Xylenes (total)	ug/L	19	13	3.0 U	3.0 U	3.0 U	0.43 U	0.43 U	2.0 U	2.0 U	0.65 U	4.5 J	5.0 U

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Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)										
Semi-Volatile Organic Compounds													
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	71		10 U	5.6 U	3.3 U	3.3 U	3.3 U	10 U	10 U	-	10 U	10 U
2,4,5-Trichlorophenol	ug/L	120		10 U	5.6 U	2.6 U	-	-	10 U	10 U	-	10 U	10 U
2,4,6-Trichlorophenol	ug/L	1.2	4.9	10 U	5.6 U	3.2 U	-	-	10 U	10 U	-	10 U	10 U
2,4-Dichlorophenol	ug/L	4.6	11	10 U	5.6 U	2.8 U	-	-	10 U	10 U	-	10 U	10 U
2,4-Dimethylphenol	ug/L	36		10 U	5.6 U	2.6 U	-	-	10 U	10 U	-	10 U	10 U
2,4-Dinitrophenol	ug/L	3.9		31 UJ	17 UJ	4.9 U	-	-	20 U	20 U	-	31 U	32 U
2,4-Dinitrotoluene	ug/L	0.24	44	2.0 U	1.1 U	0.44 U	0.45 U	0.45 U	2.0 U	2.0 U	-	2.1 U	2.1 U
2,6-Dinitrotoluene	ug/L	0.049	81	2.0 U	1.1 U	0.60 U	0.61 U	0.61 U	2.0 U	2.0 U	-	2.1 U	2.1 U
2-Chloronaphthalene	ug/L	75		10 U	5.6 U	3.8 U	3.9 U	3.9 U	10 U	10 U	-	10 U	10 U
2-Chlorophenol	ug/L	9.1	24	10 U	5.6 U	2.7 U	-	-	10 U	10 U	-	10 U	10 U
2-Methylnaphthalene	ug/L	3.6	4.7	10 U	5.6 U	3.2 U	3.2 U	3.2 U	10 U	10 U	-	10 U	10 U
2-Methylphenol	ug/L	93	13	10 U	5.6 U	1.7 U	-	-	10 U	10 U	-	10 U	10 U
2-Nitroaniline	ug/L	19		20 U	11 U	5.8 U	5.9 U	5.9 U	10 U	10 U	-	21 U	21 U
2-Nitrophenol	ug/L			10 U	5.6 U	3.5 U	-	-	10 U	10 U	-	10 U	10 U
3,3'-Dichlorobenzidine	ug/L	0.13	4.5	20 U	11 U	7.1 U	7.3 U	7.3 U	10 U	10 U	-	21 U	21 U
3-Nitroaniline	ug/L			20 U	11 U	4.4 U	4.5 U	4.5 U	10 U	10 U	-	21 U	21 U
4,6-Dinitro-2-methylphenol	ug/L	0.15		31 U	17 U	5.3 U	-	-	20 U	20 U	-	31 U	32 U
4-Bromophenyl phenyl ether	ug/L			10 U	5.6 U	4.0 U	4.1 U	4.1 U	10 U	10 U	-	10 U	10 U
4-Chloro-3-methylphenol	ug/L	140		10 U	5.6 U	2.0 U	-	-	10 U	10 U	-	10 U	10 U
4-Chloroaniline	ug/L	0.37	232	10 U	5.6 U	2.1 U	2.2 UJ	2.2 UJ	10 U	10 U	-	10 U	10 U
4-Chlorophenyl phenyl ether	ug/L			10 U	5.6 U	4.0 U	4.1 U	4.1 U	10 U	10 U	-	10 U	10 U
4-Methylphenol	ug/L	37	543	10 U	5.6 U	1.6 U	-	-	10 U	10 U	-	10 U	10 U
4-Nitroaniline	ug/L	3.8		20 U	11 U	4.1 U	4.1 U	4.1 U	10 U	10 U	-	21 U	21 U
4-Nitrophenol	ug/L			31 U	17 U	2.4 U	-	-	20 U	20 U	-	31 U	32 U
Acenaphthene	ug/L	53	5.8	10 U	5.6 U	3.8 U	3.9 U	3.9 U	10 U	10 U	-	10 U	10 U
Acenaphthylene	ug/L			10 U	5.6 U	4.1 U	4.2 U	4.2 U	10 U	10 U	-	10 U	10 U
Acetophenone	ug/L	190		10 U	5.6 U	4.4 U	4.5 U	4.5 U	10 U	10 U	-	10 U	10 U
Anthracene	ug/L	180	0.012	10 U	5.6 U	3.6 U	3.7 U	3.7 U	10 U	10 U	-	10 U	10 U
Atrazine	ug/L	0.3	1.8	10 U	5.6 U	4.9 U	5.0 U	5.0 U	2.0 U	2.0 U	-	10 U	10 U
Benzaldehyde	ug/L	19		10 U	5.6 UJ	1.4 UJ	1.4 UJ	1.4 UJ	10 U	10 U	-	10 UJ	10 UJ
Benzo(a)anthracene	ug/L	0.03	0.018	1.0 U	0.56 U	0.020 U	0.021 U	0.021 U	1.0 U	1.0 U	-	1.0 U	1.0 U
Benzo(a)pyrene	ug/L	0.025	0.015	1.0 U	0.56 U	0.031 U	0.031 U	0.031 U	1.0 U	1.0 U	-	1.0 U	1.0 U
Benzo(b)fluoranthene	ug/L	0.25		1.0 U	0.56 U	0.041 U	0.042 U	0.042 U	1.0 U	2.0 U	-	1.0 U	1.0 U
Benzo(g,h,i)perylene	ug/L			10 U	5.6 U	2.8 U	2.8 U	2.8 U	10 U	10 UJ	-	10 U	10 U
Benzo(k)fluoranthene	ug/L	2.5		1.0 U	0.56 U	0.31 U	0.31 U	0.31 U	1.0 U	1.0 U	-	1.0 U	1.0 U
Biphenyl (1,1-Biphenyl)	ug/L	0.083	14	10 U	5.6 U	5.5 U	5.6 U	5.6 U	10 U	10 U	-	10 U	10 U
bis(2-Chloroethoxy)methane	ug/L	5.9		10 U	5.6 U	3.5 U	3.6 U	3.6 U	10 U	10 U	-	10 U	10 U
bis(2-Chloroethyl)ether	ug/L	0.014		1.0 U	0.56 U	0.42 U	0.43 U	0.43 U	1.0 U	1.0 U	-	1.0 U	1.0 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	5.6	16	10 U	5.6 U	2.4 U	2.5 U	2.5 U	2.0 U	2.0 U	-	10 U	10 U
Butyl benzylphthalate (BBP)	ug/L	16	19	10 U	5.6 U	2.8 U	2.9 U	2.9 U	10 U	10 U	-	10 U	10 U
Caprolactam	ug/L	990		10 U	5.6 UJ	0.51 U	R	R	10 U	10 U	-	10 U	10 U
Carbazole	ug/L			10 U	5.6 U	3.1 U	3.2 U	3.2 U	10 U	10 U	-	10 U	10 U
Chrysene	ug/L	25		10 U	5.6 U	3.8 U	3.9 U	3.9 U	2.0 U	2.0 U	-	10 U	10 U
Dibenz(a,h)anthracene	ug/L	0.025		1.0 U	0.56 UJ	0.16 U	0.17 U	0.17 U	1.0 U	1.0 UJ	-	1.0 U	1.0 U
Dibenzofuran	ug/L	0.79	3.7	10 U	5.6 U	3.7 U	3.7 U	3.7 U	10 U	10 U	-	10 U	10 U
Diethyl phthalate	ug/L	1500	210	10 U	5.6 U	3.9 U	4.0 U	4.0 U	10 U	10 U	-	10 U	10 U
Dimethyl phthalate	ug/L			10 U	5.6 U	3.3 U	3.4 U	3.4 U	10 U	10 U	-	10 U	10 U
Di-n-butylphthalate (DBP)	ug/L	90	19	10 U	5.6 U	2.8 U	2.9 U	2.9 U	10 U	10 U	-	10 U	10 U
Di-n-octyl phthalate (DnOP)	ug/L	20	22	10 U	5.6 U	1.9 U	2.0 U	2.0 U	10 U	10 U	-	10 U	10 U
Fluoranthene	ug/L	80	0.04	10 U	5.6 U	2.7 U	2.8 U	2.8 U	10 U	10 U	-	10 U	10 U
Fluorene	ug/L	29	3	10 U	5.6 U	3.3 U	3.4 U	3.4 U	10 U	10 U	-	10 U	10 U
Hexachlorobenzene	ug/L	0.0098	0.0003	1.0 U	0.56 U	0.010 U	0.010 U	0.010 U	1.0 U	1.0 U	-	1.0 U	1.0 U
Hexachlorobutadiene	ug/L	0.14	1.3	2.0 U	1.1 U	0.96 U	0.98 UJ	0.98 UJ	1.0 U	1.0 U	-	2.1 U	2.1 U
Hexachlorocyclopentadiene	ug/L	0.041		10 U	5.6 U	4.7 U	4.8 U	4.8 U	10 U	10 U	-	10 UJ	10 U
Hexachloroethane	ug/L	0.33	12	1.0 U	0.56 U	0.51 U	0.52 U	0.52 U	1.0 U	2.0 U	-	1.0 U	1.0 U
Indeno(1,2,3-cd)pyrene	ug/L	0.25		1.0 U	0.56 U	0.12 U	0.12 U	0.12 U	1.0 U	2.0 U	-	1.0 U	1.0 U
Isophorone	ug/L	78		10 U	5.6 U	3.7 U	3.7 U	3.7 U	10 U	10 U	-	10 U	10 U
Naphthalene	ug/L	0.12	1.1	10 U	5.6 U	3.7 U	3.8 U	3.8 U	10 U	10 U	-	10 U	10 U
Nitrobenzene	ug/L	0.14		1.0 U	0.56 U	0.42 U	0.43 U	0.43 U	1.0 U	1.0 U	-	1.0 U	1.0 U
N-Nitrosodi-n-propylamine	ug/L	0.011		1.0 U	0.56 U	0.33 U	0.33 U	0.33 U	1.0 U	1.0 U	-	1.0 U	1.0 U
N-Nitrosodiphenylamine	ug/L	12	210	10 U	5.6 U	3.9 U	4.0 U	4.0 U	10 U	10 U	-	10 U	10 U
Pentachlorophenol	ug/L	0.041	0.5	31 U	17 U	0.14 U	-	-	20 U	20 U	-	31 U	32 U
Phenanthrene	ug/L	12	0.4	10 U	5.6 U	3.6 U	3.7 U	3.7 U	10 U	10 U	-	10 U	10 U
Phenol	ug/L	580	4	10 U	5.6 UJ	0.91 U	-	-	10 U	10 U	-	10 U	10 U
Pyrene	ug/L	12	0.025	10 U	5.6 U	4.4 U	4.4 U	4.4 U	10 U	10 U	-	10 U	10 U

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-2 MW-9 GW-017338-081709-ACH-01 08/17/2009	OU-2 MW-9 GW-017338-111209-ACH-02 11/12/2009	OU-2 MW-9 GW-017338-030110-ACH-001 03/01/2010	OU-2 MW-9 GW-017338-051810-ACH-03 05/18/2010	OU-2 MW-9 GW-017338-051810-ACH-04 05/18/2010 (Duplicate)	OU-2 MW-9 WG-17338-110417-SG-024 11/04/2017	OU-2 MW-9 WG-17338-062618-AM-004 06/26/2018	OU-2 MW-9R GW-11222397-011123-ZB-10 01/11/2023	OU-2 MW-19 GW1733809070609 09/07/2006	OU-2 MW-19 GW-17338-121206-MJW-03 12/12/2006
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)										
Metals													
Aluminum	ug/L	2000	87	1390 ^b	6460 J ^{ab}	6940 ^{ab}	5410 J ^{ab}	7580 J ^{ab}	233 ^b	344 ^b	-	13500 ^{ab}	16000 ^{ab}
Aluminum (dissolved)	ug/L	2000	87	-	-	-	-	-	-	-	-	200 U	200 U
Antimony	ug/L	0.78	30	10.0 U	10.0 U	10.0 U	4.6 U	4.6 U	2.0 U	2.0 U	-	10 U	10 U
Antimony (dissolved)	ug/L	0.78	30	-	-	-	-	-	-	-	-	10 U	10 U
Arsenic	ug/L	0.052	5	5.0 U	5.0 U	5.0 U	3.8 U	3.8 U	2.0 U	2.0 U	-	4.6 J ^a	3.8 J ^a
Arsenic (dissolved)	ug/L	0.052	5	-	-	-	-	-	-	-	-	5 U	3.2 J ^a
Barium	ug/L	380	4	220 ^b	283 ^b	297 ^b	222 ^b	250 ^b	87.9 ^b	74.1 ^b	-	166 J ^b	274 ^b
Barium (dissolved)	ug/L	380	4	-	-	-	-	-	-	-	-	118 J ^b	188 J ^b
Beryllium	ug/L	2.5	0.66	2.0 U	2.0 U	2.0 U	0.94 U	0.94 U	0.80 U	0.80 U	-	2 U	2 U
Beryllium (dissolved)	ug/L	2.5	0.66	-	-	-	-	-	-	-	-	2 U	2 U
Cadmium	ug/L	0.18	0.25	5.0 U	5.0 U	5.0 U	0.92 U	0.92 U	2.0 U	2.0 U	-	4 U	4 U
Cadmium (dissolved)	ug/L	0.18	0.25	-	-	-	-	-	-	-	-	4 U	4 U
Calcium	ug/L	-	-	55100	53900	54700	48400	48300	11800	11900	-	28200	44300
Calcium (dissolved)	ug/L	-	-	-	-	-	-	-	-	-	-	30200	44600
Chromium	ug/L	10	85	10.0 U	9.8 J	11.3 ^a	8.3 J	11.4 ^a	5.3	4.0	-	16.4 ^a	25.4 ^a
Chromium (dissolved)	ug/L	10	85	-	-	-	-	-	-	-	-	10 U	10 U
Chromium VI (hexavalent)	ug/L	0.035	11	-	-	-	-	-	-	-	-	20.0 U	-
Chromium VI (hexavalent) (dissolved)	ug/L	0.035	11	-	-	-	-	-	-	-	-	10.0 U	-
Cobalt	ug/L	0.6	23	50.0 U	4.3 J ^a	5.9 J ^a	3.9 J ^a	5.7 J ^a	4.0 U	4.0 U	-	50 U	50 U
Cobalt (dissolved)	ug/L	0.6	23	-	-	-	-	-	-	-	-	50 U	50 U
Copper	ug/L	80	9	25.0 U	22.4 J ^b	19.8 J ^b	17.1 J ^b	18.0 J ^b	4.0 U	4.0 U	-	9.8 J ^b	17.5 J ^b
Copper (dissolved)	ug/L	80	9	-	-	-	-	-	-	-	-	25 U	25 U
Iron	ug/L	1400	300	4220 ^{ab}	23100 ^{ab}	25100 ^{ab}	19000 ^{ab}	26600 ^{ab}	704 ^b	1540 ^{ab}	-	8570 ^{ab}	12500 ^{ab}
Iron (dissolved)	ug/L	1400	300	-	-	-	-	-	-	-	-	864 ^b	3020 ^{ab}
Lead	ug/L	15	2.5	5.0 U	5.0 U	8.1 U	7.6 ^b	9.5 ^b	1.2 U	0.84 J	-	8.6 ^b	11.2 ^b
Lead (dissolved)	ug/L	15	2.5	-	-	-	-	-	-	-	-	3 U	3 U
Magnesium	ug/L	-	-	27500	26500	27400	22700	22700	7780	9700	-	7620	12300
Magnesium (dissolved)	ug/L	-	-	-	-	-	-	-	-	-	-	7780	11600
Manganese	ug/L	43	120	536 ^{ab}	386 ^{ab}	435 ^{ab}	296 ^{ab}	278 ^{ab}	117 ^a	93.8 ^a	-	260 ^{ab}	461 ^{ab}
Manganese (dissolved)	ug/L	43	120	-	-	-	-	-	-	-	-	250 ^{ab}	422 ^{ab}
Mercury	ug/L	0.063	0.026	0.44 ^{ab}	0.36 ^{ab}	0.40 ^{ab}	0.65 ^{ab}	0.72 ^{ab}	0.20 U	0.20 U	-	0.20 U	0.20 U
Mercury (dissolved)	ug/L	0.063	0.026	-	-	-	-	-	-	-	-	0.20 U	0.20 U
Nickel	ug/L	39	52	40.0 U	5.7 J	7.1 J	5.5 J	7.3 J	5.6 U	1.7 J	-	9.4 J	12.4 J
Nickel (dissolved)	ug/L	39	52	-	-	-	-	-	-	-	-	40 U	40 U
Potassium	ug/L	-	-	8400	8960	8520	7620	7610	2850	2420	-	4530 J	6020
Potassium (dissolved)	ug/L	-	-	-	-	-	-	-	-	-	-	4400 J	5140
Selenium	ug/L	10	1	10.0 U	10.0 U	10.0 U	4.8 U	4.8 U	10.0 U	10.0 U	-	5 U	5 U
Selenium (dissolved)	ug/L	10	1	-	-	-	-	-	-	-	-	5 U	5 U
Silver	ug/L	9.4	3.2	10.0 U	1.1 J	1.9 J	1.5 J	1.1 J	2.0 U	2.0 U	-	10 U	10 U
Silver (dissolved)	ug/L	9.4	3.2	-	-	-	-	-	-	-	-	10 U	10 U
Sodium	ug/L	-	-	145000	146000	148000	126000	124000	26300	36000	-	47100	59100
Sodium (dissolved)	ug/L	-	-	-	-	-	-	-	-	-	-	51200	56800
Thallium	ug/L	0.02	0.8	10.0 U	10.0 U	10.0 U	4.6 U	4.6 U	0.80 U	0.80 U	-	10 U	9.5 U
Thallium (dissolved)	ug/L	0.02	0.8	-	-	-	-	-	-	-	-	10 U	9.5 U
Vanadium	ug/L	8.6	20	50.0 U	10.1 J ^a	11.8 J ^a	8.4 J	12.4 J ^a	4.0 U	4.0 U	-	29.8 J ^{ab}	39.6 J ^{ab}
Vanadium (dissolved)	ug/L	8.6	20	-	-	-	-	-	-	-	-	50 U	50 U
Zinc	ug/L	600	120	8.0 J	19.4 J	23.2 J	15.4 J	25.8 J	16.0 U	16.0 U	-	30 U	80.4
Zinc (dissolved)	ug/L	600	120	-	-	-	-	-	-	-	-	30 U	30 U

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-2 MW-19 GW-17338-080508-16 08/05/2008	OU-2 MW-19 GW-17338-112008-05 11/20/2008	OU-2 MW-19 GW-017338-022309-002 02/23/2009	OU-2 MW-19 GW-017338-050809-ACH-002 05/08/2009	OU-2 MW-19 GW-017338-081709-ACH-02 08/17/2009	OU-2 MW-19 GW-017338-111209-ACH-05 11/12/2009	OU-2 MW-19 GW-017338-030110-ACH-004 03/01/2010	OU-2 MW-19 GW-017338-051810-ACH-05 05/18/2010	OU-2 MW-19 WG-17338-110517-SG-032 11/05/2017	OU-2 MW-19 WG-17338-062618-AM-001 06/26/2018
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)										
Volatile Organic Compounds													
1,1,1-Trichloroethane	ug/L	200	11	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.25 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	0.076	610	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.090 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	0.041	1200	3.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	2.8	47	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	7	25	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.14 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	0.4	24	5.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.44 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	ug/L	5.6		-	-	-	-	-	-	-	-	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.00033		5.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.15 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.0075		5.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.090 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	30	0.7	5.0 U	-	0.2 J	1.0 U	1.0 U	1.0 U	1.0 U	0.16 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	0.17	100	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.24 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	0.82		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.090 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	ug/L	6	71	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ug/L			5.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.22 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	0.48	26	0.4 J	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.15 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	560	14000	5.0 U	5.0 U	10 U	10 U	R	10 UJ	10 U	0.82 U	5.0 U	5.0 U
2-Hexanone	ug/L	3.8	99	5.0 U	5.0 U	10 U	10 U	10 U	10 U	10 U	0.55 U	5.0 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	630	170	5.0 U	5.0 U	10 U	10 U	10 U	10 U	R	0.68 U	5.0 U	5.0 U
Acetone	ug/L	1800	1500	R	5.0 U	10 U	10 UJ	R	R	R	2.5 U	5.0 U	5.0 U
Benzene	ug/L	0.46	370	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.13 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	0.13		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.093 U	1.0 U	1.0 U
Bromoform	ug/L	3.3	320	4.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.10 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	0.75		5.0 U	5.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	0.31 U	1.0 U	1.0 U
Carbon disulfide	ug/L	81	0.92	5.0 U	5.0 U	1.0 U	1.0 U	0.29 J	1.0 U	1.0 U	0.15 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	0.46	13.3	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.19 U	1.0 U	1.0 U
Chlorobenzene	ug/L	7.8	1.3	0.8 J	5.0 U	0.3 J	1.0 U	1.0 U	0.18 J	1.0 U	0.16 U	1.0 U	1.0 U
Chloroethane	ug/L	830		5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.45 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	0.22	1.8	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.15 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	19		5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.21 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	2.5		5.0 U	5.0 U	0.3 J	1.0 U	0.54 J	0.41 J	0.24 J	0.44 J	0.49 J	1.0 U
cis-1,3-Dichloropropene	ug/L			5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.11 U	1.0 U	1.0 U
Cyclohexane	ug/L	1300		5.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.13 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	0.87		5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.11 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	20		5.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.29 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.5	90	23 ^a	4.0 U	0.2 J	1.0 U	1.0 U	1.0 U	1.0 U	0.25 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	45	2.6	5.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.21 U	1.0 U	1.0 U
Methyl acetate	ug/L	2000		5.0 U	-	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	0.33 U	5.0 U	5.0 U
Methyl cyclohexane	ug/L			5.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.090 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	10	11070	5.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.27 J	1.0 U	1.0 U
Methylene chloride	ug/L	5	98.1	3.0 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.19 U	1.0 U	1.0 U
Styrene	ug/L	100	72	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.13 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1	111	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.20 U	1.0 U	1.0 U
Toluene	ug/L	110	2	100 ^b	5.0 U	0.8 J	1.0 U	1.0 U	1.0 U	0.31 J	0.090 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	6.8	970	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.14 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L			5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.12 U	1.0 U	1.0 U
Trichloroethene	ug/L	0.28	21	1.0 U	1.0 U	1.0 U	0.57 J ^a	0.38 J ^a	1.0 U	1.0 U	0.44 J ^a	0.48 J ^a	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	520		5.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.16 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1000		5.0 U	-	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.28 U	1.0 U	1.0 U
Vinyl chloride	ug/L	0.019	930	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.13 U	1.0 U	1.0 U
Xylenes (total)	ug/L	19	13	41 ^{ab}	5.0 U	0.3 J	3.0 U	3.0 U	3.0 U	3.0 U	0.43 U	2.0 U	2.0 U

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-2 MW-19 GW-17338-080508-16 08/05/2008	OU-2 MW-19 GW-17338-112008-05 11/20/2008	OU-2 MW-19 GW-017338-022309-002 02/23/2009	OU-2 MW-19 GW-017338-050809-ACH-002 05/08/2009	OU-2 MW-19 GW-017338-081709-ACH-02 08/17/2009	OU-2 MW-19 GW-017338-111209-ACH-05 11/12/2009	OU-2 MW-19 GW-017338-030110-ACH-004 03/01/2010	OU-2 MW-19 GW-017338-051810-ACH-05 05/18/2010	OU-2 MW-19 WG-17338-110517-SG-032 11/05/2017	OU-2 MW-19 WG-17338-062618-AM-001 06/26/2018
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)										
Semi-Volatile Organic Compounds													
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	71		10 U	10 U	10 U	10 U	11 U	5.1 U	3.3 U	3.4 U	10 U	10 U
2,4,5-Trichlorophenol	ug/L	120		10 U	10 U	10 U	10 U	11 U	5.1 U	2.6 U	-	10 U	10 U
2,4,6-Trichlorophenol	ug/L	1.2	4.9	10 U	10 U	10 U	10 U	11 U	5.1 U	3.2 U	-	10 U	10 U
2,4-Dichlorophenol	ug/L	4.6	11	10 U	10 U	10 U	10 U	11 U	5.1 U	2.8 U	-	10 U	1.1 U
2,4-Dimethylphenol	ug/L	36		10 U	10 U	10 U	10 U	11 U	5.1 U	2.6 U	-	10 U	10 U
2,4-Dinitrophenol	ug/L	3.9		31 U	30 U	30 U	30 U	32 UJ	15 UJ	4.9 U	-	20 U	20 U
2,4-Dinitrotoluene	ug/L	0.24	44	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	1.0 U	0.44 U	0.46 U	2.0 U	2.0 U
2,6-Dinitrotoluene	ug/L	0.049	81	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	1.0 U	0.60 U	0.63 U	2.0 U	2.0 U
2-Chloronaphthalene	ug/L	75		10 U	10 U	10 U	10 U	11 U	5.1 U	3.8 U	4.0 U	10 U	10 U
2-Chlorophenol	ug/L	9.1	24	10 U	10 U	10 U	10 U	11 U	5.1 U	2.7 U	-	10 U	10 U
2-Methylnaphthalene	ug/L	3.6	4.7	10 U	10 U	10 U	10 U	11 U	5.1 U	3.2 U	3.3 U	10 U	10 U
2-Methylphenol	ug/L	93	13	10 U	10 U	10 U	10 U	11 U	5.1 U	1.7 U	-	10 U	10 U
2-Nitroaniline	ug/L	19		20 U	20 U	20 U	20 U	21 U	10 U	5.8 U	6.1 U	10 U	10 U
2-Nitrophenol	ug/L			10 U	10 U	10 U	10 U	11 U	5.1 U	3.5 U	-	10 U	10 U
3,3'-Dichlorobenzidine	ug/L	0.13	4.5	20 U	20 U	20 U	20 U	21 U	10 U	7.1 U	7.4 U	10 U	10 U
3-Nitroaniline	ug/L			20 U	20 U	20 U	20 U	21 U	10 U	4.4 U	4.6 U	10 U	10 U
4,6-Dinitro-2-methylphenol	ug/L	0.15		31 U	30 U	30 U	30 U	32 U	15 U	5.3 U	-	20 U	20 U
4-Bromophenyl phenyl ether	ug/L			10 U	10 U	10 U	10 U	11 U	5.1 U	4.0 U	4.2 U	10 U	10 U
4-Chloro-3-methylphenol	ug/L	140		10 U	10 U	10 U	10 U	11 U	5.1 U	2.0 U		10 U	10 U
4-Chloroaniline	ug/L	0.37	232	10 U	10 U	10 U	10 U	11 U	5.1 U	2.1 U	2.2 UJ	10 U	10 U
4-Chlorophenyl phenyl ether	ug/L			10 U	10 U	10 U	10 U	11 U	5.1 U	4.0 U	4.2 U	10 U	10 U
4-Methylphenol	ug/L	37	543	10 U	-	10 U	10 U	11 U	5.1 U	1.6 U	-	10 U	10 U
4-Nitroaniline	ug/L	3.8		20 U	20 U	20 U	20 U	21 U	10 U	4.1 U	4.2 U	10 U	10 U
4-Nitrophenol	ug/L			31 U	30 U	30 U	30 U	32 U	15 U	2.4 U	-	20 U	20 U
Acenaphthene	ug/L	53	5.8	10 U	10 U	10 U	10 U	11 U	5.1 U	3.8 U	4.0 U	10 U	10 U
Acenaphthylene	ug/L			10 U	10 U	10 U	10 U	11 U	5.1 U	4.1 U	4.3 U	10 U	10 U
Acetophenone	ug/L	190		10 U	10 U	10 U	10 U	11 U	5.1 U	4.4 U	4.6 U	10 U	10 U
Anthracene	ug/L	180	0.012	10 U	10 U	10 U	10 U	11 U	5.1 U	3.6 U	3.8 U	10 U	10 U
Atrazine	ug/L	0.3	1.8	10 U	10 U	10 U	10 U	11 U	5.1 U	4.9 U	5.1 U	2.0 U	2.0 U
Benzaldehyde	ug/L	19		10 UJ	10 UJ	10 UJ	10 U	11 U	5.1 UJ	1.4 UJ	1.4 UJ	10 U	10 U
Benzo(a)anthracene	ug/L	0.03	0.018	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	0.51 U	0.020 U	0.021 U	1.0 U	1.0 U
Benzo(a)pyrene	ug/L	0.025	0.015	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	0.51 U	0.031 U	0.032 U	1.0 U	1.0 U
Benzo(b)fluoranthene	ug/L	0.25		1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	0.51 U	0.041 U	0.043 U	1.0 U	2.0 U
Benzo(g,h,i)perylene	ug/L			10 U	10 U	10 U	10 U	11 U	5.1 U	2.8 U	2.9 U	10 U	10 UJ
Benzo(k)fluoranthene	ug/L	2.5		1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	0.51 U	0.31 U	0.32 U	1.0 U	1.0 U
Biphenyl (1,1-Biphenyl)	ug/L	0.083	14	10 U	10 U	10 U	10 U	11 U	5.1 U	5.5 U	5.8 U	10 U	10 U
bis(2-Chloroethoxy)methane	ug/L	5.9		10 U	10 U	10 U	10 U	11 U	5.1 U	3.5 U	3.7 U	10 U	10 U
bis(2-Chloroethyl)ether	ug/L	0.014		1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	0.51 U	0.42 U	0.44 U	1.0 U	1.0 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	5.6	16	10 U	10 U	10 U	10 UJ	11 U	5.1 U	2.4 U	2.6 U	2.0 U	2.0 U
Butyl benzylphthalate (BBP)	ug/L	16	19	10 U	10 U	10 U	10 U	11 U	5.1 U	2.8 U	3.0 U	10 U	10 U
Caprolactam	ug/L	990		10 U	10 U	10 U	10 U	11 U	5.1 U	0.51 U	R	10 U	10 U
Carbazole	ug/L			10 U	10 U	10 U	10 U	11 U	5.1 U	3.1 U	3.3 U	10 U	10 U
Chrysene	ug/L	25		10 U	10 U	10 U	10 U	11 U	5.1 U	3.8 U	4.0 U	2.0 U	2.0 U
Dibenz(a,h)anthracene	ug/L	0.025		1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	0.51 UJ	0.16 U	0.17 U	1.0 U	1.0 UJ
Dibenzofuran	ug/L	0.79	3.7	10 U	10 U	10 U	10 U	11 U	5.1 U	3.7 U	3.8 U	10 U	10 U
Diethyl phthalate	ug/L	1500	210	10 U	10 U	10 U	10 U	11 U	5.1 U	3.9 U	4.1 U	10 U	10 U
Dimethyl phthalate	ug/L			10 U	10 U	10 U	10 U	11 U	5.1 U	3.3 U	3.5 U	10 U	10 U
Di-n-butylphthalate (DBP)	ug/L	90	19	10 U	10 U	10 U	10 U	11 U	5.1 U	2.8 U	2.9 U	10 U	10 U
Di-n-octyl phthalate (DnOP)	ug/L	20	22	10 U	10 U	10 U	10 U	11 U	5.1 U	1.9 U	2.0 U	10 U	10 U
Fluoranthene	ug/L	80	0.04	10 U	10 U	10 U	10 U	11 U	5.1 U	2.7 U	2.8 U	10 U	10 U
Fluorene	ug/L	29	3	10 U	10 U	10 U	10 U	11 U	5.1 U	3.3 U	3.5 U	10 U	10 U
Hexachlorobenzene	ug/L	0.0098	0.0003	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	0.51 U	0.010 U	0.011 U	1.0 U	1.0 U
Hexachlorobutadiene	ug/L	0.14	1.3	2.0 U	2.0 U	2.0 U	2.0 U	2.1 U	1.0 U	0.96 U	1.0 UJ	1.0 U	1.0 U
Hexachlorocyclopentadiene	ug/L	0.041		10 U	10 U	10 U	10 U	11 U	5.1 U	4.7 U	4.9 U	10 U	10 U
Hexachloroethane	ug/L	0.33	12	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	0.51 U	0.51 U	0.53 U	1.0 U	2.0 U
Indeno(1,2,3-cd)pyrene	ug/L	0.25		1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	0.51 U	0.12 U	0.13 U	1.0 U	2.0 U
Isophorone	ug/L	78		10 U	10 U	10 U	10 U	11 U	5.1 U	3.7 U	3.8 U	10 U	10 U
Naphthalene	ug/L	0.12	1.1	10 U	10 U	10 U	10 U	11 U	5.1 U	3.7 U	3.9 U	10 U	10 U
Nitrobenzene	ug/L	0.14		1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	0.51 U	0.42 U	0.44 U	1.0 U	1.0 U
N-Nitrosodi-n-propylamine	ug/L	0.011		1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	0.51 U	0.33 U	0.34 U	1.0 U	1.0 U
N-Nitrosodiphenylamine	ug/L	12	210	10 U	10 U	10 U	10 U	11 U	5.1 U	3.9 U	4.1 U	10 U	10 U
Pentachlorophenol	ug/L	0.041	0.5	31 U	30 U	30 U	30 U	32 U	15 U	0.14 U	-	20 U	20 U
Phenanthrene	ug/L	12	0.4	10 U	10 U	10 U	10 U	11 U	5.1 U	3.6 U	3.8 U	10 U	10 U
Phenol	ug/L	580	4	10 U	10 U	10 U	10 U	11 U	5.1 UJ	0.91 U	-	10 U	10 U
Pyrene	ug/L	12	0.025	10 U	10 U	10 U	10 U	11 U	5.1 U	4.4 U	4.5 U	10 U	10 U

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-2 MW-19 GW-17338-080508-16 08/05/2008	OU-2 MW-19 GW-17338-112008-05 11/20/2008	OU-2 MW-19 GW-017338-022309-002 02/23/2009	OU-2 MW-19 GW-017338-050809-ACH-002 05/08/2009	OU-2 MW-19 GW-017338-081709-ACH-02 08/17/2009	OU-2 MW-19 GW-017338-111209-ACH-05 11/12/2009	OU-2 MW-19 GW-017338-030110-ACH-004 03/01/2010	OU-2 MW-19 GW-017338-051810-ACH-05 05/18/2010	OU-2 MW-19 WG-17338-110517-SG-032 11/05/2017	OU-2 MW-19 WG-17338-062618-AM-001 06/26/2018
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)										
Metals		a	b										
Aluminum	ug/L	2000	87	7480 ^{ab}	1620 ^b	7330 ^{ab}	1390 ^b	12500 ^{ab}	2250 J ^{ab}	1010 ^b	4460 J ^{ab}	232 ^b	946 ^b
Aluminum (dissolved)	ug/L	2000	87	-	-	-	-	-	-	-	-	-	-
Antimony	ug/L	0.78	30	8.4 U	10 U	5.8 J ^a	10.0 U	10.0 U	10.0 U	10.0 U	4.6 U	2.0 U	2.0 U
Antimony (dissolved)	ug/L	0.78	30	-	-	-	-	-	-	-	-	-	-
Arsenic	ug/L	0.052	5	7.1 ^{ab}	4.8 J ^a	3.5 J ^a	5.0 U	5.0 U	5.0 U	5.0 U	5.2 ^{ab}	1.8 J ^a	1.4 J ^a
Arsenic (dissolved)	ug/L	0.052	5	-	-	-	-	-	-	-	-	-	-
Barium	ug/L	380	4	295 ^b	221 ^b	506 ^{ab}	253 ^b	176 J ^b	198 J ^b	251 ^b	219 ^b	136 ^b	128 ^b
Barium (dissolved)	ug/L	380	4	-	-	-	-	-	-	-	-	-	-
Beryllium	ug/L	2.5	0.66	0.67 U	2 U	2 U	2.0 U	2.0 U	2.0 U	2.0 U	0.94 U	0.80 U	0.80 U
Beryllium (dissolved)	ug/L	2.5	0.66	-	-	-	-	-	-	-	-	-	-
Cadmium	ug/L	0.18	0.25	5 U	4 U	4 U	5.0 U	5.0 U	5.0 U	5.0 U	0.92 U	2.0 U	2.0 U
Cadmium (dissolved)	ug/L	0.18	0.25	-	-	-	-	-	-	-	-	-	-
Calcium	ug/L			42900	40900	81800	44700	32100	40500	43400	41700	33600	29400
Calcium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-	-
Chromium	ug/L	10	85	8.8 J	1.7 J	10.3 ^a	10.0 U	14.5 ^a	10.0 U	10.0 U	5.2 J	4.0 U	1.7 J
Chromium (dissolved)	ug/L	10	85	-	-	-	-	-	-	-	-	-	-
Chromium VI (hexavalent)	ug/L	0.035	11	-	-	-	-	-	-	-	-	-	-
Chromium VI (hexavalent) (dissolved)	ug/L	0.035	11	-	-	-	-	-	-	-	-	-	-
Cobalt	ug/L	0.6	23	4.7 J ^a	2.3 J ^a	5.3 J ^a	50.0 U	3.1 J ^a	50.0 U	50.0 U	3.1 J ^a	4.0 U	4.0 U
Cobalt (dissolved)	ug/L	0.6	23	-	-	-	-	-	-	-	-	-	-
Copper	ug/L	80	9	6.9 J	25 U	28.7 ^b	25.0 U	31.2 ^b	25.0 U	25.0 U	13.3 J ^b	4.0 U	4.0 U
Copper (dissolved)	ug/L	80	9	-	-	-	-	-	-	-	-	-	-
Iron	ug/L	1400	300	11000 ^{ab}	6850 ^{ab}	12700 ^{ab}	5680 ^{ab}	8460 ^{ab}	5240 ^{ab}	6530 ^{ab}	8700 ^{ab}	1250 ^b	2140 ^{ab}
Iron (dissolved)	ug/L	1400	300	-	-	-	-	-	-	-	-	-	-
Lead	ug/L	15	2.5	5.4 ^b	3.5 J ^b	2.9 J ^b	3.3 J ^b	7.7 ^b	5.0 U	5.0 U	6.3 ^b	1.2 U	1.3
Lead (dissolved)	ug/L	15	2.5	-	-	-	-	-	-	-	-	-	-
Magnesium	ug/L			12100	11800	22700	12100	8880	11500	13700	12400	9070	7740
Magnesium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-	-
Manganese	ug/L	43	120	545 ^{ab}	496 ^{ab}	776 ^{ab}	420 ^{ab}	264 ^{ab}	390 ^{ab}	487 ^{ab}	454 ^{ab}	208 ^{ab}	206 ^{ab}
Manganese (dissolved)	ug/L	43	120	-	-	-	-	-	-	-	-	-	-
Mercury	ug/L	0.063	0.026	0.20 U	0.20 U	0.20 U	0.20 U	0.22 ^{ab}	0.20 U	0.20 U	0.18 U	0.20 U	0.20 U
Mercury (dissolved)	ug/L	0.063	0.026	-	-	-	-	-	-	-	-	-	-
Nickel	ug/L	39	52	4.7 J	40 U	6.7 J	40.0 U	7.8 J	40.0 U	40.0 U	3.5 J	5.6 U	1.4 J
Nickel (dissolved)	ug/L	39	52	-	-	-	-	-	-	-	-	-	-
Potassium	ug/L			6640	4950 J	8040	6310	4830 J	4640 J	4510 J	4470 J	4170	4080
Potassium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-	-
Selenium	ug/L	10	1	5.7 U	5 U	5 U	10.0 U	10.0 U	10.0 U	10.0 U	4.8 U	10.0 U	10.0 U
Selenium (dissolved)	ug/L	10	1	-	-	-	-	-	-	-	-	-	-
Silver	ug/L	9.4	3.2	2.3 J	10 U	4.5 J ^b	1.2 J	1.1 J	1.3 J	10.0 U	0.97 U	2.0 U	2.0 U
Silver (dissolved)	ug/L	9.4	3.2	-	-	-	-	-	-	-	-	-	-
Sodium	ug/L			107000	80600	272000	193000	66600	73800	108000	73800	27500	34100
Sodium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-	-
Thallium	ug/L	0.02	0.8	9.7 U	9.5 U	9.5 U	10.0 U	10.0 U	10.0 U	10.0 U	4.6 U	0.80 U	0.80 U
Thallium (dissolved)	ug/L	0.02	0.8	-	-	-	-	-	-	-	-	-	-
Vanadium	ug/L	8.6	20	15.3 J ^a	50 U	13.0 J ^a	50.0 U	26.5 J ^{ab}	4.9 J	2.4 J	8.4 J	4.0 U	3.0 J
Vanadium (dissolved)	ug/L	8.6	20	-	-	-	-	-	-	-	-	-	-
Zinc	ug/L	600	120	17.1 J	30 U	24.8 J	6.8 J	30.3	30.0 U	6.2 J	10.0 J	16.0 U	16.0 U
Zinc (dissolved)	ug/L	600	120	-	-	-	-	-	-	-	-	-	-

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-2 MW-19 WG-17338-062618-AM-002 06/26/2018 (Duplicate)	OU-2 MW-19R GW-11222397-011123-MA-08 01/11/2023	OU-2 MW-19R GW-11222397-011123-MA-09 01/11/2023 (Duplicate)	OU-4 MW-36D WG-17338-102312-MW36D-MM-266 10/23/2012	OU-4 MW-36D DA-MW36D-W001 09/18/2013	OU-4 MW-36D DA-MW36D-W002 10/14/2015	OU-4 MW-36D WG-17338-110417-DT-025 11/04/2017	OU-4 MW-36D GW-11222397-011023-ZB-02 01/10/2023	OU-4 MW-36S WG-17338-102212-MW36S-MM-265 10/22/2012	OU-4 MW-36S DA-MW36S-W001 09/18/2013
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)										
Volatile Organic Compounds													
1,1,1-Trichloroethane	ug/L	200	11	1.0 U	0.24 U	0.24 U	1.0 U	5.0 U	2.0 U	1.0 U	0.24 U	1.0 U	5.0 U
1,1,2,2-Tetrachloroethane	ug/L	0.076	610	1.0 U	0.37 U	0.37 U	1.0 U	5.0 U	2.0 U	1.0 U	0.37 U	1.0 U	5.0 U
1,1,2-Trichloroethane	ug/L	0.041	1200	1.0 U	0.20 U	0.20 U	1.0 U	5.0 U	2.0 U	1.0 U	0.20 U	1.0 U	5.0 U
1,1-Dichloroethane	ug/L	2.8	47	1.0 U	0.26 U	0.26 U	1.0 U	5.0 U	2.0 U	1.0 U	0.26 U	1.0 U	5.0 U
1,1-Dichloroethene	ug/L	7	25	1.0 U	0.26 U	0.26 U	1.0 U	5.0 U	2.0 U	1.0 U	0.26 U	1.0 U	5.0 U
1,2,4-Trichlorobenzene	ug/L	0.4	24	1.0 U	0.37 U	0.37 U	1.0 U	5.0 U	2.0 U	1.0 U	0.37 U	1.0 U	5.0 U
1,2,4-Trimethylbenzene	ug/L	5.6		1.0 U	7.1 ^a	7.4 ^a	13 ^a	5.7 ^a	290 ^a	1.0 U	65 ^a	550 D ^a	300 ^a
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.00033		1.0 U	0.38 UJ	0.38 UJ	1.0 U	5.0 U	2.0 U	1.0 U	0.38 UJ	1.0 U	5.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.0075		1.0 U	0.50 U	0.50 U	1.0 U	5.0 U	2.0 U	1.0 U	0.50 U	1.0 U	1.6 J ^a
1,2-Dichlorobenzene	ug/L	30	0.7	1.0 U	0.21 U	0.21 U	1.0 U	5.0 U	2.0 U	1.0 U	0.21 U	1.0 U	5.0 U
1,2-Dichloroethane	ug/L	0.17	100	1.0 U	0.43 U	0.43 U	31 ^a	29 ^a	9.5 ^a	15 ^a	0.43 U	3.8 ^a	10 ^a
1,2-Dichloropropane	ug/L	0.82		1.0 U	0.35 J	0.38 J	1.0 U	5.0 U	2.0 U	1.0 U	0.35 U	1.0 U	5.0 U
1,3,5-Trimethylbenzene	ug/L	6	71	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ug/L			1.0 U	0.34 U	0.34 U	1.0 U	5.0 U	2.0 U	1.0 U	0.34 U	1.0 U	5.0 U
1,4-Dichlorobenzene	ug/L	0.48	26	1.0 U	0.33 U	0.33 U	1.0 U	5.0 U	2.0 U	1.0 U	0.33 U	1.0 U	5.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	560	14000	5.0 U	15	14	5.0 U	25 U	12	5.0 U	1.9 U	17	44
2-Hexanone	ug/L	3.8	99	5.0 U	1.1 U	1.1 U	5.0 U	25 U	5.0 J ^a	5.0 U	1.1 U	6.7 ^a	19 J ^a
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	630	170	5.0 U	3.7 J	3.8 J	1.8 J	25 U	5.8 J	5.0 U	1.3 U	16	25 U
Acetone	ug/L	1800	1500	11 U	70	70	R	25 U	20	5.0 U	9.7	R	25 U
Benzene	ug/L	0.46	370	1.0 U	0.26 J	0.35 J	830 ^{ab}	850 ^{ab}	720 ^{ab}	220 ^a	37 ^a	500 ^{ab}	800 ^{ab}
Bromodichloromethane	ug/L	0.13		1.0 U	0.34 U	0.34 U	1.0 U	5.0 U	2.0 U	1.0 U	0.34 U	1.0 U	5.0 U
Bromoform	ug/L	3.3	320	1.0 U	0.54 U	0.54 U	1.0 U	5.0 U	2.0 U	1.0 U	0.54 U	1.0 U	5.0 U
Bromomethane (Methyl bromide)	ug/L	0.75		1.0 U	0.55 U	0.55 U	1.0 U	5.0 U	2.0 U	1.0 UJ	0.55 U	1.0 U	5.0 U
Carbon disulfide	ug/L	81	0.92	1.0 U	14 ^b	17 ^b	1.0 U	5.0 U	2.0 U	1.0 U	0.82 U	0.28 J	5.0 U
Carbon tetrachloride	ug/L	0.46	13.3	1.0 U	0.21 U	0.21 U	1.0 U	5.0 U	2.0 U	1.0 U	0.21 U	1.0 U	5.0 U
Chlorobenzene	ug/L	7.8	1.3	1.0 U	0.38 U	0.38 U	1.0 U	5.0 U	2.0 U	1.0 U	0.38 U	1.0 U	5.0 U
Chloroethane	ug/L	830		1.0 U	0.32 U	0.32 U	1.0 U	5.0 U	2.0 U	1.0 U	0.32 U	1.0 U	5.0 U
Chloroform (Trichloromethane)	ug/L	0.22	1.8	1.0 U	0.33 U	0.33 U	2.0 ^{ab}	1.4 J ^a	2.0 U	1.0 U	0.33 U	10 ^{ab}	7.2 ^{ab}
Chloromethane (Methyl chloride)	ug/L	19		1.0 U	0.40 U	0.40 U	1.0 U	5.0 U	2.0 U	1.0 U	7.9	1.0 U	5.0 U
cis-1,2-Dichloroethene	ug/L	2.5		1.0 U	1.1	1.1	1.0 U	5.0 U	2.0 U	0.38 J	0.22 U	1.0 U	5.0 U
cis-1,3-Dichloropropene	ug/L			1.0 U	0.22 U	0.22 U	1.0 U	5.0 U	2.0 U	1.0 U	0.22 U	1.0 U	5.0 U
Cyclohexane	ug/L	1300		1.0 U	0.32 U	0.32 U	86	120	200	22	100	280	280
Dibromochloromethane	ug/L	0.87		1.0 U	0.28 U	0.28 U	1.0 U	5.0 U	2.0 U	1.0 U	0.28 U	1.0 U	5.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	20		1.0 U	0.31 U	0.31 U	1.0 U	5.0 U	2.0 U	1.0 U	0.31 U	1.0 U	5.0 U
Ethylbenzene	ug/L	1.5	90	1.0 U	3.3 ^a	3.3 ^a	9.7 ^a	5.6 ^a	490 ^{ab}	0.46 J	210 ^{ab}	1000 ^{ab}	480 ^{ab}
Isopropyl benzene	ug/L	45	2.6	1.0 U	0.34 U	0.34 J	16 ^b	20 ^b	15 ^b	10 ^b	17 ^b	29 ^b	15 ^b
Methyl acetate	ug/L	2000		5.0 U	0.79 U	0.79 U	2.0 U	25 U	10 U	5.0 U	0.79 U	2.0 U	25 U
Methyl cyclohexane	ug/L			1.0 U	0.71 U	0.71 U	31	48 J	65	20	52	75	73 J
Methyl tert butyl ether (MTBE)	ug/L	10	11070	1.0 U	0.22 U	0.22 U	0.21 J	5.0 U	1.2 J	1.0 U	0.22 U	0.56 J	5.0 U
Methylene chloride	ug/L	5	98.1	1.0 U	0.35 J	0.32 U	1.0 U	5.0 U	2.0 U	1.0 U	0.32 U	1.0 U	5.0 U
Styrene	ug/L	100	72	1.0 U	1.6	1.8	0.31 J	5.0 U	5.1	1.0 U	0.42 U	17	5.0 U
Tetrachloroethene	ug/L	1	111	1.0 U	0.25 U	0.25 U	1.0 U	5.0 U	2.0 U	1.0 U	0.25 U	1.0 U	5.0 U
Toluene	ug/L	110	2	1.0 U	2.0	2.0	20 ^b	6.1 ^b	130 ^{ab}	1.6	130 ^{ab}	1600 ^{ab}	440 ^{ab}
trans-1,2-Dichloroethene	ug/L	6.8	970	1.0 U	0.24 U	0.24 U	1.0 U	5.0 U	2.0 U	1.0 U	0.24 U	1.0 U	5.0 U
trans-1,3-Dichloropropene	ug/L			1.0 U	0.22 U	0.22 U	1.0 U	5.0 U	2.0 U	1.0 U	0.22 U	1.0 U	5.0 U
Trichloroethene	ug/L	0.28	21	1.0 U	0.31 U	0.31 U	0.16 J	5.0 U	2.0 U	1.0 U	0.31 U	1.0 U	5.0 U
Trichlorofluoromethane (CFC-11)	ug/L	520		1.0 U	3.4	3.1	1.0 U	5.0 U	2.0 U	1.0 U	0.32 UJ	1.0 U	5.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1000		1.0 U	0.31 U	0.31 U	1.0 U	5.0 U	2.0 U	1.0 U	0.31 U	1.0 U	5.0 U
Vinyl chloride	ug/L	0.019	930	1.0 U	0.45 J ^a	0.39 J ^a	1.0 U	5.0 U	2.0 U	1.0 U	0.17 U	1.0 U	5.0 U
Xylenes (total)	ug/L	19	13	2.0 U	17 ^b	19 ^b	65 ^{ab}	23 ^{ab}	1200 ^{ab}	1.4 J	480 ^{ab}	4000 ^{ab}	1700 ^{ab}

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-2 MW-19 WG-17338-062618-AM-002 06/26/2018 (Duplicate)	OU-2 MW-19R GW-11222397-011123-MA-08 01/11/2023	OU-2 MW-19R GW-11222397-011123-MA-09 01/11/2023 (Duplicate)	OU-4 MW-36D WG-17338-102312-MW36D-MM-266 10/23/2012	OU-4 MW-36D DA-MW36D-W001 09/18/2013	OU-4 MW-36D DA-MW36D-W002 10/14/2015	OU-4 MW-36D WG-17338-110417-DT-025 11/04/2017	OU-4 MW-36D GW-11222397-011023-ZB-02 01/10/2023	OU-4 MW-36S WG-17338-102212-MW36S-MM-265 10/22/2012	OU-4 MW-36S DA-MW36S-W001 09/18/2013
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)										
Semi-Volatile Organic Compounds													
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	71		10 U	-	-	10 U	10 U	10 U	10 U	0.63 U	10 U	10 U
2,4,5-Trichlorophenol	ug/L	120		10 U	-	-	10 U	10 U	10 U	10 U	0.88 U	10 U	10 U
2,4,6-Trichlorophenol	ug/L	1.2	4.9	10 U	-	-	10 U	10 U	10 U	10 U	0.86 U	10 U	10 U
2,4-Dichlorophenol	ug/L	4.6	11	0.92 J	-	-	10 U	10 U	10 U	10 U	1.1 U	10 U	10 U
2,4-Dimethylphenol	ug/L	36		10 U	-	-	10 U	10 U	10 U	10 U	1.7 J	5.0 J	10 U
2,4-Dinitrophenol	ug/L	3.9		20 U	-	-	31 U	31 U	20 U	20 U	2.6 UJ	31 U	31 U
2,4-Dinitrotoluene	ug/L	0.24	44	2.0 U	-	-	2.1 U	2.0 U	2.0 U	2.0 U	1.0 U	2.1 U	2.0 U
2,6-Dinitrotoluene	ug/L	0.049	81	2.0 U	-	-	2.1 U	2.0 U	2.0 U	2.0 U	0.83 U	2.1 U	2.0 U
2-Chloronaphthalene	ug/L	75		10 U	-	-	10 U	10 U	10 U	10 U	1.2 U	10 U	10 U
2-Chlorophenol	ug/L	9.1	24	10 U	-	-	10 U	10 U	10 U	10 U	0.38 U	10 U	10 U
2-Methylnaphthalene	ug/L	3.6	4.7	10 U	-	-	10 U	3.6 J	150 ^{ab}	10 U	7.3 J ^{ab}	130 ^{ab}	180 ^{ab}
2-Methylphenol	ug/L	93	13	10 U	-	-	10 U	10 U	10 U	10 U	0.67 U	3.2 J	10 U
2-Nitroaniline	ug/L	19		10 U	-	-	21 U	20 U	10 U	10 U	0.47 U	21 U	20 U
2-Nitrophenol	ug/L			10 U	-	-	10 U	10 U	10 U	10 U	0.75 U	10 U	10 U
3,3'-Dichlorobenzidine	ug/L	0.13	4.5	10 U	-	-	21 U	20 U	10 U	10 U	1.4 U	21 U	20 U
3-Nitroaniline	ug/L			10 U	-	-	21 U	20 U	10 U	10 U	1.9 U	21 U	20 U
4,6-Dinitro-2-methylphenol	ug/L	0.15		20 U	-	-	31 U	31 U	20 U	20 U	3.0 UJ	31 U	31 U
4-Bromophenyl phenyl ether	ug/L			10 U	-	-	10 U	10 U	10 U	10 U	0.75 U	10 U	10 U
4-Chloro-3-methylphenol	ug/L	140		10 U	-	-	10 U	10 U	10 U	10 U	0.58 U	10 U	10 U
4-Chloroaniline	ug/L	0.37	232	10 U	-	-	10 U	10 U	10 U	10 U	1.9 U	10 U	10 U
4-Chlorophenyl phenyl ether	ug/L			10 U	-	-	10 U	10 U	10 U	10 U	1.3 U	10 U	10 U
4-Methylphenol	ug/L	37	543	10 U	-	-	10 U	10 U	10 U	10 U	0.75 J	4.9 J	2.4 J
4-Nitroaniline	ug/L	3.8		10 U	-	-	21 U	20 U	10 U	10 U	1.2 U	21 U	20 U
4-Nitrophenol	ug/L			20 U	-	-	31 U	31 U	20 U	20 U	4.0 U	31 U	31 U
Acenaphthene	ug/L	53	5.8	10 U	-	-	10 U	10 U	2.4 J	10 U	1.1 U	10 U	10 U
Acenaphthylene	ug/L			10 U	-	-	10 U	10 U	10 U	10 U	0.82 U	10 U	10 U
Acetophenone	ug/L	190		10 U	-	-	10 U	10 U	26	10 U	2.3 U	10 U	28
Anthracene	ug/L	180	0.012	10 U	-	-	10 U	10 U	10 U	10 U	1.3 U	10 U	10 U
Atrazine	ug/L	0.3	1.8	2.0 U	-	-	10 U	10 U	2.0 U	2.0 U	1.3 U	10 U	10 U
Benzaldehyde	ug/L	19		10 U	-	-	10 UJ	10 UJ	10 U	10 U	2.1 UJ	10 UJ	10 UJ
Benzo(a)anthracene	ug/L	0.03	0.018	1.0 U	-	-	0.052 U	1.0 U	1.0 U	1.0 U	0.59 U	0.052 U	1.0 U
Benzo(a)pyrene	ug/L	0.025	0.015	1.0 U	-	-	0.052 U	1.0 U	1.0 U	1.0 U	0.41 U	0.052 U	1.0 U
Benzo(b)fluoranthene	ug/L	0.25		2.0 U	-	-	0.052 U	1.0 U	1.0 U	1.0 U	0.68 U	0.052 U	1.0 U
Benzo(g,h,i)perylene	ug/L			10 UJ	-	-	10 U	10 U	10 U	10 U	0.70 U	10 U	10 U
Benzo(k)fluoranthene	ug/L	2.5		1.0 U	-	-	1.0 U	1.0 U	1.0 U	1.0 U	0.67 U	1.0	1.0 U
Biphenyl (1,1-Biphenyl)	ug/L	0.083	14	10 U	-	-	10 U	10 U	12 ^a	0.74 J ^a	1.2 U	8.6 J ^a	11 ^a
bis(2-Chloroethoxy)methane	ug/L	5.9		10 U	-	-	10 U	10 U	10 U	10 U	0.59 U	10 U	10 U
bis(2-Chloroethyl)ether	ug/L	0.014		1.0 U	-	-	1.0 U	1.0 U	1.0 U	1.0 U	0.63 U	1.0 U	1.0 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	5.6	16	2.0 U	-	-	10 U	10 U	8.3 B ^a	2.0 U	0.80 U	10 U	10 U
Butyl benzylphthalate (BBP)	ug/L	16	19	10 U	-	-	10 U	10 U	10 U	10 U	0.85 U	10 U	10 U
Caprolactam	ug/L	990		10 U	-	-	10 U	R	10 U	10 U	2.2 U	10 U	R
Carbazole	ug/L			10 U	-	-	10 U	10 U	10 U	10 U	0.68 U	10 U	10 U
Chrysene	ug/L	25		2.0 U	-	-	10 U	10 U	2.0 U	2.0 U	0.91 U	10 U	10 U
Dibenz(a,h)anthracene	ug/L	0.025		1.0 UJ	-	-	1.0 U	1.0 U	1.0 U	1.0 U	0.72 U	0.30 J ^a	1.0 U
Dibenzofuran	ug/L	0.79	3.7	10 U	-	-	10 U	10 U	3.7 J ^a	10 U	1.1 U	3.0 J ^a	3.8 J ^{ab}
Diethyl phthalate	ug/L	1500	210	10 U	-	-	10 U	10 U	10 U	10 U	0.98 U	10 U	10 U
Dimethyl phthalate	ug/L			10 U	-	-	10 U	10 U	10 U	10 U	0.77 U	10 U	10 U
Di-n-butylphthalate (DBP)	ug/L	90	19	10 U	-	-	10 U	10 U	10 U	10 U	0.84 U	10 U	10 U
Di-n-octyl phthalate (DnOP)	ug/L	20	22	10 U	-	-	10 U	10 U	10 U	10 U	0.75 U	10 U	10 U
Fluoranthene	ug/L	80	0.04	10 U	-	-	10 U	10 U	10 U	10 U	0.84 U	10 U	10 U
Fluorene	ug/L	29	3	10 U	-	-	10 U	10 U	5.1 J ^b	10 U	0.91 U	3.3 J ^b	4.0 J ^b
Hexachlorobenzene	ug/L	0.0098	0.0003	1.0 U	-	-	0.021 U	1.0 U	1.0 U	1.0 U	0.40 U	0.021 U	1.0 U
Hexachlorobutadiene	ug/L	0.14	1.3	1.0 U	-	-	2.1 U	2.0 U	1.0 U	1.0 U	0.78 U	2.1 U	2.0 U
Hexachlorocyclopentadiene	ug/L	0.041		10 U	-	-	10 U	10 U	10 U	10 U	3.6 U	10 U	10 U
Hexachloroethane	ug/L	0.33	12	2.0 U	-	-	1.0 U	1.0 U	1.0 U	1.0 U	0.80 U	1.0 U	1.0 U
Indeno(1,2,3-cd)pyrene	ug/L	0.25		2.0 U	-	-	1.0 U	1.0 U	1.0 U	1.0 U	0.94 U	0.58 J ^a	1.0 U
Isophorone	ug/L	78		10 U	-	-	10 U	10 U	10 U	10 U	0.80 U	10 U	10 U
Naphthalene	ug/L	0.12	1.1	10 U	-	-	17 ^{ab}	22 ^{ab}	180 ^{ab}	10 U	57 ^{ab}	270 ^{ab}	240 ^{ab}
Nitrobenzene	ug/L	0.14		1.0 U	-	-	1.0 U	1.0 UJ	1.0 U	1.0 U	0.57 U	1.0 U	1.0 UJ
N-Nitrosodi-n-propylamine	ug/L	0.011		1.0 U	-	-	1.0 U	1.0 U	1.0 U	1.0 U	0.43 U	1.0 U	1.0 U
N-Nitrosodiphenylamine	ug/L	12	210	10 U	-	-	10 U	10 U	10 U	10 U	0.89 U	10 U	10 U
Pentachlorophenol	ug/L	0.041	0.5	20 U	-	-	0.21 U	31 U	20 U	20 U	1.4 U	0.21 U	31 U
Phenanthrene	ug/L	12	0.4	10 U	-	-	10 U	10 U	3.5 J ^b	10 U	1.3 U	10 U	3.4 J ^b
Phenol	ug/L	580	4	10 U	-	-	10 U	1.5 J	3.4 J	10 U	0.29 U	10 U	10 U
Pyrene	ug/L	12	0.025	10 U	-	-	10 U	10 U	10 U	10 U	1.6 U	10 U	10 U

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-2 MW-19 WG-17338-062618-AM-002 06/26/2018 (Duplicate)	OU-2 MW-19R GW-11222397-011123-MA-08 01/11/2023	OU-2 MW-19R GW-11222397-011123-MA-09 01/11/2023 (Duplicate)	OU-4 MW-36D WG-17338-102312-MW36D-MM-266 10/23/2012	OU-4 MW-36D DA-MW36D-W001 09/18/2013	OU-4 MW-36D DA-MW36D-W002 10/14/2015	OU-4 MW-36D WG-17338-110417-DT-025 11/04/2017	OU-4 MW-36D GW-11222397-011023-ZB-02 01/10/2023	OU-4 MW-36S WG-17338-102212-MW36S-MM-265 10/22/2012	OU-4 MW-36S DA-MW36S-W001 09/18/2013
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)										
Metals		a	b										
Aluminum	ug/L	2000	87	778 ^b	-	-	274 ^b	-	-	63.2	-	3140 ^{ab}	-
Aluminum (dissolved)	ug/L	2000	87	-	-	-	200 U	-	-	-	-	200 U	-
Antimony	ug/L	0.78	30	2.0 U	-	-	10.0 U	-	-	2.0 U	-	10.0 U	-
Antimony (dissolved)	ug/L	0.78	30	-	-	-	10.0 U	-	-	-	-	10.0 U	-
Arsenic	ug/L	0.052	5	1.3 J ^a	-	-	5.0 U	-	-	0.75 J ^a	-	4.4 J ^a	-
Arsenic (dissolved)	ug/L	0.052	5	-	-	-	5.0 U	-	-	-	-	5.0 U	-
Barium	ug/L	380	4	137 ^b	-	-	259 ^b	-	-	601 ^{ab}	-	278 ^b	-
Barium (dissolved)	ug/L	380	4	-	-	-	256 ^b	-	-	-	-	227 ^b	-
Beryllium	ug/L	2.5	0.66	0.80 U	-	-	2.0 U	-	-	0.80 U	-	2.0 U	-
Beryllium (dissolved)	ug/L	2.5	0.66	-	-	-	2.0 U	-	-	-	-	2.0 U	-
Cadmium	ug/L	0.18	0.25	2.0 U	-	-	5.0 U	-	-	2.0 U	-	5.0 U	-
Cadmium (dissolved)	ug/L	0.18	0.25	-	-	-	5.0 U	-	-	-	-	5.0 U	-
Calcium	ug/L			31100	-	-	18700	-	-	24300	-	24500	-
Calcium (dissolved)	ug/L			-	-	-	18500	-	-	-	-	23500	-
Chromium	ug/L	10	85	1.4 J	-	-	10.0 U	-	-	4.0 U	-	10.0 U	-
Chromium (dissolved)	ug/L	10	85	-	-	-	10.0 U	-	-	-	-	10.0 U	-
Chromium VI (hexavalent)	ug/L	0.035	11	-	-	-	-	-	-	-	-	-	-
Chromium VI (hexavalent) (dissolved)	ug/L	0.035	11	-	-	-	-	-	-	-	-	-	-
Cobalt	ug/L	0.6	23	4.0 U	-	-	22.1 J ^a	-	-	38.0 ^{ab}	-	139 ^{ab}	-
Cobalt (dissolved)	ug/L	0.6	23	-	-	-	21.4 J ^a	-	-	-	-	124 ^{ab}	-
Copper	ug/L	80	9	4.0 U	-	-	25.0 U	-	-	4.0 U	-	25.0 U	-
Copper (dissolved)	ug/L	80	9	-	-	-	25.0 U	-	-	-	-	25.0 U	-
Iron	ug/L	1400	300	2170 ^{ab}	-	-	1590 ^{ab}	-	-	6760 ^{ab}	-	66200 ^{ab}	-
Iron (dissolved)	ug/L	1400	300	-	-	-	1200 ^b	-	-	-	-	2390 ^{ab}	-
Lead	ug/L	15	2.5	1.2	-	-	5.0 U	-	-	1.2 U	-	5.0 U	-
Lead (dissolved)	ug/L	15	2.5	-	-	-	5.0 U	-	-	-	-	5.0 U	-
Magnesium	ug/L			8080	-	-	6660	-	-	9590	-	16600	-
Magnesium (dissolved)	ug/L			-	-	-	6590	-	-	-	-	16000	-
Manganese	ug/L	43	120	214 ^{ab}	-	-	2120 ^{ab}	-	-	8480 ^{ab}	-	29300 ^{ab}	-
Manganese (dissolved)	ug/L	43	120	-	-	-	2080 ^{ab}	-	-	-	-	29100 ^{ab}	-
Mercury	ug/L	0.063	0.026	0.20 U	-	-	0.20 U	-	-	0.20 U	-	0.20 U	-
Mercury (dissolved)	ug/L	0.063	0.026	-	-	-	0.20 U	-	-	-	-	0.20 U	-
Nickel	ug/L	39	52	1.6 J	-	-	6.0 J	-	-	5.6 U	-	40.0 U	-
Nickel (dissolved)	ug/L	39	52	-	-	-	6.0 J	-	-	-	-	40.0 U	-
Potassium	ug/L			4280	-	-	2020 J	-	-	2010	-	2460 J	-
Potassium (dissolved)	ug/L			-	-	-	2080 J	-	-	-	-	2500 J	-
Selenium	ug/L	10	1	10.0 U	-	-	10.0 U	-	-	10.0 U	-	10.0 U	-
Selenium (dissolved)	ug/L	10	1	-	-	-	6.5 J ^b	-	-	-	-	30.0 U	-
Silver	ug/L	9.4	3.2	2.0 U	-	-	10.0 U	-	-	2.0 U	-	7.0 J ^b	-
Silver (dissolved)	ug/L	9.4	3.2	-	-	-	10.0 U	-	-	-	-	6.6 J ^b	-
Sodium	ug/L			38100	-	-	21700	-	-	22900	-	43900	-
Sodium (dissolved)	ug/L			-	-	-	21300	-	-	-	-	42400	-
Thallium	ug/L	0.02	0.8	0.80 U	-	-	10.0 U	-	-	0.80 U	-	27.4 J ^{ab}	-
Thallium (dissolved)	ug/L	0.02	0.8	-	-	-	10.0 U	-	-	-	-	30.0 U	-
Vanadium	ug/L	8.6	20	2.9 J	-	-	50.0 U	-	-	4.0 U	-	7.3 J	-
Vanadium (dissolved)	ug/L	8.6	20	-	-	-	50.0 U	-	-	-	-	50.0 U	-
Zinc	ug/L	600	120	16.0 U	-	-	9.4 J	-	-	16.0 U	-	30.0 U	-
Zinc (dissolved)	ug/L	600	120	-	-	-	9.4 J	-	-	-	-	30.0 U	-

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-4 MW-36S DA-MW36S-W101 09/18/2013 (Duplicate)	OU-4 MW-36S DA-MW36S-W002 10/14/2015	OU-4 MW-36S WG-17338-110417-DT-023 11/04/2017	OU-4 MW-36S DA-MW36S-W003 08/28/2018	OU-4 MW-36S GW-11222397-011023-MA-03 01/10/2023	OU-4 MW-36S GW-11222397-011023-MA-04 01/10/2023 (Duplicate)	OU-4 MW-50 DA-MW50-W001 10/14/2015	OU-4 MW-50 WG-17338-110717-DT-051 11/07/2017	OU-4 MW-50 WG-17338-110717-DT-054 11/07/2017 (Duplicate)	OU-4 MW-50 DA-MW50-W002 08/28/2018	OU-4 MW-50R GW-11222397-011023-ZB-05 01/10/2023	
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)												
Volatile Organic Compounds															
1,1,1-Trichloroethane	ug/L	200	11	5.0 U	2.0 U	2.0 U	1.0 U	0.24 U	-	5.0 U	5.0 U	10 U	1.0 U	0.24 U	
1,1,2,2-Tetrachloroethane	ug/L	0.076	610	5.0 U	2.0 U	2.0 U	1.0 U	0.37 U	-	5.0 U	5.0 U	10 U	1.0 U	0.37 U	
1,1,2-Trichloroethane	ug/L	0.041	1200	5.0 U	2.0 U	2.0 U	1.0 U	0.20 U	-	5.0 U	5.0 U	10 U	1.0 U	0.20 U	
1,1-Dichloroethane	ug/L	2.8	47	5.0 U	2.0 U	2.0 U	1.0 U	0.26 U	-	5.0 U	5.0 U	10 U	1.0 U	0.26 U	
1,1-Dichloroethene	ug/L	7	25	5.0 U	2.0 U	2.0 U	1.0 U	0.26 U	-	5.0 U	5.0 U	10 U	1.0 U	0.26 U	
1,2,4-Trichlorobenzene	ug/L	0.4	24	5.0 U	2.0 U	2.0 U	1.0 U	0.37 U	-	5.0 U	5.0 U	10 U	1.0 U	0.37 U	
1,2,4-Trimethylbenzene	ug/L	5.6		280 ^a	2.3	270 ^a	53 ^a	160 ^a	-	65 ^a	130 ^a	140 ^a	23 ^a	0.37 U	
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.00033		5.0 U	2.0 U	2.0 U	1.0 U	0.38 UJ	-	5.0 U	5.0 U	10 U	1.0 U	0.38 UJ	
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.0075		1.8 J ^a	2.0 U	2.0 U	1.0 U	0.50 U	-	5.0 U	5.0 U	10 U	1.0 U	0.50 U	
1,2-Dichlorobenzene	ug/L	30	0.7	5.0 U	2.0 U	2.0 U	1.0 U	0.21 U	-	1.2 J ^b	5.0 U	10 U	1.4 ^b	0.21 U	
1,2-Dichloroethane	ug/L	0.17	100	11 ^a	15 ^a	30 ^a	1.0 U	0.43 U	-	3.3 J ^a	24 ^a	27 ^a	1.0 U	0.43 U	
1,2-Dichloropropane	ug/L	0.82		5.0 U	2.0 U	2.0 U	1.0 U	0.35 U	-	5.0 U	5.0 U	10 U	1.0 U	0.35 U	
1,3,5-Trimethylbenzene	ug/L	6	71	-	-	-	18 ^a	-	-	-	-	-	18 ^a	-	
1,3-Dichlorobenzene	ug/L			5.0 U	2.0 U	2.0 U	1.0 U	0.34 U	-	5.0 U	5.0 U	10 U	0.78 J	0.34 U	
1,4-Dichlorobenzene	ug/L	0.48	26	5.0 U	2.0 U	2.0 U	1.0 U	0.33 U	-	5.0 U	5.0 U	10 U	1.1 ^a	0.33 U	
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	560	14000	79	10 U	20	14	7.9	-	25 U	25 U	50 U	5.0 U	1.9 U	
2-Hexanone	ug/L	3.8	99	25 U	10 U	10 U	23 ^a	1.1 U	-	25 U	25 U	50 U	5.0 U	1.1 U	
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	630	170	25 U	10 U	17	30	1.3 U	-	25 U	25 U	50 U	5.0 U	1.3 U	
Acetone	ug/L	1800	1500	25 U	10 U	58	28	15	-	25 U	25 U	50 U	5.0 U	4.4 U	
Benzene	ug/L	0.46	370	860 ^{ab}	500 ^{ab}	750 ^{ab}	52 ^a	140 ^a	-	110 ^a	450 ^{ab}	420 ^{ab}	84 ^a	0.20 U	
Bromodichloromethane	ug/L	0.13		5.0 U	2.0 U	2.0 U	1.0 U	0.34 U	-	5.0 U	5.0 U	10 U	1.0 U	0.34 U	
Bromoform	ug/L	3.3	320	5.0 U	2.0 U	2.0 U	1.0 U	0.54 U	-	5.0 U	5.0 U	10 U	1.0 U	0.54 U	
Bromomethane (Methyl bromide)	ug/L	0.75		5.0 U	2.0 U	2.0 UJ	1.0 U	0.55 U	-	5.0 U	5.0 UJ	10 U	1.0 U	0.55 U	
Carbon disulfide	ug/L	81	0.92	5.0 U	2.0 U	2.0 U	1.0 U	0.82 U	-	5.0 U	5.0 U	10 U	1.0 U	0.82 U	
Carbon tetrachloride	ug/L	0.46	13.3	5.0 U	2.0 U	2.0 U	1.0 U	0.21 U	-	5.0 U	5.0 U	10 U	1.0 U	0.21 U	
Chlorobenzene	ug/L	7.8	1.3	5.0 U	2.0 U	2.0 U	1.0 U	0.38 U	-	5.0 U	5.0 U	10 U	1.0 U	0.38 U	
Chloroethane	ug/L	830		5.0 U	2.0 U	2.0 U	1.0 U	0.32 U	-	5.0 U	5.0 U	10 U	1.0 U	0.32 U	
Chloroform (Trichloromethane)	ug/L	0.22	1.8	7.9 ^{ab}	2.0 U	2.0 U	1.0 U	0.33 U	-	5.0 U	5.0 U	10 U	1.0 U	0.33 U	
Chloromethane (Methyl chloride)	ug/L	19		5.0 U	2.0 U	2.0 U	1.0 U	0.40 U	-	5.0 U	5.0 U	10 U	1.0 U	0.40 U	
cis-1,2-Dichloroethene	ug/L	2.5		5.0 U	2.0 U	2.0 U	1.0 U	0.22 U	-	5.0 U	5.0 U	10 U	1.0 U	0.22 U	
cis-1,3-Dichloropropene	ug/L			5.0 U	2.0 U	2.0 U	1.0 U	0.22 U	-	5.0 U	5.0 U	10 U	1.0 U	0.22 U	
Cyclohexane	ug/L	1300		250	39	250	33	110	-	270	340	330	160	0.32 U	
Dibromochloromethane	ug/L	0.87		5.0 U	2.0 U	2.0 U	1.0 U	0.28 U	-	5.0 U	5.0 U	10 U	1.0 U	0.28 U	
Dichlorodifluoromethane (CFC-12)	ug/L	20		5.0 U	2.0 U	2.0 U	1.0 U	0.31 U	-	5.0 U	5.0 U	10 U	1.0 U	0.31 U	
Ethylbenzene	ug/L	1.5	90	460 ^{ab}	3.5 ^a	510 ^{ab}	70 ^a	340 ^{ab}	-	640 ^{ab}	690 ^{ab}	720 ^{ab}	230 ^{ab}	0.30 U	
Isopropyl benzene	ug/L	45	2.6	14 ^b	14 ^b	16 ^b	2.9 ^b	11 ^b	-	37 ^b	51 ^{ab}	47 ^{ab}	30 ^b	0.34 U	
Methyl acetate	ug/L	2000		25 U	10 U	10 U	5.0 U	0.79 U	-	25 U	25 U	50 U	5.0 U	0.79 U	
Methyl cyclohexane	ug/L			68 J	16	87	14	36	-	100	130	150	61	0.71 U	
Methyl tert butyl ether (MTBE)	ug/L	10	11070	5.0 U	2.0 U	2.0 U	1.0 U	0.28 J	-	5.0 U	5.0 U	10 U	1.0 U	0.22 U	
Methylene chloride	ug/L	5	98.1	5.0 U	2.0 U	2.0 U	1.0 U	0.32 U	-	5.0 U	5.0 U	10 U	1.0 U	0.32 U	
Styrene	ug/L	100	72	5.0 U	2.0 U	2.0 U	1.0 U	0.42 U	-	13	5.0 U	10 U	1.0 U	0.42 U	
Tetrachloroethene	ug/L	1	111	5.0 U	2.0 U	2.0 U	1.0 U	0.25 U	-	5.0 U	5.0 U	10 U	1.0 U	0.25 U	
Toluene	ug/L	110	2	360 ^{ab}	2.7 ^b	78 ^b	9.9 ^b	49 ^b	-	760 ^{ab}	630 ^{ab}	680 ^{ab}	110 ^b	0.38 U	
trans-1,2-Dichloroethene	ug/L	6.8	970	5.0 U	2.0 U	2.0 U	1.0 U	0.24 U	-	5.0 U	5.0 U	10 U	1.0 U	0.24 U	
trans-1,3-Dichloropropene	ug/L			5.0 U	2.0 U	2.0 U	1.0 U	0.22 U	-	5.0 U	5.0 U	10 U	1.0 U	0.22 U	
Trichloroethene	ug/L	0.28	21	5.0 U	2.0 U	2.0 U	1.0 U	0.31 U	-	5.0 U	5.0 U	10 U	1.0 U	0.31 U	
Trichlorofluoromethane (CFC-11)	ug/L	520		5.0 U	2.0 U	2.0 U	1.0 U	0.32 UJ	-	5.0 U	5.0 U	10 U	1.0 U	0.32 U	
Trifluorotrichloroethane (CFC-113)	ug/L	1000		5.0 U	2.0 U	2.0 U	1.0 U	0.31 U	-	5.0 U	5.0 U	10 U	1.0 U	0.31 U	
Vinyl chloride	ug/L	0.019	930	5.0 U	2.0 U	2.0 U	1.0 U	0.17 U	-	5.0 U	5.0 U	10 U	1.0 U	0.17 U	
Xylenes (total)	ug/L	19	13	1500 ^{ab}	10	780 ^{ab}	190 ^{ab}	480 ^{ab}	-	1200 ^{ab}	1700 ^{ab}	1800 ^{ab}	310 ^{ab}	0.65 U	

Historical Groundwater Analytical Results
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Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-4 MW-36S DA-MW36S-W101 09/18/2013 (Duplicate)	OU-4 MW-36S DA-MW36S-W002 10/14/2015	OU-4 MW-36S WG-17338-110417-DT-023 11/04/2017	OU-4 MW-36S DA-MW36S-W003 08/28/2018	OU-4 MW-36S GW-11222397-011023-MA-03 01/10/2023	OU-4 MW-36S GW-11222397-011023-MA-04 01/10/2023 (Duplicate)	OU-4 MW-50 DA-MW50-W001 10/14/2015	OU-4 MW-50 WG-17338-110717-DT-051 11/07/2017	OU-4 MW-50 WG-17338-110717-DT-054 11/07/2017 (Duplicate)	OU-4 MW-50 DA-MW50-W002 08/28/2018	OU-4 MW-50R GW-11222397-011023-ZB-05 01/10/2023	
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)												
Semi-Volatile Organic Compounds															
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	71		10 U	10 U	20 U	10 U	0.63 U	0.63 U	10 U	10 U	10 U	10 U	0.63 U	
2,4,5-Trichlorophenol	ug/L	120		10 U	10 U	20 U	10 U	0.88 U	0.88 U	10 U	10 U	10 U	10 U	0.88 U	
2,4,6-Trichlorophenol	ug/L	1.2	4.9	10 U	10 U	20 U	10 U	0.86 U	0.86 U	10 U	10 U	10 U	10 U	0.86 U	
2,4-Dichlorophenol	ug/L	4.6	11	10 U	10 U	20 U	10 U	1.1 U	1.1 U	10 U	10 U	10 U	10 U	1.1 U	
2,4-Dimethylphenol	ug/L	36		10 U	10 U	33	10 U	19	16	4.5 J	20	21	5.2 J	0.62 U	
2,4-Dinitrophenol	ug/L	3.9		31 U	20 U	40 U	20 U	2.6 UJ	2.6 UJ	20 U	20 U	20 U	20 U	2.6 UJ	
2,4-Dinitrotoluene	ug/L	0.24	44	2.0 U	2.0 U	4.0 U	2.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U	
2,6-Dinitrotoluene	ug/L	0.049	81	2.0 U	2.0 U	4.0 U	2.0 U	0.83 U	0.83 U	2.0 U	2.0 U	2.0 U	2.0 U	0.83 U	
2-Chloronaphthalene	ug/L	75		10 U	10 U	20 U	10 U	1.2 U	1.2 U	10 U	10 U	10 U	10 U	1.2 U	
2-Chlorophenol	ug/L	9.1	24	10 U	10 U	20 U	10 U	0.38 U	0.38 U	10 U	10 U	10 U	10 U	0.38 U	
2-Methylnaphthalene	ug/L	3.6	4.7	170 ^{ab}	10 U	120 ^{ab}	9.2 J ^{ab}	64 ^{ab}	63 ^{ab}	100 ^{ab}	89 J ^{ab}	100 J ^{ab}	87 ^{ab}	0.53 U	
2-Methylphenol	ug/L	93	13	10 U	10 U	18 J ^b	2.7 J	9.6 J	7.8 J	2.6 J	6.4 J	6.7 J	2.1 J	0.67 U	
2-Nitroaniline	ug/L	19		20 U	10 U	20 U	10 U	0.47 U	0.47 U	10 U	10 U	10 U	10 U	0.47 U	
2-Nitrophenol	ug/L			10 U	10 U	20 U	10 U	0.75 U	0.75 U	10 U	10 U	10 U	10 U	0.75 U	
3,3'-Dichlorobenzidine	ug/L	0.13	4.5	20 U	10 U	20 U	10 U	1.4 U	1.4 U	10 U	10 U	10 U	10 U	1.4 U	
3-Nitroaniline	ug/L			20 U	10 U	20 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	1.9 U	
4,6-Dinitro-2-methylphenol	ug/L	0.15		31 U	20 U	40 U	20 U	3.0 UJ	3.0 UJ	20 U	20 U	20 U	20 U	3.0 UJ	
4-Bromophenyl phenyl ether	ug/L			10 U	10 U	20 U	10 U	0.75 U	0.75 U	10 U	10 U	10 U	10 U	0.75 U	
4-Chloro-3-methylphenol	ug/L	140		10 U	10 U	20 U	10 U	0.58 U	0.58 U	10 U	10 U	10 U	10 U	0.58 U	
4-Chloroaniline	ug/L	0.37	232	10 U	10 U	20 U	10 U	1.9 U	1.9 U	10 U	10 U	10 U	10 U	1.9 U	
4-Chlorophenyl phenyl ether	ug/L			10 U	10 U	20 U	10 U	1.3 U	1.3 U	10 U	10 U	10 U	10 U	1.3 U	
4-Methylphenol	ug/L	37	543	2.4 J	10 U	10 J	38 ^a	0.65 U	0.65 U	3.9 J	5.0 J	10 U	1.7 J	0.65 U	
4-Nitroaniline	ug/L	3.8		20 U	10 U	20 U	10 U	1.2 U	1.2 U	10 U	10 U	10 U	10 U	1.2 U	
4-Nitrophenol	ug/L			31 U	20 U	40 U	20 U	4.0 U	4.0 U	20 U	20 U	20 U	20 U	4.0 U	
Acenaphthene	ug/L	53	5.8	10 U	10 U	2.6 J	10 U	1.1 U	1.3 J	2.1 J	3.3 J	10 U	2.7 J	1.1 U	
Acenaphthylene	ug/L			10 U	10 U	20 U	10 U	0.82 U	0.82 U	10 U	10 U	10 U	10 U	0.82 U	
Acetophenone	ug/L	190		10 U	10 U	48	6.5 J	2.3 U	2.3 U	25	37	39	10 U	2.3 U	
Anthracene	ug/L	180	0.012	10 U	10 U	20 U	10 U	1.3 U	1.3 U	10 U	10 UJ	10 UJ	10 U	1.3 U	
Atrazine	ug/L	0.3	1.8	10 U	2.0 U	4.0 U	2.0 U	1.3 U	1.3 U	2.0 U	2.0 U	2.0 U	2.0 U	1.3 U	
Benzaldehyde	ug/L	19		10 UJ	10 U	20 U	10 U	2.1 UJ	2.1 UJ	10 U	10 U	10 U	10 U	2.1 UJ	
Benzo(a)anthracene	ug/L	0.03	0.018	1.0 U	1.0 U	2.0 U	1.0 U	0.59 U	0.59 U	1.0 U	1.0 U	1.0 U	1.0 U	0.59 U	
Benzo(a)pyrene	ug/L	0.025	0.015	1.0 U	1.0 U	2.0 U	1.0 U	0.41 U	0.41 U	1.0 U	1.0 U	1.0 U	1.0 U	0.41 U	
Benzo(b)fluoranthene	ug/L	0.25		1.0 U	1.0 U	2.0 U	2.0 U	0.68 U	0.68 U	1.0 U	1.0 U	1.0 U	2.0 U	0.68 U	
Benzo(g,h,i)perylene	ug/L			10 U	10 U	20 U	10 U	0.70 U	0.70 U	10 U	10 U	10 U	10 U	0.70 U	
Benzo(k)fluoranthene	ug/L	2.5		1.0 U	1.0 U	2.0 U	1.0 U	0.67 U	0.67 U	1.0 U	1.0 U	1.0 U	1.0 U	0.67 U	
Biphenyl (1,1-Biphenyl)	ug/L	0.083	14	10 ^a	10 U	10 J ^a	10 U	5.0 J ^a	4.6 J ^a	2.2 J ^a	2.0 J ^a	2.1 J ^a	10 U	1.2 U	
bis(2-Chloroethoxy)methane	ug/L	5.9		10 U	10 U	20 U	10 U	0.59 U	0.59 U	10 U	10 U	10 U	10 U	0.59 U	
bis(2-Chloroethyl)ether	ug/L	0.014		1.0 U	1.0 U	2.0 U	1.0 U	0.63 U	0.63 U	1.0 U	1.0 U	1.0 U	1.0 U	0.63 U	
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	5.6	16	10 U	8.7 B ^a	4.0 U	2.0 U	0.80 U	0.80 U	7.2 B ^a	2.0 U	2.0 U	2.0 U	0.80 U	
Butyl benzylphthalate (BBP)	ug/L	16	19	10 U	10 U	20 U	10 U	0.85 U	0.85 U	10 U	10 U	10 U	10 U	0.85 U	
Caprolactam	ug/L	990		R	10 U	20 U	120	2.2 U	2.2 U	10 U	10 U	10 U	10 U	2.2 U	
Carbazole	ug/L			10 U	10 U	20 U	10 U	0.68 U	0.68 U	10 U	1.5 J	1.8 J	1.6 J	0.68 U	
Chrysene	ug/L	25		10 U	2.0 U	4.0 U	2.0 U	0.91 U	0.91 U	2.0 U	2.0 U	2.0 U	2.0 U	0.91 U	
Dibenz(a,h)anthracene	ug/L	0.025		1.0 U	1.0 U	2.0 U	1.0 U	0.72 U	0.72 U	1.0 U	1.0 U	1.0 U	1.0 U	0.72 U	
Dibenzofuran	ug/L	0.79	3.7	3.6 J ^a	10 U	3.6 J ^a	10 U	1.8 J ^a	1.9 J ^a	1.6 J ^a	2.6 J ^a	2.9 J ^a	1.7 J ^a	1.1 U	
Diethyl phthalate	ug/L	1500	210	10 U	10 U	20 U	10 U	0.98 U	0.98 U	10 U	10 U	10 U	10 U	0.98 U	
Dimethyl phthalate	ug/L			10 U	10 U	20 U	10 U	0.77 U	0.77 U	10 U	10 U	10 U	10 U	0.77 U	
Di-n-butylphthalate (DBP)	ug/L	90	19	10 U	10 U	20 U	10 U	0.84 U	0.84 U	10 U	10 U	10 U	10 U	0.84 U	
Di-n-octyl phthalate (DnOP)	ug/L	20	22	10 U	10 U	20 U	10 U	0.75 U	0.75 U	10 U	10 U	10 U	10 U	0.75 U	
Fluoranthene	ug/L	80	0.04	10 U	10 U	20 U	10 U	0.84 U	0.84 U	10 U	10 U	10 U	10 U	0.84 U	
Fluorene	ug/L	29	3	3.6 J ^b	10 U	5.3 J ^b	10 U	2.2 J	2.2 J	2.8 J	5.4 J ^b	6.2 J ^b	3.2 J ^b	0.91 U	
Hexachlorobenzene	ug/L	0.0098	0.0003	1.0 U	1.0 U	2.0 U	1.0 U	0.40 U	0.40 U	1.0 U	1.0 U	1.0 U	1.0 U	0.40 U	
Hexachlorobutadiene	ug/L	0.14	1.3	2.0 U	1.0 U	2.0 U	1.0 U	0.78 U	0.78 U	1.0 U	1.0 U	1.0 U	1.0 U	0.78 U	
Hexachlorocyclopentadiene	ug/L	0.041		10 U	10 U	20 U	10 U*	3.6 U	3.6 U	10 U	10 U	10 U	10 U*	3.6 U	
Hexachloroethane	ug/L	0.33	12	1.0 U	1.0 U	2.0 U	2.0 U	0.80 U	0.80 U	1.0 U	1.0 U	1.0 U	2.0 U	0.80 U	
Indeno(1,2,3-cd)pyrene	ug/L	0.25		1.0 U	1.0 U	2.0 U	2.0 U	0.94 U	0.94 U	1.0 U	1.0 U	1.0 U	2.0 U	0.94 U	
Isophorone	ug/L	78		10 U	10 U	20 U	10 U	0.80 U	0.80 U	10 U	10 U	10 U	10 U	0.80 U	
Naphthalene	ug/L	0.12	1.1	240 ^{ab}	10 ^{ab}	180 ^{ab}	12 ^{ab}	92 ^{ab}	91 ^{ab}	180 ^{ab}	130 J ^{ab}	140 J ^{ab}	100 ^{ab}	0.54 U	
Nitrobenzene	ug/L	0.14		1.0 UJ	1.0 U	2.0 U	1.0 U	0.57 U	0.57 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	0.57 U	
N-Nitrosodi-n-propylamine	ug/L	0.011		1.0 U	1.0 U	2.0 U	1.0 U	0.43 U	0.43 U	1.0 U	1.0 U	1.0 U	1.0 U	0.43 U	
N-Nitrosodiphenylamine	ug/L	12	210	10 U	10 U	20 U	10 U	0.89 U	0.89 U	10 U	10 U	10 U	10 U	0.89 U	
Pentachlorophenol	ug/L	0.041	0.5	31 U	20 U	40 U	20 U	1.4 U	1.4 U	20 U	20 U	20 U	20 U	1.4 U	
Phenanthrene	ug/L	12	0.4	3.3 J ^b	10 U	3.1 J ^b	10 U	1.6 J ^b	1.5 J ^b	4.1 J ^b	9.3 J ^b	9.9 J ^b	3.2 J ^b	1.3 U	
Phenol	ug/L	580	4	10 U	10 U	20 U	3.7 J	0.29 U	0.29 U	10 U	10 U	10 U	10 U	0.29 U	
Pyrene	ug/L	12	0.025	10 U	10 U	20 U	10 U	1.6 U	1.6 U	10 U	10 U	10 U	10 U	1.6 U	

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Operable Unit: Sample Location: Sample ID: Sample Date:				OU-4 MW-36S DA-MW36S-W101 09/18/2013 (Duplicate)	OU-4 MW-36S DA-MW36S-W002 10/14/2015	OU-4 MW-36S WG-17338-110417-DT-023 11/04/2017	OU-4 MW-36S DA-MW36S-W003 08/28/2018	OU-4 MW-36S GW-11222397-011023-MA-03 01/10/2023	OU-4 MW-36S GW-11222397-011023-MA-04 01/10/2023 (Duplicate)	OU-4 MW-50 DA-MW50-W001 10/14/2015	OU-4 MW-50 WG-17338-110717-DT-051 11/07/2017	OU-4 MW-50 WG-17338-110717-DT-054 11/07/2017 (Duplicate)	OU-4 MW-50 DA-MW50-W002 08/28/2018	OU-4 MW-50R GW-11222397-011023-ZB-05 01/10/2023	
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)												
Metals															
Aluminum	ug/L	a 2000	b 87	-	-	34.3 J	-	-	-	-	-	196 ^b	233 ^b	-	-
Aluminum (dissolved)	ug/L	2000	87	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	ug/L	0.78	30	-	-	0.65 J	-	-	-	-	-	2.0 U	0.62 J	-	-
Antimony (dissolved)	ug/L	0.78	30	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	ug/L	0.052	5	-	-	2.4 ^a	-	-	-	-	-	3.4 ^a	3.4 ^a	-	-
Arsenic (dissolved)	ug/L	0.052	5	-	-	-	-	-	-	-	-	-	-	-	-
Barium	ug/L	380	4	-	-	324 ^b	-	-	-	-	-	249 ^b	253 ^b	-	-
Barium (dissolved)	ug/L	380	4	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	ug/L	2.5	0.66	-	-	0.80 U	-	-	-	-	-	0.80 U	0.80 U	-	-
Beryllium (dissolved)	ug/L	2.5	0.66	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	ug/L	0.18	0.25	-	-	2.0 U	-	-	-	-	-	2.0 U	2.0 U	-	-
Cadmium (dissolved)	ug/L	0.18	0.25	-	-	-	-	-	-	-	-	-	-	-	-
Calcium	ug/L			-	-	22900	-	-	-	-	-	50900	52000	-	-
Calcium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-	-	-	-
Chromium	ug/L	10	85	-	-	4.0 U	-	-	-	-	-	4.0 U	4.0 U	-	-
Chromium (dissolved)	ug/L	10	85	-	-	-	-	-	-	-	-	-	-	-	-
Chromium VI (hexavalent)	ug/L	0.035	11	-	-	-	-	-	-	-	-	-	-	-	-
Chromium VI (hexavalent) (dissolved)	ug/L	0.035	11	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	ug/L	0.6	23	-	-	111 ^{ab}	-	-	-	-	-	9.2 ^a	9.2 ^a	-	-
Cobalt (dissolved)	ug/L	0.6	23	-	-	-	-	-	-	-	-	-	-	-	-
Copper	ug/L	80	9	-	-	71.3 U	-	-	-	-	-	4.0 U	4.0 U	-	-
Copper (dissolved)	ug/L	80	9	-	-	-	-	-	-	-	-	-	-	-	-
Iron	ug/L	1400	300	-	-	89300 ^{ab}	-	-	-	-	-	46700 ^{ab}	47500 ^{ab}	-	-
Iron (dissolved)	ug/L	1400	300	-	-	-	-	-	-	-	-	-	-	-	-
Lead	ug/L	15	2.5	-	-	0.86 J	-	-	-	-	-	1.1 J	1.2	-	-
Lead (dissolved)	ug/L	15	2.5	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	ug/L			-	-	19700	-	-	-	-	-	14800	15200	-	-
Magnesium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-	-	-	-
Manganese	ug/L	43	120	-	-	32400 ^{ab}	-	-	-	-	-	4340 ^{ab}	4440 ^{ab}	-	-
Manganese (dissolved)	ug/L	43	120	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	ug/L	0.063	0.026	-	-	0.20 U	-	-	-	-	-	0.20 U	0.20 U	-	-
Mercury (dissolved)	ug/L	0.063	0.026	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	ug/L	39	52	-	-	5.6 U	-	-	-	-	-	4.0 U	4.0 U	-	-
Nickel (dissolved)	ug/L	39	52	-	-	-	-	-	-	-	-	-	-	-	-
Potassium	ug/L			-	-	1820	-	-	-	-	-	3210	3280	-	-
Potassium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-	-	-	-
Selenium	ug/L	10	1	-	-	1.2 J ^b	-	-	-	-	-	10.0 U	10.0 U	-	-
Selenium (dissolved)	ug/L	10	1	-	-	-	-	-	-	-	-	-	-	-	-
Silver	ug/L	9.4	3.2	-	-	2.0 U	-	-	-	-	-	2.0 U	2.0 U	-	-
Silver (dissolved)	ug/L	9.4	3.2	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	ug/L			-	-	62600	-	-	-	-	-	59200	60800	-	-
Sodium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-	-	-	-
Thallium	ug/L	0.02	0.8	-	-	0.80 U	-	-	-	-	-	0.80 U	0.80 U	-	-
Thallium (dissolved)	ug/L	0.02	0.8	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	ug/L	8.6	20	-	-	4.0 U	-	-	-	-	-	4.0 U	4.0 U	-	-
Vanadium (dissolved)	ug/L	8.6	20	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	ug/L	600	120	-	-	16.0 U	-	-	-	-	-	16.0 U	16.0 U	-	-
Zinc (dissolved)	ug/L	600	120	-	-	-	-	-	-	-	-	-	-	-	-

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-5 MW-48 WG-17338-111214-RR-001 11/12/2014	OU-5 MW-48 WG-17338-110417-DT-021 11/04/2017	OU-5 MW-48 GW-11210099-081820-ST-002 08/18/2020	OU-5 MW-48 GW-11210099-081820-ST-003 08/18/2020 (Duplicate)	OU-5 MW-48R GW-11222397-011123-MA-13 01/11/2023	OU-5 MW-48R GW-11222397-011123-MA-14 01/11/2023 (Duplicate)	OU-5 MW-109 WG-17338-111214-RR-006 11/12/2014	OU-5 MW-109 WG-17338-110417-SG-018 11/04/2017	OU-5 MW-109 WG-17338-110417-SG-020 11/04/2017 (Duplicate)
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)									
Volatile Organic Compounds												
1,1,1-Trichloroethane	ug/L	200	11	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	0.076	610	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	0.041	1200	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	2.8	47	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	7	25	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	0.4	24	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
1,2,4-Trimethylbenzene	ug/L	5.6		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.00033		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.0075		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	30	0.7	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	0.17	100	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	0.82		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
1,3,5-Trimethylbenzene	ug/L	6	71	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ug/L			-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	0.48	26	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	560	14000	-	5.0 U	-	-	-	-	-	5.0 U	5.0 U
2-Hexanone	ug/L	3.8	99	-	5.0 U	-	-	-	-	-	5.0 U	5.0 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	630	170	-	5.0 U	-	-	-	-	-	5.0 U	5.0 U
Acetone	ug/L	1800	1500	-	5.0 U	-	-	-	-	-	5.0 U	5.0 U
Benzene	ug/L	0.46	370	-	1.0 U	-	-	0.20 U	-	-	1.0 U	1.0 U
Bromodichloromethane	ug/L	0.13		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Bromoform	ug/L	3.3	320	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	0.75		-	1.0 UJ	-	-	-	-	-	1.0 U	1.0 U
Carbon disulfide	ug/L	81	0.92	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Carbon tetrachloride	ug/L	0.46	13.3	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Chlorobenzene	ug/L	7.8	1.3	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Chloroethane	ug/L	830		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	0.22	1.8	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	19		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	2.5		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L			-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Cyclohexane	ug/L	1300		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Dibromochloromethane	ug/L	0.87		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	20		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Ethylbenzene	ug/L	1.5	90	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Isopropyl benzene	ug/L	45	2.6	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Methyl acetate	ug/L	2000		-	5.0 U	-	-	-	-	-	5.0 U	5.0 U
Methyl cyclohexane	ug/L			-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	10	11070	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Methylene chloride	ug/L	5	98.1	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Styrene	ug/L	100	72	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Tetrachloroethene	ug/L	1	111	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Toluene	ug/L	110	2	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	6.8	970	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L			-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Trichloroethene	ug/L	0.28	21	-	1.0 U	-	-	3.8 ^a	-	-	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	520		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	1000		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Vinyl chloride	ug/L	0.019	930	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Xylenes (total)	ug/L	19	13	-	2.0 U	-	-	-	-	-	2.0 U	2.0 U

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-5 MW-48 WG-17338-111214-RR-001 11/12/2014	OU-5 MW-48 WG-17338-110417-DT-021 11/04/2017	OU-5 MW-48 GW-11210099-081820-ST-002 08/18/2020	OU-5 MW-48 GW-11210099-081820-ST-003 08/18/2020 (Duplicate)	OU-5 MW-48R GW-11222397-011123-MA-13 01/11/2023	OU-5 MW-48R GW-11222397-011123-MA-14 01/11/2023 (Duplicate)	OU-5 MW-109 WG-17338-111214-RR-006 11/12/2014	OU-5 MW-109 WG-17338-110417-SG-018 11/04/2017	OU-5 MW-109 WG-17338-110417-SG-020 11/04/2017 (Duplicate)
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)									
Semi-Volatile Organic Compounds												
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	71		-	10 U	-	-	-	-	-	10 U	10 U
2,4,5-Trichlorophenol	ug/L	120		-	10 U	-	-	-	-	-	10 U	10 U
2,4,6-Trichlorophenol	ug/L	1.2	4.9	-	10 U	-	-	-	-	-	10 U	10 U
2,4-Dichlorophenol	ug/L	4.6	11	-	10 U	-	-	-	-	-	10 U	10 U
2,4-Dimethylphenol	ug/L	36		-	10 U	-	-	-	-	-	10 U	10 U
2,4-Dinitrophenol	ug/L	3.9		-	20 U	-	-	-	-	-	20 U	20 U
2,4-Dinitrotoluene	ug/L	0.24	44	-	2.0 U	-	-	-	-	-	2.0 U	2.0 U
2,6-Dinitrotoluene	ug/L	0.049	81	-	2.0 U	-	-	-	-	-	2.0 U	2.0 U
2-Chloronaphthalene	ug/L	75		-	10 U	-	-	-	-	-	10 U	10 U
2-Chlorophenol	ug/L	9.1	24	-	10 U	-	-	-	-	-	10 U	10 U
2-Methylnaphthalene	ug/L	3.6	4.7	-	10 U	-	-	-	-	-	10 U	10 U
2-Methylphenol	ug/L	93	13	-	10 U	-	-	-	-	-	10 U	10 U
2-Nitroaniline	ug/L	19		-	10 U	-	-	-	-	-	10 U	10 U
2-Nitrophenol	ug/L			-	10 U	-	-	-	-	-	10 U	10 U
3,3'-Dichlorobenzidine	ug/L	0.13	4.5	-	10 U	-	-	-	-	-	10 U	10 U
3-Nitroaniline	ug/L			-	10 U	-	-	-	-	-	10 U	10 U
4,6-Dinitro-2-methylphenol	ug/L	0.15		-	20 U	-	-	-	-	-	20 U	20 U
4-Bromophenyl phenyl ether	ug/L			-	10 U	-	-	-	-	-	10 U	10 U
4-Chloro-3-methylphenol	ug/L	140		-	10 U	-	-	-	-	-	10 U	10 U
4-Chloroaniline	ug/L	0.37	232	-	10 U	-	-	-	-	-	10 U	10 U
4-Chlorophenyl phenyl ether	ug/L			-	10 U	-	-	-	-	-	10 U	10 U
4-Methylphenol	ug/L	37	543	-	10 U	-	-	-	-	-	10 U	10 U
4-Nitroaniline	ug/L	3.8		-	10 U	-	-	-	-	-	10 U	10 U
4-Nitrophenol	ug/L			-	20 U	-	-	-	-	-	20 U	20 U
Acenaphthene	ug/L	53	5.8	-	10 U	-	-	-	-	-	10 U	10 U
Acenaphthylene	ug/L			-	10 U	-	-	-	-	-	10 U	10 U
Acetophenone	ug/L	190		-	10 U	-	-	-	-	-	10 U	10 U
Anthracene	ug/L	180	0.012	-	10 U	-	-	-	-	-	10 U	10 U
Atrazine	ug/L	0.3	1.8	-	2.0 U	-	-	-	-	-	2.0 U	2.0 U
Benzaldehyde	ug/L	19		-	10 U	-	-	-	-	-	10 U	10 U
Benzo(a)anthracene	ug/L	0.03	0.018	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Benzo(a)pyrene	ug/L	0.025	0.015	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Benzo(b)fluoranthene	ug/L	0.25		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Benzo(g,h,i)perylene	ug/L			-	10 U	-	-	-	-	-	10 U	10 U
Benzo(k)fluoranthene	ug/L	2.5		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Biphenyl (1,1-Biphenyl)	ug/L	0.083	14	-	10 U	-	-	-	-	-	10 U	10 U
bis(2-Chloroethoxy)methane	ug/L	5.9		-	10 U	-	-	-	-	-	10 U	10 U
bis(2-Chloroethyl)ether	ug/L	0.014		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	5.6	16	-	2.0 U	-	-	-	-	-	2.0 U	2.0 U
Butyl benzylphthalate (BBP)	ug/L	16	19	-	10 U	-	-	-	-	-	10 U	10 U
Caprolactam	ug/L	990		-	10 U	-	-	-	-	-	10 U	10 U
Carbazole	ug/L			-	10 U	-	-	-	-	-	10 U	10 U
Chrysene	ug/L	25		-	2.0 U	-	-	-	-	-	2.0 U	2.0 U
Dibenz(a,h)anthracene	ug/L	0.025		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Dibenzofuran	ug/L	0.79	3.7	-	10 U	-	-	-	-	-	10 U	10 U
Diethyl phthalate	ug/L	1500	210	-	10 U	-	-	-	-	-	10 U	10 U
Dimethyl phthalate	ug/L			-	10 U	-	-	-	-	-	10 U	10 U
Di-n-butylphthalate (DBP)	ug/L	90	19	-	10 U	-	-	-	-	-	10 U	10 U
Di-n-octyl phthalate (DnOP)	ug/L	20	22	-	10 U	-	-	-	-	-	10 U	10 U
Fluoranthene	ug/L	80	0.04	-	10 U	-	-	-	-	-	10 U	10 U
Fluorene	ug/L	29	3	-	10 U	-	-	-	-	-	10 U	10 U
Hexachlorobenzene	ug/L	0.0098	0.0003	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Hexachlorobutadiene	ug/L	0.14	1.3	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Hexachlorocyclopentadiene	ug/L	0.041		-	10 U	-	-	-	-	-	10 U	10 U
Hexachloroethane	ug/L	0.33	12	-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Indeno(1,2,3-cd)pyrene	ug/L	0.25		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
Isophorone	ug/L	78		-	10 U	-	-	-	-	-	10 U	10 U
Naphthalene	ug/L	0.12	1.1	-	10 U	-	-	-	-	-	10 U	10 U
Nitrobenzene	ug/L	0.14		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
N-Nitrosodi-n-propylamine	ug/L	0.011		-	1.0 U	-	-	-	-	-	1.0 U	1.0 U
N-Nitrosodiphenylamine	ug/L	12	210	-	10 U	-	-	-	-	-	10 U	10 U
Pentachlorophenol	ug/L	0.041	0.5	-	20 U	-	-	-	-	-	20 U	20 U
Phenanthrene	ug/L	12	0.4	-	10 U	-	-	-	-	-	10 U	10 U
Phenol	ug/L	580	4	-	10 U	-	-	-	-	-	10 U	10 U
Pyrene	ug/L	12	0.025	-	10 U	-	-	-	-	-	10 U	10 U

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Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)									
Metals												
Aluminum	ug/L	2000	87	-	22.6 J	100 J ^b	163 J ^b	94.4 J ^b	1290 J ^b	-	33.2 J	47.2
Aluminum (dissolved)	ug/L	2000	87	290 ^b	-	-	-	-	-	200 U	-	-
Antimony	ug/L	0.78	30	-	2.0 U	3.7 U	3.7 U	0.76 U	0.76 U	-	2.0 U	2.0 U
Antimony (dissolved)	ug/L	0.78	30	20.0 U	-	-	-	-	-	20.0 U	-	-
Arsenic	ug/L	0.052	5	-	2.0 U	3.3 U	3.3 U	0.89 U	0.89 U	-	2.0 U	2.0 U
Arsenic (dissolved)	ug/L	0.052	5	15.0 U	-	-	-	-	-	15.0 U	-	-
Barium	ug/L	380	4	-	193 ^b	160 J ^b	172 J ^b	271 ^b	290 ^b	-	72.4 ^b	73.1 ^b
Barium (dissolved)	ug/L	380	4	258 ^b	-	-	-	-	-	85.2 J ^b	-	-
Beryllium	ug/L	2.5	0.66	-	0.80 U	0.17 U	0.17 U	0.13 U	0.13 U	-	0.80 U	0.80 U
Beryllium (dissolved)	ug/L	2.5	0.66	2.0 U	-	-	-	-	-	2.0 U	-	-
Cadmium	ug/L	0.18	0.25	-	2.0 U	0.33 U	0.33 U	0.39 U	0.39 U	-	2.0 U	2.0 U
Cadmium (dissolved)	ug/L	0.18	0.25	4.0 U	-	-	-	-	-	4.0 U	-	-
Calcium	ug/L			-	27800	29400 J	31500 J	35200	38100	-	26100	26300
Calcium (dissolved)	ug/L			26600	-	-	-	-	-	26100	-	-
Chromium	ug/L	10	85	-	4.0 U	5.0 U	5.0 U	2.5 UJ	8.7 J	-	4.0 U	4.0 U
Chromium (dissolved)	ug/L	10	85	10.0 U	-	-	-	-	-	10.0 U	-	-
Chromium VI (hexavalent)	ug/L	0.035	11	-	-	-	-	-	-	-	-	-
Chromium VI (hexavalent) (dissolved)	ug/L	0.035	11	-	-	-	-	-	-	-	-	-
Cobalt	ug/L	0.6	23	-	3.6 J ^a	2.8 J ^a	3.8 J ^a	6.0 ^a	7.3 ^a	-	4.0 U	4.0 U
Cobalt (dissolved)	ug/L	0.6	23	8.1 J ^a	-	-	-	-	-	50.0 U	-	-
Copper	ug/L	80	9	-	4.0 U	6.9 U	6.9 U	2.5 U	3.6 U	-	4.0 U	4.0 U
Copper (dissolved)	ug/L	80	9	25.0 U	-	-	-	-	-	25.0 U	-	-
Iron	ug/L	1400	300	-	64.7 J	2840 J ^{ab}	3750 J ^{ab}	90.3 J	1950 J ^{ab}	-	54.9 J	86.8 J
Iron (dissolved)	ug/L	1400	300	3610 ^{ab}	-	-	-	-	-	150 U	-	-
Lead	ug/L	15	2.5	-	1.2 U	2.5 J	3.1 J ^b	0.84 UJ	8.7 J ^b	-	1.2 U	1.2 U
Lead (dissolved)	ug/L	15	2.5	10.0 U	-	-	-	-	-	10.0 U	-	-
Magnesium	ug/L			-	28200	22000	23500	37600	41200	-	16600	16500
Magnesium (dissolved)	ug/L			28400	-	-	-	-	-	17400	-	-
Manganese	ug/L	43	120	-	6050 ^{ab}	833 J ^{ab}	927 J ^{ab}	6780 ^{ab}	7170 ^{ab}	-	29.2	31.2
Manganese (dissolved)	ug/L	43	120	6370 ^{ab}	-	-	-	7910 ^{ab}	7890 ^{ab}	30.2	-	-
Mercury	ug/L	0.063	0.026	-	0.20 U	0.091 U	0.091 U	0.091 U	0.091 U	-	0.20 U	0.20 U
Mercury (dissolved)	ug/L	0.063	0.026	0.20 U	-	-	-	-	-	0.20 U	-	-
Nickel	ug/L	39	52	-	5.6 U	4.1 U	4.1 U	5.1 U	5.5 U	-	5.6 U	5.6 U
Nickel (dissolved)	ug/L	39	52	40.0 U	-	-	-	-	-	40.0 U	-	-
Potassium	ug/L			-	3360	6970	7370	3370	3520	-	2390	2440
Potassium (dissolved)	ug/L			3730 J	-	-	-	-	-	2400 J	-	-
Selenium	ug/L	10	1	-	10.0 U	5.9 U	5.9 U	0.59 U	0.59 U	-	10.0 U	10.0 U
Selenium (dissolved)	ug/L	10	1	20.0 U	-	-	-	-	-	20.0 U	-	-
Silver	ug/L	9.4	3.2	-	2.0 U	5.8 U	5.8 U	0.29 U	0.29 U	-	2.0 U	2.0 U
Silver (dissolved)	ug/L	9.4	3.2	3.7 J ^b	-	-	-	-	-	10.0 U	-	-
Sodium	ug/L			-	64800	27900 J	30600 J	106000	105000	-	20900	20500
Sodium (dissolved)	ug/L			92300	-	-	-	-	-	32200	-	-
Thallium	ug/L	0.02	0.8	-	0.80 U	4.1 U	4.1 U	0.21 U	0.21 U	-	0.80 U	0.80 U
Thallium (dissolved)	ug/L	0.02	0.8	20.0 U	-	-	-	-	-	20.0 U	-	-
Vanadium	ug/L	8.6	20	-	4.0 U	7.2 U	7.2 U	0.76 J	5.6 J	-	4.0 U	4.0 U
Vanadium (dissolved)	ug/L	8.6	20	50.0 U	-	-	-	-	-	50.0 U	-	-
Zinc	ug/L	600	120	-	38.5 U	1.2 U	1.2 U	10 J	17.7	-	16.0 U	38.5 U
Zinc (dissolved)	ug/L	600	120	10.5 J	-	-	-	-	-	6.9 J	-	-

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-5 MW-109 GW-11210099-081920-ST-007 08/19/2020	OU-5 MW-109R GW - 11222397- 011223-MA-16 01/12/2023	OU-5 MW-112 GW-01733818-0713-RM-01 07/13/2018	OU-5 MW-112 GW-11210099-081820-ST-005 08/18/2020	OU-5 MW-112 GW-11222397-011123-ZB-12 01/11/2023	OU-5 MW-113 GW-01733818-0713-RM-02 07/13/2018	OU-5 MW-113 GW-01733818-0713-RM-03 07/13/2018 (Duplicate)	OU-5 MW-113 GW-11210099-081820-ST-004 08/18/2020	OU-5 MW-113R GW - 11222397- 011223-MA-15 01/12/2023
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)									
Volatile Organic Compounds												
1,1,1-Trichloroethane	ug/L	200	11	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
1,1,2,2-Tetrachloroethane	ug/L	0.076	610	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
1,1,2-Trichloroethane	ug/L	0.041	1200	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
1,1-Dichloroethane	ug/L	2.8	47	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
1,1-Dichloroethene	ug/L	7	25	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
1,2,4-Trichlorobenzene	ug/L	0.4	24	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
1,2,4-Trimethylbenzene	ug/L	5.6		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.00033		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.0075		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
1,2-Dichlorobenzene	ug/L	30	0.7	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
1,2-Dichloroethane	ug/L	0.17	100	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
1,2-Dichloropropane	ug/L	0.82		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
1,3,5-Trimethylbenzene	ug/L	6	71	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	ug/L			-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
1,4-Dichlorobenzene	ug/L	0.48	26	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	560	14000	-	-	5.0 U	-	-	5.0 U	5.0 U	-	-
2-Hexanone	ug/L	3.8	99	-	-	5.0 U	-	-	5.0 U	5.0 U	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	630	170	-	-	5.0 U	-	-	5.0 U	5.0 U	-	-
Acetone	ug/L	1800	1500	-	-	5.0 U	-	-	5.0 U	5.0 U	-	-
Benzene	ug/L	0.46	370	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Bromodichloromethane	ug/L	0.13		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Bromoform	ug/L	3.3	320	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Bromomethane (Methyl bromide)	ug/L	0.75		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Carbon disulfide	ug/L	81	0.92	-	-	0.27 J	-	-	1.0 U	1.0 U	-	-
Carbon tetrachloride	ug/L	0.46	13.3	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Chlorobenzene	ug/L	7.8	1.3	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Chloroethane	ug/L	830		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Chloroform (Trichloromethane)	ug/L	0.22	1.8	-	-	1.5*	-	-	1.0 U	1.0 U	-	-
Chloromethane (Methyl chloride)	ug/L	19		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
cis-1,2-Dichloroethene	ug/L	2.5		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
cis-1,3-Dichloropropene	ug/L			-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Cyclohexane	ug/L	1300		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Dibromochloromethane	ug/L	0.87		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Dichlorodifluoromethane (CFC-12)	ug/L	20		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Ethylbenzene	ug/L	1.5	90	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Isopropyl benzene	ug/L	45	2.6	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Methyl acetate	ug/L	2000		-	-	5.0 U	-	-	5.0 U	5.0 U	-	-
Methyl cyclohexane	ug/L			-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Methyl tert butyl ether (MTBE)	ug/L	10	11070	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Methylene chloride	ug/L	5	98.1	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Styrene	ug/L	100	72	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Tetrachloroethene	ug/L	1	111	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Toluene	ug/L	110	2	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
trans-1,2-Dichloroethene	ug/L	6.8	970	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
trans-1,3-Dichloropropene	ug/L			-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Trichloroethene	ug/L	0.28	21	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Trichlorofluoromethane (CFC-11)	ug/L	520		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Trifluorotrichloroethane (CFC-113)	ug/L	1000		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Vinyl chloride	ug/L	0.019	930	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Xylenes (total)	ug/L	19	13	-	-	2.0 U	-	-	2.0 U	2.0 U	-	-

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

Operable Unit: Sample Location: Sample ID: Sample Date:				OU-5 MW-109 GW-11210099-081920-ST-007 08/19/2020	OU-5 MW-109R GW - 11222397- 011223-MA-16 01/12/2023	OU-5 MW-112 GW-01733818-0713-RM-01 07/13/2018	OU-5 MW-112 GW-11210099-081820-ST-005 08/18/2020	OU-5 MW-112 GW-11222397-011123-ZB-12 01/11/2023	OU-5 MW-113 GW-01733818-0713-RM-02 07/13/2018	OU-5 MW-113 GW-01733818-0713-RM-03 07/13/2018 (Duplicate)	OU-5 MW-113 GW-11210099-081820-ST-004 08/18/2020	OU-5 MW-113R GW - 11222397- 011223-MA-15 01/12/2023
Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)									
Semi-Volatile Organic Compounds												
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	71		-	-	10 U	-	-	10 U	10 U	-	-
2,4,5-Trichlorophenol	ug/L	120		-	-	10 U	-	-	10 U	10 U	-	-
2,4,6-Trichlorophenol	ug/L	1.2	4.9	-	-	10 U	-	-	10 U	10 U	-	-
2,4-Dichlorophenol	ug/L	4.6	11	-	-	10 U	-	-	10 U	10 U	-	-
2,4-Dimethylphenol	ug/L	36		-	-	10 U	-	-	10 U	10 U	-	-
2,4-Dinitrophenol	ug/L	3.9		-	-	20 U	-	-	20 U	20 U	-	-
2,4-Dinitrotoluene	ug/L	0.24	44	-	-	2.0 U	-	-	2.0 U	2.0 U	-	-
2,6-Dinitrotoluene	ug/L	0.049	81	-	-	2.0 U	-	-	2.0 U	2.0 U	-	-
2-Chloronaphthalene	ug/L	75		-	-	10 U	-	-	10 U	10 U	-	-
2-Chlorophenol	ug/L	9.1	24	-	-	10 U	-	-	10 U	10 U	-	-
2-Methylnaphthalene	ug/L	3.6	4.7	-	-	10 U	-	-	10 U	10 U	-	-
2-Methylphenol	ug/L	93	13	-	-	10 U	-	-	10 U	10 U	-	-
2-Nitroaniline	ug/L	19		-	-	10 U	-	-	10 U	10 U	-	-
2-Nitrophenol	ug/L			-	-	10 U	-	-	10 U	10 U	-	-
3,3'-Dichlorobenzidine	ug/L	0.13	4.5	-	-	10 U	-	-	10 U	10 U	-	-
3-Nitroaniline	ug/L			-	-	10 U	-	-	10 U	10 U	-	-
4,6-Dinitro-2-methylphenol	ug/L	0.15		-	-	20 U	-	-	20 U	20 U	-	-
4-Bromophenyl phenyl ether	ug/L			-	-	10 U	-	-	10 U	10 U	-	-
4-Chloro-3-methylphenol	ug/L	140		-	-	10 U	-	-	10 U	10 U	-	-
4-Chloroaniline	ug/L	0.37	232	-	-	10 U	-	-	10 U	10 U	-	-
4-Chlorophenyl phenyl ether	ug/L			-	-	10 U	-	-	10 U	10 U	-	-
4-Methylphenol	ug/L	37	543	-	-	10 U	-	-	10 U	10 U	-	-
4-Nitroaniline	ug/L	3.8		-	-	10 U	-	-	10 U	10 U	-	-
4-Nitrophenol	ug/L			-	-	20 U	-	-	20 U	20 U	-	-
Acenaphthene	ug/L	53	5.8	-	-	10 U	-	-	10 U	10 U	-	-
Acenaphthylene	ug/L			-	-	10 U	-	-	10 U	10 U	-	-
Acetophenone	ug/L	190		-	-	10 U	-	-	10 U	10 U	-	-
Anthracene	ug/L	180	0.012	-	-	10 U	-	-	10 U	10 U	-	-
Atrazine	ug/L	0.3	1.8	-	-	2.0 U	-	-	2.0 U	2.0 U	-	-
Benzaldehyde	ug/L	19		-	-	10 U	-	-	10 U	10 U	-	-
Benzo(a)anthracene	ug/L	0.03	0.018	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Benzo(a)pyrene	ug/L	0.025	0.015	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Benzo(b)fluoranthene	ug/L	0.25		-	-	2.0 U	-	-	2.0 U	2.0 U	-	-
Benzo(g,h,i)perylene	ug/L			-	-	10 UJ	-	-	10 UJ	10 UJ	-	-
Benzo(k)fluoranthene	ug/L	2.5		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Biphenyl (1,1-Biphenyl)	ug/L	0.083	14	-	-	10 U	-	-	10 U	10 U	-	-
bis(2-Chloroethoxy)methane	ug/L	5.9		-	-	10 U	-	-	10 U	10 U	-	-
bis(2-Chloroethyl)ether	ug/L	0.014		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	5.6	16	-	-	2.0 U	-	-	2.0 U	2.0 U	-	-
Butyl benzylphthalate (BBP)	ug/L	16	19	-	-	10 U	-	-	10 U	10 U	-	-
Caprolactam	ug/L	990		-	-	10 U	-	-	10 U	10 U	-	-
Carbazole	ug/L			-	-	10 U	-	-	10 U	10 U	-	-
Chrysene	ug/L	25		-	-	2.0 U	-	-	2.0 U	2.0 U	-	-
Dibenz(a,h)anthracene	ug/L	0.025		-	-	1.0 UJ	-	-	1.0 UJ	1.0 UJ	-	-
Dibenzofuran	ug/L	0.79	3.7	-	-	10 U	-	-	10 U	10 U	-	-
Diethyl phthalate	ug/L	1500	210	-	-	10 U	-	-	10 U	10 U	-	-
Dimethyl phthalate	ug/L			-	-	10 U	-	-	10 U	10 U	-	-
Di-n-butylphthalate (DBP)	ug/L	90	19	-	-	10 U	-	-	10 U	10 U	-	-
Di-n-octyl phthalate (DnOP)	ug/L	20	22	-	-	10 U	-	-	10 U	10 U	-	-
Fluoranthene	ug/L	80	0.04	-	-	10 U	-	-	10 U	10 U	-	-
Fluorene	ug/L	29	3	-	-	10 U	-	-	10 U	10 U	-	-
Hexachlorobenzene	ug/L	0.0098	0.0003	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Hexachlorobutadiene	ug/L	0.14	1.3	-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
Hexachlorocyclopentadiene	ug/L	0.041		-	-	10 U	-	-	10 U	10 U	-	-
Hexachloroethane	ug/L	0.33	12	-	-	2.0 U	-	-	2.0 U	2.0 U	-	-
Indeno(1,2,3-cd)pyrene	ug/L	0.25		-	-	2.0 U	-	-	2.0 U	2.0 U	-	-
Isophorone	ug/L	78		-	-	10 U	-	-	10 U	10 U	-	-
Naphthalene	ug/L	0.12	1.1	-	-	10 U	-	-	10 U	10 U	-	-
Nitrobenzene	ug/L	0.14		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
N-Nitrosodi-n-propylamine	ug/L	0.011		-	-	1.0 U	-	-	1.0 U	1.0 U	-	-
N-Nitrosodiphenylamine	ug/L	12	210	-	-	10 U	-	-	10 U	10 U	-	-
Pentachlorophenol	ug/L	0.041	0.5	-	-	20 U	-	-	20 U	20 U	-	-
Phenanthrene	ug/L	12	0.4	-	-	10 U	-	-	10 U	10 U	-	-
Phenol	ug/L	580	4	-	-	10 U	-	-	10 U	10 U	-	-
Pyrene	ug/L	12	0.025	-	-	10 U	-	-	10 U	10 U	-	-

Historical Groundwater Analytical Results
Long-Term Stewardship Plan
Former GM Wilmington Assembly Plant
Wilmington, Delaware

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Parameters	Units	HSCA Groundwater Screening Levels (April 2023)	HSCA Ecological Surface Water Fresh Screening Levels (April 2023)									
Metals												
Aluminum	ug/L	2000	87	156 J ^b	1200 ^b	39.5 J	76.9 U	1920 ^b	22.4 J	40.0 U	107 J ^b	1040 ^b
Aluminum (dissolved)	ug/L	2000	87	-	-	-	-	-	-	-	-	-
Antimony	ug/L	0.78	30	3.7 U	1.9 J ^a	2.0 U	49.4 ^{ab}	0.76 U	2.0 U	2.0 U	15.2 J ^a	0.76 U
Antimony (dissolved)	ug/L	0.78	30	-	-	-	-	-	-	-	-	-
Arsenic	ug/L	0.052	5	3.3 U	1.6 J ^a	2.2 ^a	3.3 U	1.0 J ^a	0.77 J ^a	0.86 J ^a	3.3 U	0.89 U
Arsenic (dissolved)	ug/L	0.052	5	-	-	-	-	-	-	-	-	-
Barium	ug/L	380	4	81.9 J ^b	55.0 ^b	156 ^b	247 ^b	327 ^b	226 ^b	224 ^b	162 J ^b	264 ^b
Barium (dissolved)	ug/L	380	4	-	-	-	-	-	-	-	-	-
Beryllium	ug/L	2.5	0.66	0.17 U	0.13 U	0.80 U	0.17 U	0.13 U	0.80 U	0.80 U	0.17 U	0.13 U
Beryllium (dissolved)	ug/L	2.5	0.66	-	-	-	-	-	-	-	-	-
Cadmium	ug/L	0.18	0.25	0.33 U	0.39 U	2.0 U	0.36 J ^{ab}	0.39 U	2.0 U	2.0 U	0.33 U	0.39 U
Cadmium (dissolved)	ug/L	0.18	0.25	-	-	-	-	-	-	-	-	-
Calcium	ug/L			28400 J	90800	37800	40400 J	74300	35100	34400	24600 J	36600
Calcium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-
Chromium	ug/L	10	85	5.0 U	7.3	4.0 U	5.0 U	3.4 J	4.0 U	4.0 U	5.0 U	2.6 J
Chromium (dissolved)	ug/L	10	85	-	-	-	-	-	-	-	-	-
Chromium VI (hexavalent)	ug/L	0.035	11	-	-	-	-	-	-	-	-	-
Chromium VI (hexavalent) (dissolved)	ug/L	0.035	11	-	-	-	-	-	-	-	-	-
Cobalt	ug/L	0.6	23	2.0 U	2.8 J ^a	10.8 ^a	5.4 J ^a	7.4 ^a	9.2 ^a	8.8 ^a	14.6 J ^a	17.7 ^a
Cobalt (dissolved)	ug/L	0.6	23	-	-	-	-	-	-	-	-	-
Copper	ug/L	80	9	6.9 U	16.9 ^b	4.0 U	6.9 U	5.1 U	4.0 U	4.0 U	6.9 U	2.5 U
Copper (dissolved)	ug/L	80	9	-	-	-	-	-	-	-	-	-
Iron	ug/L	1400	300	139 J	4170 ^{ab}	1330 ^b	80.8 U	3500 ^{ab}	4680 ^{ab}	4570 ^{ab}	1100 J ^b	833 ^b
Iron (dissolved)	ug/L	1400	300	-	-	-	-	-	-	-	-	-
Lead	ug/L	15	2.5	2.5 J	11.9 ^b	1.2 U	5.2 J ^b	2.7 ^b	1.2 U	1.2 U	3.3 J ^b	0.84 J
Lead (dissolved)	ug/L	15	2.5	-	-	-	-	-	-	-	-	-
Magnesium	ug/L			19700	33800	20900	46000	52700	26100	25100	22700	31400
Magnesium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-
Manganese	ug/L	43	120	50.4 J ^a	125 ^{ab}	3840 ^{ab}	12200 J ^{ab}	1270 ^{ab}	2400 ^{ab}	2330 ^{ab}	4140 J ^{ab}	4720 ^{ab}
Manganese (dissolved)	ug/L	43	120	-	67.0 ^a	-	-	1170 ^{ab}	-	-	-	4850 ^{ab}
Mercury	ug/L	0.063	0.026	0.091 U	0.10 J ^{ab}	0.20 U	0.091 U	0.091 U	0.20 U	0.20 U	0.091 U	0.091 U
Mercury (dissolved)	ug/L	0.063	0.026	-	-	-	-	-	-	-	-	-
Nickel	ug/L	39	52	5.2 J	6.0	3.7 J	4.3 J	9.3 U	1.5 J	1.9 J	4.1 U	3.4 J
Nickel (dissolved)	ug/L	39	52	-	-	-	-	-	-	-	-	-
Potassium	ug/L			2790 J	35100	7050	3660 J	8730	7000	6820	4510 J	4550
Potassium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-
Selenium	ug/L	10	1	5.9 U	0.59 U	10.0 U	7.6 J ^b	0.59 U	10.0 U	10.0 U	5.9 U	0.59 U
Selenium (dissolved)	ug/L	10	1	-	-	-	-	-	-	-	-	-
Silver	ug/L	9.4	3.2	5.8 U	0.29 U	2.0 U	5.8 U	0.29 U	2.0 U	2.0 U	5.8 U	0.29 U
Silver (dissolved)	ug/L	9.4	3.2	-	-	-	-	-	-	-	-	-
Sodium	ug/L			24400 J	49900	41600	80500 J	84800	61800	59500	69900 J	74300
Sodium (dissolved)	ug/L			-	-	-	-	-	-	-	-	-
Thallium	ug/L	0.02	0.8	4.1 U	0.21 U	0.80 U	11.4 J ^{ab}	0.21 U	0.80 U	0.80 U	4.7 J ^{ab}	0.21 U
Thallium (dissolved)	ug/L	0.02	0.8	-	-	-	-	-	-	-	-	-
Vanadium	ug/L	8.6	20	7.2 U	6.7	4.0 U	7.2 U	5.3	4.0 U	4.0 U	7.2 U	3.8 J
Vanadium (dissolved)	ug/L	8.6	20	-	-	-	-	-	-	-	-	-
Zinc	ug/L	600	120	7.3 J	20.8	16.0 U	1.2 U	20.5	16.0 U	16.0 U	1.2 U	6.5 U
Zinc (dissolved)	ug/L	600	120	-	-	-	-	-	-	-	-	-

Notes:
- ug/L = micrograms per liter; DNREC = Department of Natural Resources and Environmental Control; HSCA = Hazardous Substane Cleanup Act;
J = estimated concentration; U = not detected at associated reporting limit; UJ = not detected, associated reporting limit is estimated; R = rejected
- Red values exceed the Delaware DNREC Hazardous Substance Cleanup Act Groundwater Screening Levels, updated April 2023
a) Concentration exceeds the HSCA Groundwater Screening Levels, April 2023

b) Concentration exceeds the HSCA Ecological Surface Water Fresh (Eco Fresh) Screening Levels, April 2023
- "-"- compound was not analyzed for

Appendix F

**OU 5 Groundwater Discharge to Little Mill
Creek**

APPENDIX F

OU-5 Groundwater Discharge to Little Mill Creek Estimation of Current Shallow Groundwater Flow Rate and Surface Water Concentrations

1. Background

In an October 8, 2018, email, DNREC requested an evaluation of mass loading from OU-5 groundwater into the nearby stream, Little Mill Creek, be included in the GHD's 2018 OU-5 Groundwater Monitoring Results letter. Specifically, DNREC requested evaluating constituents with detected concentrations that exceeded the HSCA Ecological Surface Water Fresh (Eco Fresh) Screening Levels. The 2018 evaluation concluded that even though mass loading from groundwater to Little Mill Creek surface water may be occurring, aquatic life in Little Mill Creek would not be impacted by any migration of metals from OU-5. An evaluation of mass loading was performed again after the 2020 OU-5 groundwater sampling event, summarized in GHD's 2020 OU-5 Groundwater Monitoring Plan letter, with the same conclusion.

In the following sections groundwater results from the four OU-5 perimeter wells (MW-48R, MW-109R, MW-112, and MW-113) sampled in 2023 are compared to the HSCA Eco Fresh Screening Levels and evaluated for potential mass loading into Little Mill Creek.

2. OU-5 Groundwater Results – Metals

Seven metals (aluminum, barium, copper, iron, lead, manganese, and mercury) were detected at these locations in 2023 at concentrations that exceeded the HSCA Eco Fresh Screening Levels, which are as follows:

- Aluminum, barium, iron, and manganese – all four wells (MW-48R, MW-109R, MW-112 and MW-113R)
- Lead - three wells (MW-48R, MW-109R, MW-112)
- Copper and mercury - one well (MW-109R)

Groundwater data are presented in Appendix E.

Comparing groundwater data to the HSCA Eco Fresh Screening Levels conservatively assumes that all groundwater discharges to surface water in Little Mill Creek without dilution and that all metals detected in groundwater are site-related and not associated with background metals concentrations. The four perimeter wells in OU-5 (MW-48R, MW-109R, MW-112, and MW-113R) vary in distance from Little Mill Creek between approximately 100 feet (MW-109R) and 350 feet (MW-48R), and as such, comparing groundwater concentrations from these wells directly to the HSCA Eco Fresh Screening Levels is conservative and does not account for dilution or dispersion that would occur before groundwater is discharged to Little Mill Creek. The following section includes an evaluation of the potential ecological impacts of OU-5 groundwater to surface water in Little Mill Creek by conservatively estimating high-end surface water concentrations using the maximum detected groundwater concentrations.

3. Estimated Surface Water Concentrations

Discharge of groundwater in the shallow saturated zone from the Site to Little Mill Creek may occur along the Site's northeastern boundary extending from OU-5 to OU-6.

The flow rate of groundwater in the shallow saturated zone from the Site to Little Mill Creek was estimated using Darcy's law, as follows:

$$Q = A \cdot K \frac{dh}{dx}$$

where:

$$\begin{array}{lll} Q & = & \text{flow rate (ft}^3/\text{s)} \\ A & = & \text{cross-sectional area of flow (ft}^2\text{)} \\ K & = & \text{hydraulic conductivity (ft/s)} \\ dh/dx & = & \text{hydraulic gradient (ft/ft)} \end{array}$$

The cross-sectional area of shallow groundwater flow (A) is estimated to be approximately 4,800 feet squared (ft²). This estimate is based on the distance from monitoring wells MW-48R to MW-109R along the eastern boundary of OU-5. The saturated thickness of the shallow saturated zone intersecting Little Mill Creek is estimated at 12 ft¹. This is likely an overestimate of the discharge area to Little Mill Creek.

The hydraulic conductivity (K) of the shallow saturated zone was estimated using the generic saturated hydraulic conductivity for sandy loam soil from the National Resources Conservation Service (NRCS). The average of the low and high hydraulic conductivities was used, which is approximately 28.2 micrometres per second (µm/s) or 9.3×10^{-6} feet per second (ft/s).

The hydraulic gradient (dh/dx) is estimated to range from approximately 0.003 to 0.004 ft/ft, based on the groundwater elevations from MW-28R to MW-113R and MW-112, respectively.

Using the high-end of the range of hydraulic gradients and the other values discussed above, the discharge of shallow groundwater is conservatively calculated to be approximately 1.6×10^{-4} ft³/s.

The stream concentration was calculated assuming groundwater discharge into the stream, as follows:

$$C_s = C_g (Q_g/Q_s)$$

where:

$$\begin{array}{lll} C_s & = & \text{stream concentration (}\mu\text{g/L)} \\ C_g & = & \text{groundwater concentration (}\mu\text{g/L)} \\ Q_g & = & \text{groundwater flow rate (ft}^3/\text{s)} \\ Q_s & = & \text{1Q10 Little Mill Creek flow rate (ft}^3/\text{s)} \end{array}$$

The maximum detected concentrations in groundwater from perimeter wells (MW-48R, MW-109R, MW-112, and MW-113R) for the seven metals that exceeded the HSCA Eco Fresh Screening Levels were used to evaluate potential mass loading to Little Mill Creek (listed in Table 1).

Using the minimum daily flow rate for Little Mill Creek from StreamStats (USGS station ID 01480095, 0.41 ft³/s), the estimated concentrations from the discharge of groundwater were conservatively calculated to be 0.79 µg/L for aluminum, 0.14 µg/L for barium, 7.0×10^{-3} µg/L for copper, 1.7 µg/L for iron, 4.9×10^{-3} µg/L for lead, 3.3 µg/L for manganese, and 4.1×10^{-5} µg/L for mercury (Table 1). These estimated concentrations are less than the respective HSCA Eco Fresh Screening Levels.

¹ The saturated thickness of the shallow zone intersecting with Little Mill Creek is based on the observed water table depth at MW-112 and MW-113 (10-ft below ground surface), the ground surface elevation at MW-112 (71.71 ft AMSL) and the minimum basin elevation of Little Mill Creek at USGS station 01480100 (49.7 ft AMSL), located approximately 1 mile downstream of the site.

Table 1 *Estimated Surface Water Concentrations*

Constituent	HSCA Eco Fresh Screening Level (ug/L)	Maximum Concentration (ug/L)	Estimated Surface Water Concentration (ug/L)
Aluminum	87	1,920	0.79
Barium	4	327	0.14
Copper	9	16.9	7.0×10^{-3}
Iron	300	4,170	1.7
Lead	2.5	11.9	4.9×10^{-3}
Manganese	120	7,910	3.3
Mercury	0.026	0.10	4.1×10^{-5}

Based on these estimated surface water concentrations, aquatic life in Little Mill Creek is not impacted by the migration of metals from OU-5.

Appendix G

OU 5 Cap Inspection Form

RACER Trust
Former GM Assembly Plant
Wilmington, Delaware
OU-5 Permanent Cap Inspection Form

Site Name/Description: OU-5 Test Track Area Permanent Cap
Inspector: Francis Ramacciotti and Zachary Boston
Weather: Overcast
Date/Time: 01/06/2023 12:15

Site Inspection Items	
If yes, describe in notes.	Notes/Location of Observations
1) Inspect the exterior concrete around the warehouse building.	
a Signs of significant cracks or holes?	No
b Areas of erosion of capped area?	No
c Noticeable vegetation (e.g., weeds, grass, rooting shrubs) through cap?	No
d Adequate drainage on and around the cap?	Yes
e Any evidence underground work was completed or is ongoing (e.g., trenching, fresh concrete)?	No
2) Inspect the interior slab of the warehouse building. The permanent cap is located East and North of Column D7.	
a Signs of significant cracks or holes?	No
b Any evidence underground work was completed or is ongoing (e.g., trenching, fresh concrete)?	No
3) Inspect the concrete pavement.	
a Signs of significant cracks or holes?	No
b Areas of erosion of capped area?	No
c Noticeable vegetation (e.g., weeds, grass, rooting shrubs) through cap?	No
d Adequate drainage on and around the cap?	Yes
e Any evidence underground work was completed or is ongoing (e.g., trenching, fresh concrete)?	No
4) Inspect the landscaped area.	
a Any exposed geotextile fabric?	No
b Signs of significant holes or penetrations through cap soil?	No
c Areas of erosion?	No
d Adequate drainage on and around the cap?	Yes

See Photos at the end of this form

Comments/Remarks

None

Corrective Actions Recommended/Completed (Date)

NA

Site Photographs

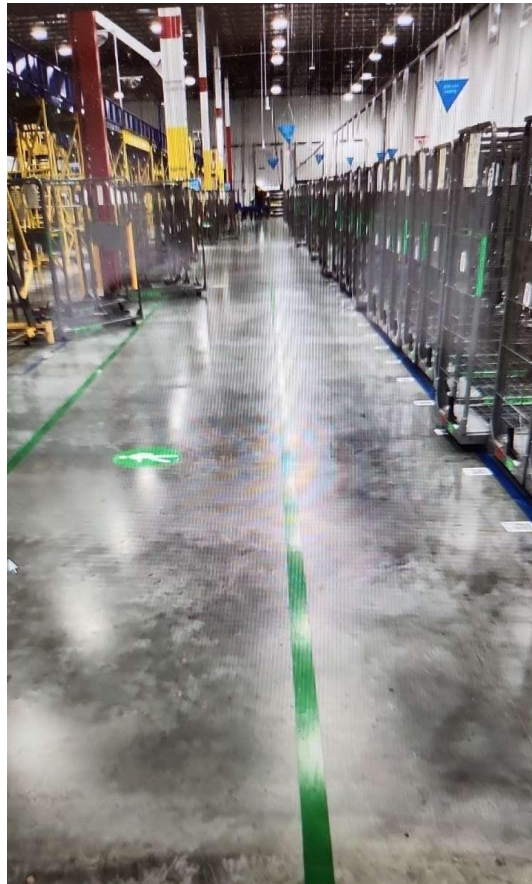


Photo 1 *View Looking East - Inside warehouse*

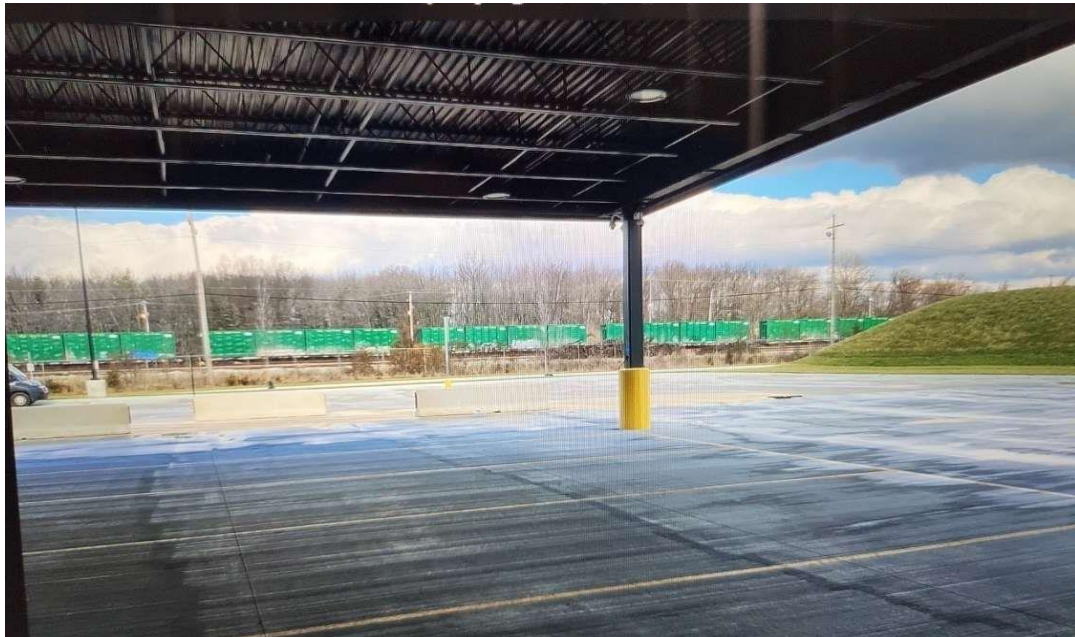


Photo 2 *Cap looking NE of warehouse*

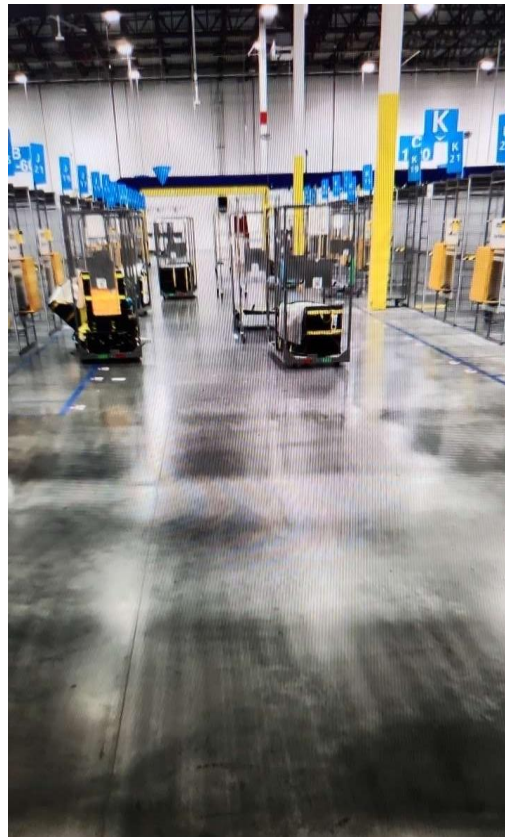


Photo 3 *Inside warehouse - View Looking South*

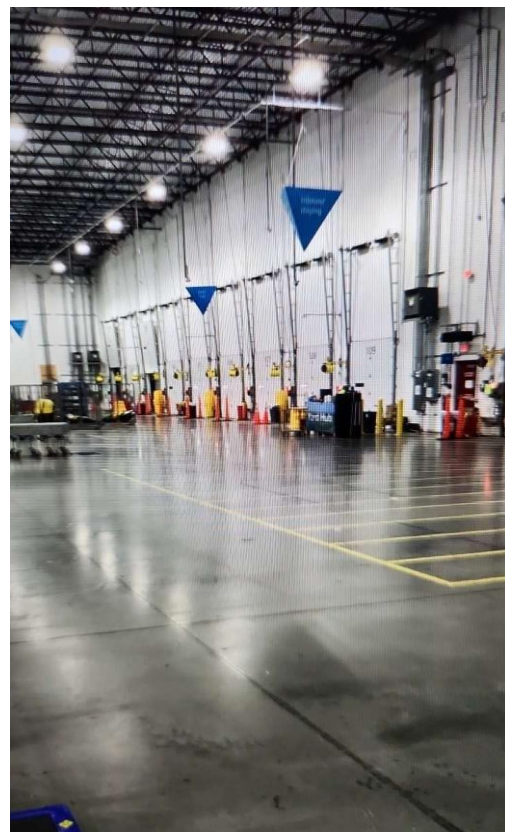


Photo 4 *Looking West - Inside warehouse*



Photo 5 *Outside looking N/NW of warehouse*

Note: crack visible in Photo 6, appeared to have been filled/sealed.



Photo 6 *View Looking East - SE edge of cap*

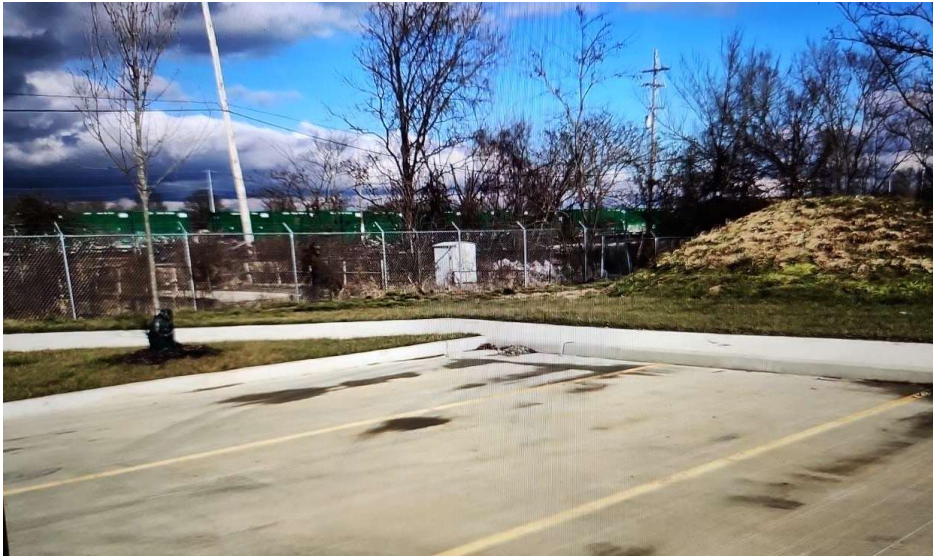


Photo 7 *NE edge of cap*



Photo 8 *Cap concrete showing filled small wear areas that have been filled*



Photo 9 **View Looking East - NE section of cap**



Photo 10 **View Looking South – Cap/vehicle parking area**

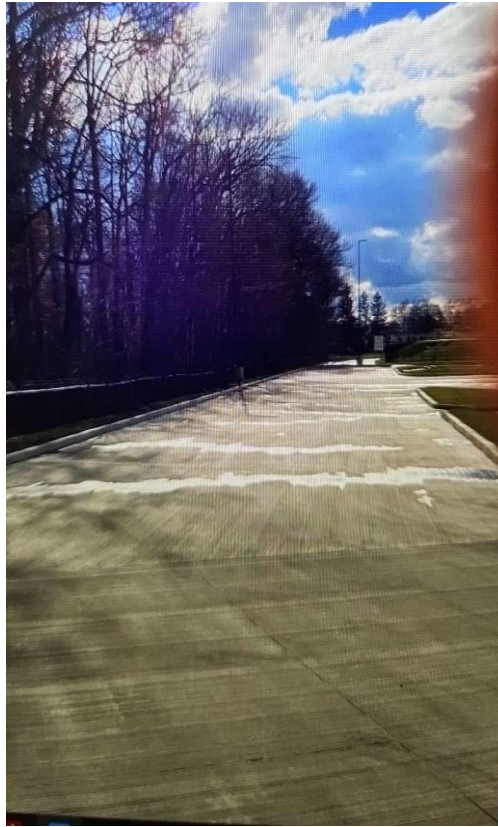


Photo 11 *View Looking South - Cap/vehicle parking area*



Photo 12 *View Looking West – Cap vehicle parking and road*

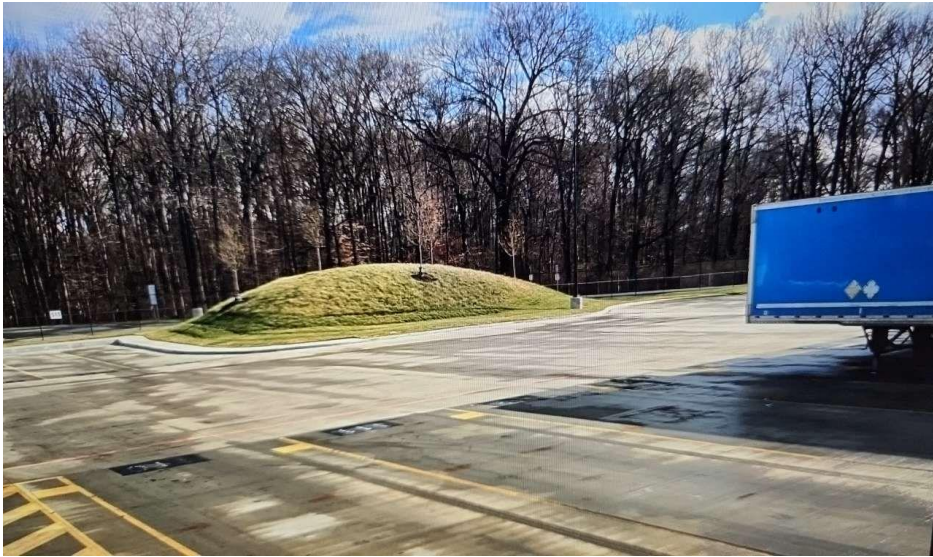


Photo 13 **View Looking East - Cap trailer parking**



Photo 14 **View Looking East - Cap trailer parking**

