2021 Annual Periodic Review Report

Hyde Park Landfill
Niagara Falls, New York
NYSDEC Site No. 932021

Glenn Springs Holdings, Inc.

2 May 2022

→ The Power of Commitment

Executive summary

The following report describes the Operation, Maintenance, and Monitoring (OM&M) activities for 2021 at the Hyde Park Landfill Site (Site) located at 4825 Hyde Park Boulevard, Niagara Falls, Town of Niagara, Niagara County, New York. The Site is approximately 30 acres in size and is comprised of two parcels owned by Occidental Chemical Corporation (OCC) and one parcel owned by National Grid (formerly Niagara Mohawk Power Corporation). These parcels contain the landfill (28.1 acres) and the treatment system and associated buildings (1.9 acres). OCC owns another 30 parcels that are located to the west and north of the Site that encompass a total area of approximately 29 acres. These parcels were purchased to act as a buffer to the Site or to facilitate remediation. Management of the Site is performed on behalf of OCC by Glenn Springs Holdings, Inc. (GSH), an affiliate of OCC. Since October 1, 2008, GHD, formerly Conestoga-Rovers & Associates (CRA), has performed OM&M and reporting activities for the Site under contract to and direct management of GSH.

The treatment system at the Site was down from April 26, 2021 through December 14, 2021 for a piping replacement project and aqueous phase liquid (APL) storage tank cleaning. The treatment system became operational again on December 15, 2021. The Overburden Requisite Remedial Technology (RRT) System wet wells and the Bedrock RRT System purge wells were brought online in phases starting on December 15, 2021. All wells are anticipated to be back online in the first quarter of 2022.

During 2021, the remedial system components at the Site performed as designed when operational. The Source Control (SC), Overburden RRT, and Bedrock RRT Systems removed 9.3 million gallons of groundwater from the Site and surrounding formations during the time period in which the remedial systems were in operation. The RRT systems continued to provide containment. Although complete containment in Flow Zone 9 was not achieved during portions of the reporting period due to system downtime, there was no evidence of chemical migration to the Gorge during 2021. All APL analytes were below reporting levels in APL Flux Monitoring, indicating no chemical loading to the Gorge seeps. Non-aqueous phase liquid (NAPL) continues to be contained by the Overburden RRT System, with no NAPL being found in overburden monitoring wells (OMWs) outside of the system. The community continues to be protected by the Site remedial systems. In 2021, 51,760 pounds of NAPL were shipped off Site for disposal.

The 2021 data indicate that there has been no significant change in chemical and hydrogeological conditions at the Site.

Contents

Table index

Figure index

Appendix Index

1. Introduction

The following Periodic Review Report (PRR) describes the Operation, Maintenance, and Monitoring (OM&M) activities for 2021 at the Hyde Park Landfill Site (Site) located at 4825 Hyde Park Boulevard, Niagara Falls, Town of Niagara, Niagara County, New York (Figure 1.1). Management of the Site is performed on behalf of Occidental Chemical Corporation (OCC) by Glenn Springs Holdings, Inc. (GSH), an affiliate of OCC. Since October 1, 2008, GHD, formerly Conestoga-Rovers & Associates (CRA), has performed OM&M and reporting activities for the Site under contract to and direct management of GSH.

1.1 Site Location

The Site is located in the northwest corner of the Town of Niagara, New York, adjacent to the Town of Lewiston to the north and the City of Niagara Falls to the west. The location of the Site is shown on Figure 1.1. The Site is bounded by Hyde Park Boulevard to the west, the Power Authority Service Road (a New York Power Authority [NYPA] access road) to the north, Ferro Electronic Materials, Inc. (formerly TAM Ceramics) to the south, and vacant property owned by Armand Cerrone, Inc. to the east. The Site is located approximately 2,000 feet east of the Niagara River Gorge (Gorge).

The Site is approximately 30 acres in size and is comprised of two parcels owned by OCC and one parcel owned by National Grid (formerly Niagara Mohawk Power Corporation). These parcels contain the landfill (28.1 acres) and the treatment system and associated buildings (1.9 acres). OCC owns another 30 parcels that are located to the west and north of the Site that encompass a total area of approximately 29 acres. These parcels were purchased to act as a buffer to the Site or to facilitate remediation.

1.2 Site History

The Site is a closed disposal facility where Hooker Chemical placed liquid, sludge, and solid production waste from 1953 until 1975 when the landfill was closed. In 1978, OCC capped the landfill with clay. In 1981, OCC, the State of New York representing the New York State Department of Environmental Conservation (NYSDEC), and the United States of America representing the United States Environmental Protection Agency (USEPA) entered into a "Stipulation and Judgment Approving Settlement Agreement" (Settlement Agreement). Investigations as part of the approved Settlement Agreement indicated significant chemical migration into the bedrock, including the presence of non-aqueous phase liquid (NAPL). The USEPA added the Site to the National Priorities List in September 1983. Further negotiations among OCC, NYSDEC, and USEPA resulted in a second court agreement; the "Stipulation on Requisite Remedial Technology Program" (November 1985) (RRT Stipulation). In August 2010, OCC issued a "Declaration of Restrictive Covenants and Environmental Easement" (Environmental Easement) granting an easement on the portion of the Site owned by OCC to the Town of Niagara, guaranteeing that the institutional and engineering components of the Remedial Action (RA) will be maintained and transferred with ownership of the property.

In July 2011, NYSDEC reclassified the Site on the Registry of Inactive Hazardous Waste Disposal Sites to a Class 4 site, indicating that it no longer presents a significant threat to public health and/or the environment. Effective October 23, 2013, USEPA deleted the Site from the National Priorities List. As published in the Federal Register, Vol. 78, No. 205, Pg. 63099, "The EPA and the State of New York, through the Department of Environmental Conservation, have determined that all appropriate response actions under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) other than operation, maintenance, and 5-year reviews, have been completed".

1.3 Remedial Goals

The original monitoring and remedial performance requirements for the Site were defined in the 1985 RRT Stipulation. Extensive remediation, investigation, and evaluation of the Site have been completed and documented in previous reports to the NYSDEC and USEPA since the RRT Stipulation was approved. The current monitoring and reporting requirements are detailed in the NYSDEC and USEPA-approved 2006 Performance Monitoring Plan (PMP). A checklist of all tasks required by the PMP and subsequent NYSDEC-approved changes in monitoring requirements is provided in Table 1.1. Action levels specified in the PMP are shown in the applicable analytical data tables.

1.4 Remedial Components and Monitoring

Site remedial components consist of the following:

– Source Control (SC) System, shown on Figure 1.2
  - Six SC wells installed within the landfill; only five are currently active
– Overburden RRT System, shown on Figure 1.3
  - Existing barrier collection system (EBCS) surrounding the original landfill
  - Overburden barrier collection system (OBCS) outside and to the north, west, and south of the original landfill
– Bedrock RRT System, shown on Figure 1.4
  - NAPL containment system (16 purge wells)
  - Aqueous Phase Liquids (APL) plume containment system (two purge wells)

All groundwater collected by these components is treated in an on-Site granular activated carbon treatment system before discharge to the publicly owned treatment works (POTW) under Niagara Falls Water Board Significant Industrial User (SIU) Permit #49. NAPL decanted from the groundwater is stored on Site until a sufficient quantity is available for transport to an approved hazardous waste disposal facility.

The treatment system at the Site was down from April 26, 2021 through December 14, 2021 for a piping replacement project and aqueous phase liquid (APL) storage tank cleaning. The treatment system became operational again on December 15, 2021. The Overburden RRT System wet wells and the Bedrock RRT System purge wells were brought online in phases starting on December 15, 2021. All wells are anticipated to be back online in the first quarter of 2022.

The PMP requires annual evaluation of the effectiveness of these components using the following three monitoring programs:

– Overburden Monitoring Program (OMP), locations shown on Figure 1.5
– Bedrock Monitoring Program (BMP), locations shown on Figure 1.6
– Community Monitoring Program (CMP), locations shown on Figure 1.7

2. Institutional and Engineering Controls

The required Institutional and Engineering Controls are listed in the completed Institutional and Engineering Controls Certification Form included as Appendix A. Institutional controls include restrictions on uses of Site land, buildings, groundwater, and surface water, and require the implementation of both a Monitoring Plan and an Operation and Maintenance (O&M) Plan. The most recent versions of these documents are the NYSDEC and USEPA approved 2006 PMP and the 2019 Operation and Maintenance Manual (O&M Manual). Engineering controls include groundwater containment through a leachate collection system, collected groundwater treated on Site, a maintained cover system on the landfill, and restricted Site access controlled through perimeter fencing.

3. Site Monitoring Programs and Results

3.1 Overburden Monitoring Program

The OMP involves the monitoring of the SC wells and the Overburden RRT System. The SC wells are a series of production wells installed within the landfill to recover NAPL, while the Overburden RRT System is comprised of two collection systems designed to control the lateral migration of APL and NAPL in the overburden.

The 2021 performance monitoring data for the overburden systems are presented as follows:

SC System Well Locations	Figure 1.2
2021 SC Well Pumping Summary	Table 3.1
Overburden RRT System	Figure 1.3
2021 Overburden Quarterly Groundwater Elevation Summary	Table 3.2
2021 Overburden NAPL Presence Monitoring	Table 3.3
2021 Overburden Collection Systems Monthly Average Flow Summary	Table 3.4

3.2 Bedrock Monitoring Program

The BMP includes the Lockport Bedrock APL and NAPL Plume Containment Systems and the Bloody Run Creek Monitoring Program. The Lockport Bedrock APL and NAPL Plume Containment Systems consist of 18 purge wells that control lateral migration of dissolved phase constituents and NAPL in the bedrock, while the Bloody Run Creek Monitoring Program ensures that Site-related parameters are not adversely impacting groundwater in the upper bedrock subsequent to the remediation of Bloody Run Creek.

The Group B Bedrock Piezometers are sampled on a quarterly basis. As indicated in Section 1.4, the treatment system at the Site was down from April 26, 2021 through December 14, 2021 for a piping replacement project and APL storage tank cleaning. As discussed in the Third Quarter 2021 Quarterly Operations Report, cleaning the APL storage tanks involved removal of some NAPL that had accumulated over time in the two upfront APL storage tanks. Delay in completing the project had been partially caused by the lack of capacity at incinerators to approve and accept bulk NAPL. As such, the third quarter Group B sampling event was not completed during the third quarter 2021, as the resulting groundwater quality data may not have been meaningful for long-term monitoring purposes if it reflected conditions associated with the temporary shutdown of the treatment system. When it became apparent that the treatment system would continue to be temporarily out of operation into the fourth quarter 2021, the third quarter 2021 Group B sampling event was conducted in October 2021.

As of the date of the Third Quarter 2021 Quarterly Operations Report, it was anticipated that the project would be completed in November 2021. The project was completed on December 14, 2021. For the same reason that the third quarter 2021 Group B sampling event was delayed, the fourth quarter 2021 Group B sampling event did not start until on December 10, 2021. Due to delays associated with the holidays and Covid-19 infections among staff, this sampling event was not completed until January 2022.

Piezometers associated with the Lockport Bedrock APL and NAPL Plume Containment Systems are sampled on a routine basis in two groups. The Group A Bedrock Piezometers are sampled every fifth quarter. For 2021, the Group A sampling event was scheduled to be completed in the third quarter of 2021. For the same reason discussed above that the third quarter 2021 Group B sampling event was delayed, the Group A sampling event for 2021 began in the fourth quarter of 2021 and was completed in the first quarter of 2022, coincident with the fourth quarter 2021 Group B sampling event.

The Bloody Run monitoring wells are sampled every 5 years, which occurred in October 2021, with the next event planned for 2026.

The 2021 performance monitoring data for the bedrock systems are presented as follows:

BMP Locations	Figure 1.6
2021 Bedrock Quarterly Groundwater Elevation Summary - Piezometers	Table 3.5
2021 Bedrock Purge Well Monthly Flow Rate Summary	Table 3.6
Analytical Results Summary: Quarterly Group B Bedrock Piezometer Sampling	Tables 3.7a-d
Analytical Results Summary: Fifth Quarter Group A Bedrock Piezometer Sampling, Fourth Quarter 2021 – First Quarter 2022	Table 3.8
2021 Analytical Results Summary: Annual Bedrock Open Catch Basin	Table 3.9
Bloody Run Monitoring Well Locations	Figure 3.1
Analytical Results Summary: 5-Year Bloody Run Monitoring Well Sampling – October 2021	Table 3.10

The PMP also specifies water level setpoints for each of the purge wells in the Bedrock RRT System. Only major issues associated with achieving these setpoints are discussed in this PRR, while the day-to-day maintenance of these setpoints was previously presented in the 2021 Quarterly Operations Reports. As indicated in the Second Quarter 2021 Quarterly Operations Report, the water levels in all purge wells were out of setpoint range by June 1, 2021 resulting from the treatment system shutdown. Water levels were out of setpoint range throughout the duration of the treatment system shutdown. The purge wells began to be brought back online in phases on December 15, 2021. As discussed in the Fourth Quarter 2021 Quarterly Operations Report, water levels in some of the purge wells remained out of setpoint range through the end of the fourth quarter 2021.

In addition to maintaining water levels within target setpoint ranges in the purge wells, the water level in flow zone FZ-09 in the area between the landfill and the APL purge wells (APW-1 and APW-2) is to be maintained at an elevation of 526 feet above mean sea level (AMSL) or lower. This level ensures that the FZ-09 outcrop along the NYPA access road remains unsaturated. Piezometer PMW-1M-09 is used to monitor the FZ-09 water level elevation in this area. A pressure transducer installed in PMW-1M-09 has been programmed to collect water level data at 1-hour intervals. These continuous water level elevation data were reported in the 2021 Quarterly Operation Reports.

As indicated in the Second Quarter 2021 Quarterly Operations Report, the water level in piezometer PMW-1M-09 began rising following shutdown of the pumping system on April 26, 2021 and exceeded 526 feet AMSL starting on May 12, 2021. The water level in this piezometer exceeded 526 feet AMSL from May 12, 2021 through at least December 2, 2021, at which point the pressure transducer malfunctioned. It is possible that the water level in this piezometer exceeded 526 feet AMSL throughout the fourth quarter 2021 as a result of the pumping system not being in operation until December 15, 2021. The transducer will be replaced in early 2022.

The RRT systems continued to provide containment. Although complete containment in Flow Zone 9 was not achieved during portions of the reporting period due to system downtime, there was no evidence of chemical migration to the Gorge during 2021.

3.3 Community Monitoring Program

The CMP was developed to ensure that the public is not being adversely exposed to Site-related parameters. The CMP includes the Gorge Face Seep Program, the APL Flux Monitoring Program, and the Residential CMP. The Gorge Face Seep Program involves biennial inspections of the Gorge to ensure that Site-specific parameters are not discharging to a publicly accessible area. The APL Flux Monitoring Program involves annual sampling and ensures that the mass loading via groundwater discharged to the Gorge is less than the defined Flux Action Level. The Residential CMP involves annual vapor monitoring and ensures that residents in the area are not adversely exposed to Site-related constituents in the groundwater or from soil vapors above the groundwater.

The 2021 performance monitoring data for the community monitoring are presented as follows:

APL Flux Well Locations	Figure 3.2
2021 Analytical Results Summary: Annual AFW Composite	Table 3.11
Community Monitoring Locations	Figure 1.7
2021 Quarterly Hydraulic Gradient Summary	Table 3.12
2021 Community Monitoring Well Soil Vapor Monitoring	Table 3.13
2021 Gorge Seep Survey	Appendix D

The 2021 annual AFW composite sample was collected on March 18, 2022. This sample is typically collected in the fall, but purge wells APW-1 and APW-2 were out of operation during the treatment system shutdown, and APW-1 was further out of operation in early 2022 as it awaited replacement of the pump and motor.

4. Site Operation and Maintenance

Maintaining the Site remedial elements is critical to the Site's remedial performance. Therefore, inspections of hydraulic and chemical monitoring points, the landfill cap, and the security fence surrounding the landfill have been included in the PMP and O&M Manual. Although not required by the PMP, the monitoring program for the Site groundwater treatment system is discussed briefly in this report. Full details on Site O&M activities are presented in the 2019 O&M Manual.

Analytical results from the treatment system monitoring program have been presented previously in the 2021 Quarterly Operations Reports. These include the following:

– Daily treated effluent total water flows and pH
– Weekly treated effluent APL sampling
– Quarterly treated effluent APL sampling

The following treatment system monitoring was also conducted in 2021:

Quarterly NAPL Decanter Volume Monitoring	Table 4.1
Weekly Carbon Interstage APL Sampling	Table 4.2
Quarterly Leachate Feed APL Sampling	Table 4.3
Quarterly Sac Bed Interstage APL Sampling	Table 4.4

As the treatment system was down from April 26, 2021 through December 14, 2021 for a piping replacement project and APL storage tank cleaning (refer to Section 1.4), weekly carbon interstage APL sampling was only performed from January through April 2021 and on September 16, October 6, and December 22 and 31, 2021. Similarly, quarterly leachate feed APL sampling was not performed during the second and third quarters of 2021, and quarterly sac bed interstage sampling was not performed during the second, third, or fourth quarters of 2021.

The 2006 PMP also requires weekly fence inspections, annual well and piezometer inspections, and annual landfill cap inspections. All of the required inspections were performed in 2021. The inspections did not identify any issues of concern beyond routine maintenance items. Records of these inspections are maintained at the Site and are available upon request, in accordance with the 2006 PMP.

5. Evaluation and Conclusions

5.1 Overburden Monitoring Program

There were no deviations from the OMP in 2021, and monitoring was conducted in accordance with the 2006 PMP. The results of the OMP are discussed below and summarized in Tables 3.1 through 3.4.

5.1.1 Source Control System

The SC wells (SC-2 to SC-6) were historically operated on a monthly basis to pump down the APL/NAPL level to approximately the top of the pump in each well. The 2014 Annual Periodic Review Report recommended that monthly purging of the SC wells and subsequent water level and NAPL thickness measurements be discontinued; however, in order to provide additional data to support discontinuation, it also recommended that the frequency be changed to quarterly for 1 year. After 1 year, the original recommendation to discontinue would be reevaluated. NYSDEC approved the quarterly frequency of SC water level and NAPL thickness measurements in a letter dated May 5, 2015; however, GSH maintained monthly water level and NAPL thickness measurements throughout 2015. Starting in 2016, the SC water levels and NAPL thickness were measured quarterly.

In an effort to further demonstrate that the SC wells do not produce significant amounts of NAPL, monthly manual NAPL removal from SC-6 was implemented in April 2015. The NAPL thickness in SC-6 prior to removal in April 2015 was approximately 10 feet. Approximately 18 gallons of NAPL were removed. In subsequent months, the volume of NAPL removed decreased from 8 gallons in May to 3 gallons in October 2015 when manual removal of NAPL ceased due to cold temperatures. Based on the declining amount of NAPL removed, the frequency was revised to quarterly.

Based on the results of manual NAPL removal from SC-6, quarterly manual NAPL removal was implemented at SC-2, SC-3, SC-4, and SC-5 in October 2016. The volume of NAPL recovered from these wells was 5.5 gallons, 33.25 gallons, 15.25 gallons, and 1.5 gallons, respectively. Based on the volumes of NAPL recovered, it was recommended in the 2016 PRR that quarterly manual NAPL removal from the SC wells continue in 2017 except at SC-3 where removal would be performed on an approximate monthly basis. This change was implemented in 2017.

Based on the low amounts of NAPL recovered each year from SC-5 and SC-6 since 2016, the 2019 PPR recommended that the frequency of manual NAPL recovery at these two wells be changed to semiannual. This recommendation was approved by the NYSDEC in its 2019 PRR acceptance letter dated July 29, 2020. Manual NAPL removal will continue on an approximate monthly basis at SC-3 and on a quarterly basis at SC-2 and SC-4. The first semiannual manual NAPL removal event at SC-5 and SC-6 was completed in October 2020.

The 2021 SC well NAPL thickness and recovery data are summarized in Table 3.1. The amounts of NAPL recovered in 2021 from SC-2, SC-3, SC-4, SC-5, and SC-6 were 0 gallons, 110.3 gallons, 31.0 gallons, 0 gallons, and 0 gallons, respectively.

Manual NAPL recovery will continue to be performed on an approximate monthly basis at SC-3, quarterly basis at SC-2 and SC-4, and semiannual basis at SC-5 and SC-6 in 2022.

The total amount of NAPL recovered in 2021 was 141.3 gallons. The APL/NAPL volumes removed from the SC wells from 2006 through 2021 are as follows:

Year	Gallons Purged from SC Wells
2006	799
2007	287
2008	236
2009	173
2010	155

Year	Gallons Purged from SC Wells
2011	262
2012	339
2013	316
2014	265
2015	120
2016	65.5
2017	531.1
2018	430.3
2019	208.6
2020	194.8
2021	141.3

5.1.2 Overburden Groundwater Elevations

The overburden groundwater elevation data provided in Table 3.2 were used to generate potentiometric surface maps that were presented in the 2021 Quarterly Operations Reports. These potentiometric surface maps indicated hydraulic containment for each quarter of 2021.

5.1.3 Overburden NAPL Presence Monitoring

NAPL presence checks are to be completed annually in the OBCS, Overburden Monitoring Wells (OMWs), and the OBCS manholes. The NAPL presence monitoring data from the OMWs and manholes are presented in Table 3.3. The data indicate that NAPL was present in 3 of the 17 manholes monitored (MH-29, MH-30, and MH-31) and in 1 of the 2 wet wells (Wet Well D). These three manholes are located at the southwest corner of the landfill and all flow to Wet Well D. The data also indicate that NAPL is not present in any of the OMWs. These wells are located outside of the OBCS to the south, west, and northwest of the three manholes and one wet well where NAPL was present (see Figure 1.3). The lack of NAPL presence in these OMWs indicates that overburden NAPL is contained within the boundaries of the OBCS and is not bypassing the OBCS.

5.1.4 Overburden RRT System Flow Rates

The OBCS and EBCS monthly average flow rates are presented in Table 3.4. As indicated in Section 1.4, the treatment system was down from April 26, 2021 through December 14, 2021 for a piping replacement project and APL storage tank cleaning. As such, there was no flow in the OBCS or EBCS wells from May 2021 through November 2021. Typically, there are seasonal fluctuations in flow rates with the highest average flow rates occurring during the spring months.

5.1.5 Overburden Monitoring Conclusions

Based on the overburden data collected in 2021, as shown in Tables 3.1 through 3.4 and the potentiometric surface maps that were presented in the 2021 Quarterly Operations Reports, the SC and Overburden RRT Systems are operating as designed, and overburden containment is being achieved.

5.2 Bedrock Monitoring Program

There were no deviations from the BMP in 2021, and monitoring was conducted in accordance with the 2006 PMP. The results of the BMP in 2021 are discussed below and summarized in Tables 3.5 through 3.10.

5.2.1 Bedrock Groundwater Elevations

The bedrock flow zone groundwater elevation data, presented in Table 3.5, were used to generate groundwater potentiometric surface maps for each of the monitored flow zones. These maps have been presented previously in the 2021 Quarterly Operations Reports. The potentiometric surface maps for each monitored flow zone during each quarter of 2021 indicated containment.

5.2.2 Bedrock RRT System Flow Rates and Setpoints

The 2021 bedrock purge well monthly average flow rate data is presented in Table 3.6. As indicated in Section 1.4, the treatment system was down from April 26, 2021 through December 14, 2021 for a piping replacement project and APL storage tank cleaning. As such, the flow rates for the bedrock purge wells from May 2021 through November 2021 were zero.

Maintenance of operating water level setpoints by each of the purge wells has been discussed in the 2021 Quarterly Operations Reports. As indicated in the Second Quarter 2021 Quarterly Operations Report, the water levels in all purge wells were out of setpoint range by June 1, 2021 resulting from the treatment system shutdown. Water levels were out of setpoint range throughout the duration of the treatment system shutdown. The purge wells began to be brought back online in phases on December 15, 2021. As discussed in the Fourth Quarter 2021 Quarterly Operations Report, water levels in some of the purge wells remained out of setpoint range through the end of the fourth quarter 2021.

As indicated in the Second Quarter 2021 Quarterly Operations Report, the water level in piezometer PMW-1M-09 began rising following shutdown of the pumping system on April 26, 2021 and exceeded 526 feet AMSL starting on May 12, 2021. The water level in this piezometer exceeded 526 feet AMSL from May 12, 2021 through at least December 2, 2021, at which point the pressure transducer malfunctioned. It is possible that the water level in this piezometer exceeded 526 feet AMSL throughout the fourth quarter 2021 as a result of the pumping system not being in operation until December 15, 2021. The transducer will be replaced in early 2022.

5.2.3 Bedrock Analytical Results

In accordance with the 2006 PMP, quarterly groundwater samples were collected from the Group B Bedrock piezometers in 2021. The quarterly groundwater sampling events were performed during February 2021, May 2021, October 2021, and December 2021 and January 2022. The annual fifth quarter Group A Bedrock piezometer sampling event, as defined in the PMP, was performed during December 2021 and January 2022. Refer to Section 3.2 for information regarding the scheduling of these sampling events in 2021.

The 2021 quarterly Group B Bedrock piezometer sampling results are presented in Tables 3.7a through 3.7d. Samples were analyzed for the Site-specific list of organic acids. Site-specific screening levels (SLs) presented in the PMP have been included in these tables and exceedances of these values have been highlighted.

The 5th quarter sampling results for the Group A Bedrock piezometers are presented in Table 3.8. Analyses include volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), organic acids, and sulfate. The SLs presented in the PMP have been added to this table and exceedances of these values have been highlighted.

The 2021 data for the quarterly Group B Bedrock piezometer and the 5th quarter Group A Bedrock piezometer sampling events indicate that samples from a number of locations exhibited concentrations of Site Organic Indicators (SOIs) that exceeded the SLs, as summarized below:

Site Organic Indicators	Location Exceeding Site-Specific Screening Level
Chlorendic Acid	ABP-7-09, AGW-1M-09, AGW-1U-06, B2L-11, D1M-09, D1U-05, D2M-09, D2U-05, F2U-02, F2U-04, G6-04, G6-05, H2U-02, H5-09, I1-07
Trichloroethene (TCE)	G6-01, G6-02, G6-04, G6-05, G6-11, H2M-06
Tetrachloroethene (PCE)	G6-01, G6-02, G6-04, G6-05
Cis-1,2-Dichloroethene (cis-1,2-DCE)	G6-04, G6-05
1,1,2,2-Tetrachloroethane (1,1,2,2-PCA)	G6-01, G6-02, G6-04, G6-05, H2M-06
Bis(2-Ethylhexyl)phthalate	E6-04
Vinyl Chloride	G6-04, G6-05, H2M-06, H5-09
Benzene	B2L-11, D1L-11, E6-09, E6-11, F2L-11, F6-11, G1L-11, G6-04, G6-05, G6-11, H2M-09, H5-09, J6-11
Methylene Chloride	No exceedances

The above exceedances are generally consistent with results from the quarterly Group B piezometer and 5th quarter Group A Bedrock piezometer sampling events conducted in previous years.

In a letter dated July 19, 2018 providing comment on the 2017 PRR for the Site, the NYSDEC indicated that while the primary remedial objective of keeping the flow zones dewatered is being achieved, SOIs continue to exceed SLs in many Group A and Group B bedrock piezometers. The NYSDEC requested that the concentrations of these SOIs (nine parameters per the PMP) be quantified and set to trend to better understand the results of the remedial efforts.

In response to the NYSDEC's request, GSH submitted "Site Organic Indicators Trends Analysis" for the Site, dated July 30, 2019, to the NYSDEC. This letter report presented the results of a two-part analysis of concentrations of organic compounds detected in the Group A and Group B bedrock wells from 2006 through the second quarter of 2019. All of the organic compounds currently included in the Group A and Group B bedrock sampling program were included in the analysis, instead of only the nine SOIs defined for the Site. Based on the analysis conducted, only two organic compounds were identified in wells downgradient of the Site that have been detected at concentrations above the SLs and have exhibited sustained increases in concentration. These organic compounds were benzene in D1L-11 and bis(2-ethylhexyl)phthalate (DEHP) in E6-04. Concentrations of benzene in D1L-11 have been above the SL since 2006, but benzene is naturally occurring in flow zone 11 and as such is not associated with the Site. Concentrations of DEHP have been consistently above the SL since 2015, but have been decreasing since 2016.

NYSDEC provided two comments on the above in a letter dated October 24, 2019. NYSDEC indicated that recent increases in concentrations of the SOIs 1,1,2,2-PCA, benzene, vinyl chloride, TCE, and cis-1,2-DCE, along with the non-SOI compounds chloroform, 1,1,2-trichloroethane (1,1,2-TCA), trans-1,2-DCE, and chlorobenzene have been noted for piezometer G6-05, suggesting that the groundwater plume had further migrated from the Site towards G6-05. Based on this, NYSDEC requested that a groundwater evaluation be completed in the area of G6-05. In addition, the NYSDEC indicated that wells removed from the initial data analysis due to their positions hydraulically upgradient or cross-gradient of the Site needed to be included in the trend analysis.

In response to the above NYSDEC's comments, GSH submitted "Response to Comments on Site Organic Indicators Trend Analysis Report" for the Site, dated January 24, 2020. Regarding the increasing concentrations of the nine above-referenced organic compounds in G6-05, there was no evidence found to suggest that the groundwater plume would be expanding toward this well. The increasing concentrations are related to minor changes in the groundwater flow and the resulting redistribution of contaminant mass, and are not considered evidence of an expanding plume. In addition, groundwater flow in the area of G6-05 has consistently been demonstrated to be towards the Site. GSH recommended continued monitoring and provision of updated graphs of the concentrations of these nine organic compounds detected in G6-05 on an annual basis as an appendix in the PRR. The NYSDEC approved this recommendation in its 2019 PRR acceptance letter dated July 29, 2020. G6-05 is sampled every fifth quarter as part

of the Group A Bedrock piezometer sampling event. Figures B.1 and B.2 in Appendix B provide concentrations of these nine organic compounds detected in G6-05 through the fourth quarter of 2021.

To address NYSDEC's second comment, the original trend analysis was updated to include the hydraulically upgradient or cross-gradient wells. Based on the updated analysis performed, two organic compounds were detected in the bedrock wells that have been detected at concentrations above the SLs and have exhibited sustained increases in concentration as follows:

– Benzene in wells D1L-11, E6-11, J6-11, and G6-04. Benzene in flow zone 11 appears to be naturally occurring due to the presence of natural gas. In addition, benzene concentrations in G6-04 appear to be stabilizing based on the 2016 through 2019 data.
– Vinyl chloride in wells H2M-06 and G6-04. Concentrations of vinyl chloride appear to be stabilizing in H2M-06 and have been relatively low in both H2M-06 and G6-04.

Based on the above, concentrations of benzene and vinyl chloride will continue to be monitored as part of the current Group A bedrock sampling program with no modifications in the current sampling or reporting requirements. The next statistical evaluation of chemistry data generated from groundwater quality monitoring efforts performed at the Site will be conducted in 2022 and will include monitoring results obtained from 2006 through 2021. Any continued increasing trends associated with the identified wells and compounds will be quantified and further evaluated at that time.

The catch basin on the north side of the Greif Brothers' warehouse is sampled annually for NAPL organic acids. The analytical results for 2021 are presented in Table 3.9.

The bedrock groundwater data collected in 2021 demonstrate that the APL and NAPL purge well systems are operating properly and containment is being maintained in each of the flow zones. No changes to the bedrock purge or monitoring systems are recommended at this time.

5.2.4 Bedrock Monitoring Conclusions

The bedrock monitoring data collected in 2021 demonstrate that the APL and NAPL purge well systems are operating properly, and bedrock containment is being achieved in each of the flow zones.

5.2.5 5-Year Bloody Run Monitoring Conclusions

The sampling results from the 5-Year Bloody Run Monitoring Event are presented on Table 3.10. Analysis included VOCs and organic acids. A review of the 2021 Bloody Run sampling event data indicates the following exceedances for VOCs and organic acids:

Parameter	Location Exceeding Site-Specific Screening Level
VOCs	
No exceedances	
Organic acids	
Chlorendic acid	BR-2, BR-3, BR-4

The exceedance of chlorendic acid in BR-2, BR-3, and BR-4 is consistent with the 2016 sampling event where chlorendic acid exceeded the GSH screening levels in BR-2, BR-3, and BR-4. The data validation report is included in Appendix C. The next sampling event is scheduled to be conducted in 2026.

5.3 Community Monitoring Program

5.3.1 APL Flux Monitoring Program

The APL plume flux composite sampling results are presented in Table 3.11. None of the APL plume flux parameters were detected above their respective reporting levels. As a result, calculation of the flux to the Gorge is not required.

5.3.2 Quarterly Hydraulic Gradient Summary

Table 3.12 presents a summary of groundwater elevations and vertical hydraulic gradients at the paired community monitoring wells for each quarter of 2021. Downward vertical hydraulic gradients, as demonstrated by a higher groundwater elevation in the overburden monitoring well than in the corresponding bedrock groundwater monitoring well, were maintained at each of the well pairs throughout the year.

5.3.3 Soil Vapor Monitoring

Results of community monitoring well soil vapor monitoring are presented in Table 3.13. None of the six locations monitored exhibited any recordable concentrations of VOCs during the August 2021 monitoring event. Therefore, in accordance with the field procedure for community well vapor monitoring presented in Appendix B of the 2014 Annual Periodic Review Report, groundwater sampling was not required.

5.3.4 Gorge Face Seep Survey

The biennial Gorge Face Seep Survey was conducted on November 10, 2021 and the results are presented in Appendix D. The NYSDEC was in attendance. No remedial actions were recommended as a result of the survey. Photographs taken during the survey were submitted by email to USEPA under separate cover.

In over 25 years of performing the Seep Survey (annually then biennially), no issues have been identified that required further action. In the 2019 Annual Periodic Review Report for the Site, it was recommended to change the frequency of the Gorge Face Seep Survey to every five years to coincide with the USEPA Five-Year review of the Site. In its 2019 PRR approval letter, NYSDEC indicated that this change was acceptable pending approval from the USEPA.

In a letter dated June 30, 2021, the USEPA requested that in order to confirm that Site conditions had not changed since the last sampling of the Gorge Face Seeps in 2001, Seeps 2, 7d, and 12 be sampled for the APL Plume Definition Parameters set forth in the 2001 PRR. The letter indicated that upon receipt and review of the sampling results, the USEPA would make a determination regarding the proposed reduction in frequency of the Seep Survey. The requested seep sampling was conducted during the November 10, 2021 biennial Gorge Face Seep Survey. However, a sample could not be obtained from Seep 12 as this area was not open to the public at the time of the sampling event. A description of the sampling event and results are included in Appendix D. No parameters, other than organic carbon and total organic halides, were detected at concentrations above the laboratory's method detection limits.

Given the lack of detections in the seep samples, it is recommended that USEPA approve the proposed reduction in frequency of the Seep Survey. If approved, the next Seep Survey would be conducted in the fall of 2025 for inclusion in the Seventh Five-Year Review Report due in 2026.

5.3.5 Community Monitoring Conclusions

The community monitoring data collected in 2021 demonstrate that the community is being properly protected by Site remedial systems.

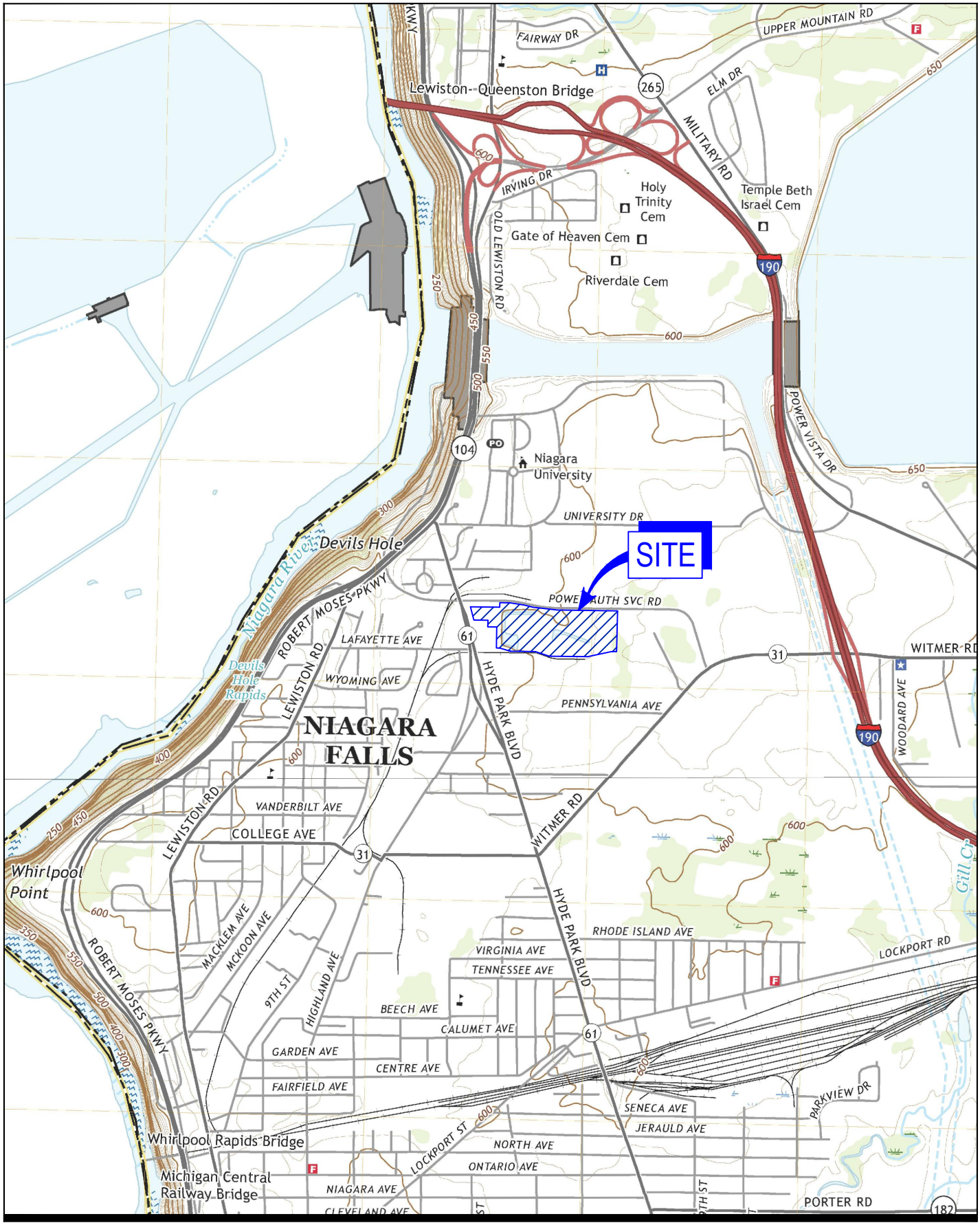
5.4 Site Operations and Maintenance

There were no deviations in 2021 from the treatment system monitoring specified in the 2006 PMP. Ongoing O&M issues are discussed in the 2021 Quarterly Operations Reports.

6. Recommendations

Based on the evaluation of data presented within this PRR, no changes in the OM&M activities for the Site are recommended at this time, except for the following:

– Change the frequency of the Gorge Face Seep Survey to every five years to coincide with the USEPA Five-Year review of the Site as previously proposed. This recommendation is currently being reviewed by USEPA.



0 1000 2000 ft

1" = 2000 ft

N

GHD

GLENN SPRINGS HOLDINGS, INC.
HYDE PARK LANDFILL SITE
NIAGARA FALLS, NEW YORK

Project No. **11230216**
Date **April 2022**

SITE LOCATION

FIGURE 1.1

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\RPT002\11230216-GHD-00-00-RPT-EN-D101_WA-002.DWG
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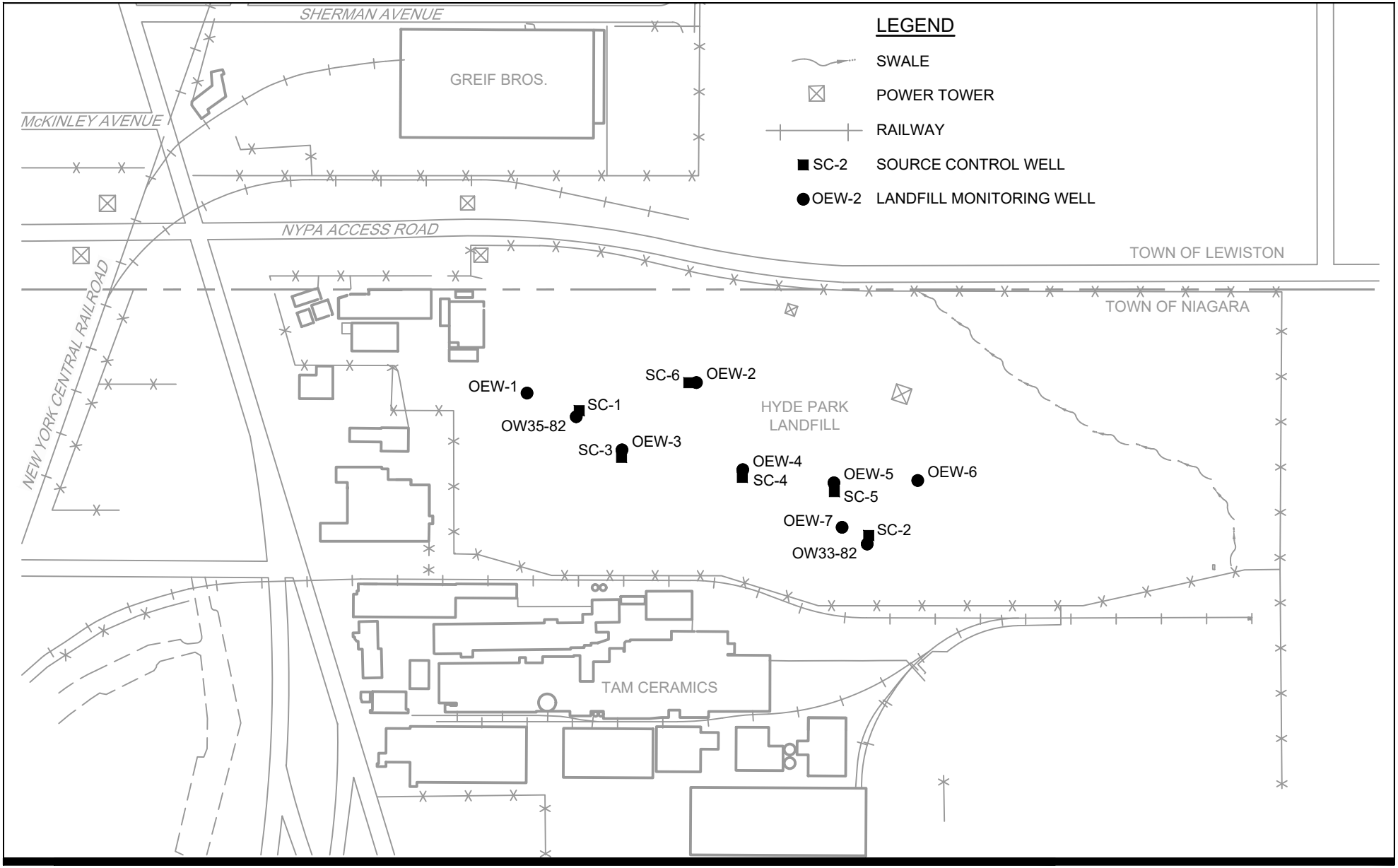
Data Source: USGS QUADRANGLE MAPS; NIAGARA FALLS, NY, ON, 2019, LEWISTON, NY, ON, 2019.



NOTE:
SITE BENCHMARK IS A P.K. NAIL SET IN THE EAST FACE OF A POWER POLE LOCATED AT THE WEST END OF THE EXISTING HYDE PARK LANDFILL, ELEVATION = 612.77. DATUM NOT VERIFIED.

0 150 300 ft
1" = 300 ft

N

GHD

GLENN SPRINGS HOLDINGS, INC.
HYDE PARK LANDFILL SITE
NIAGARA FALLS, NEW YORK

Project No. **11230216**
Date **April 2022**

SOURCE CONTROL SYSTEM WELL LOCATIONS

FIGURE 1.2

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\RPT002\11230216-GHD-00-00-RPT-EN-D102_WA-002.DWG
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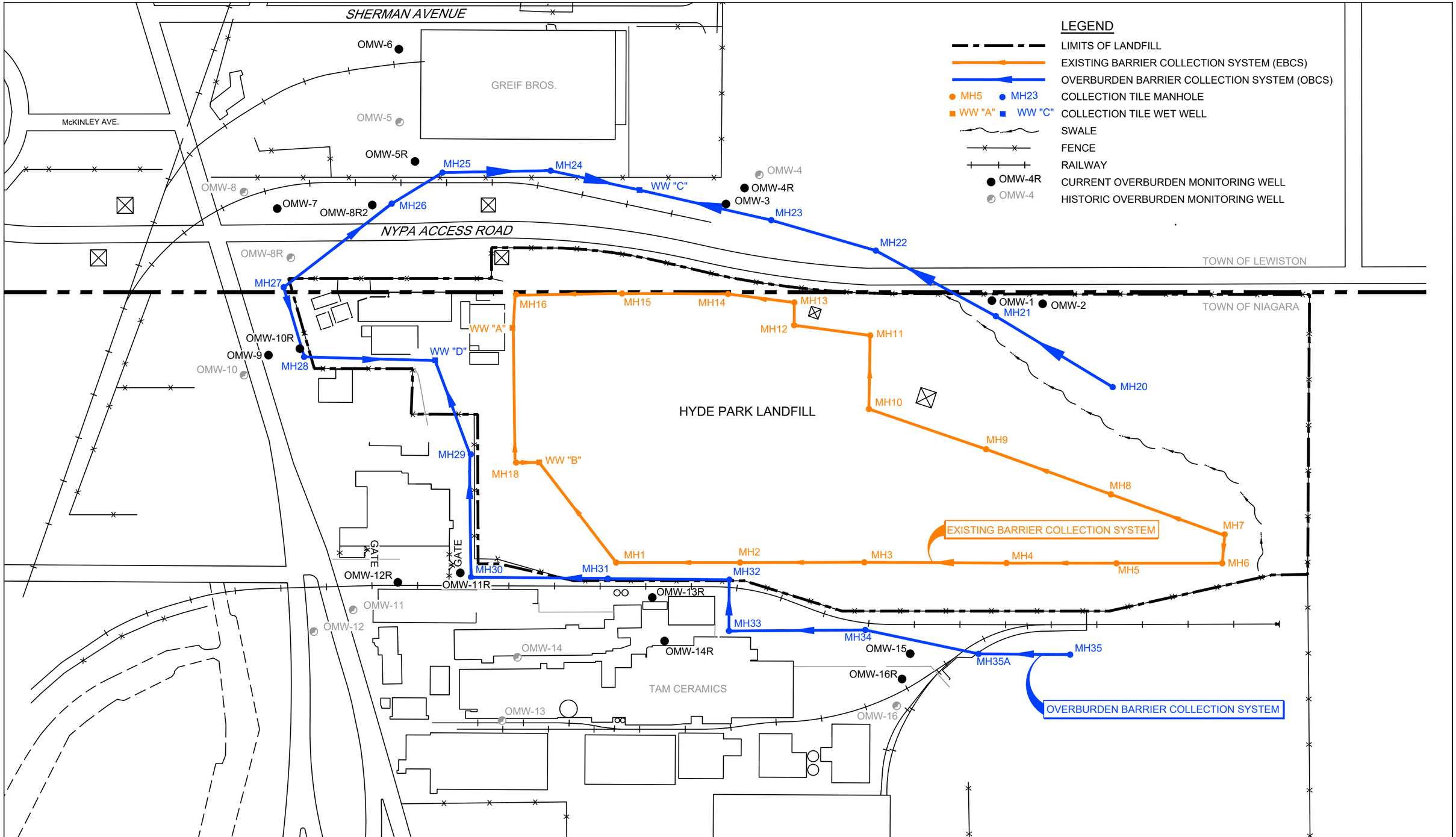

GLENN SPRINGS HOLDINGS, INC.
HYDE PARK LANDFILL SITE
NIAGARA FALLS, NEW YORK

Project No. **11230216**
Date **April 2022**

OVERBURDEN RRT SYSTEM

FIGURE 1.3

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\RPT002\11230216-GHD-00-00-RPT-EN-D103_WA-002.DWG
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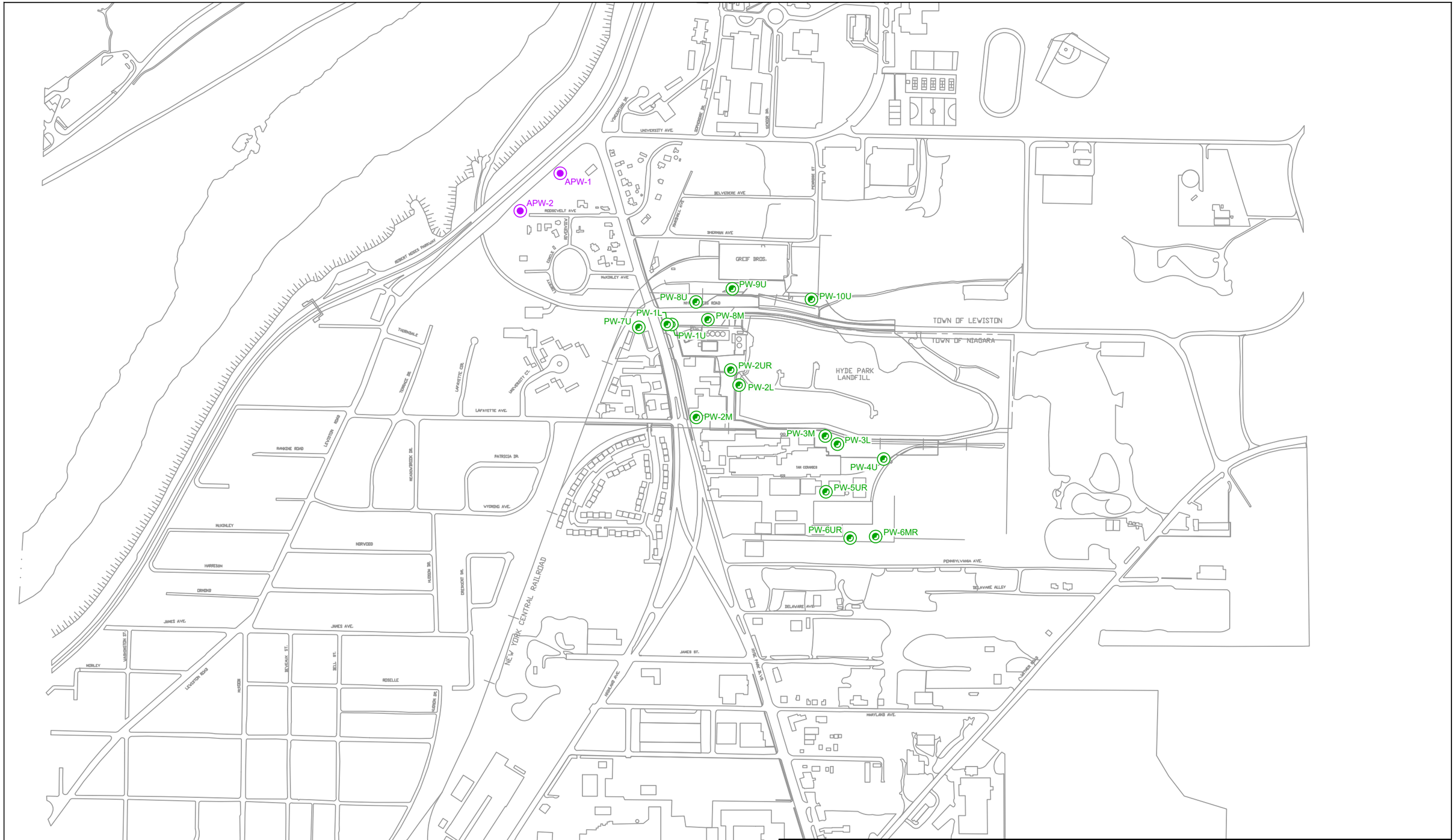

LEGEND

- APW-2 — APL PLUME CONTAINMENT SYSTEM PURGE WELL
- PW — NAPL PLUME CONTAINMENT SYSTEM PURGE WELL

GHD

GLENN SPRINGS HOLDINGS, INC.
HYDE PARK LANDFILL SITE
NIAGARA FALLS, NEW YORK

BEDROCK RRT SYSTEM

Project No. **11230216**
Date **April 2022**

FIGURE 1.4

Filename: \\ghdnetfghd\US\Niagara Falls\Projects\64\11230216\Digital_Design\ACAD\Figures\RPT002\11230216-GHD-00-00-RPT-EN-D104_WA-002.DWG
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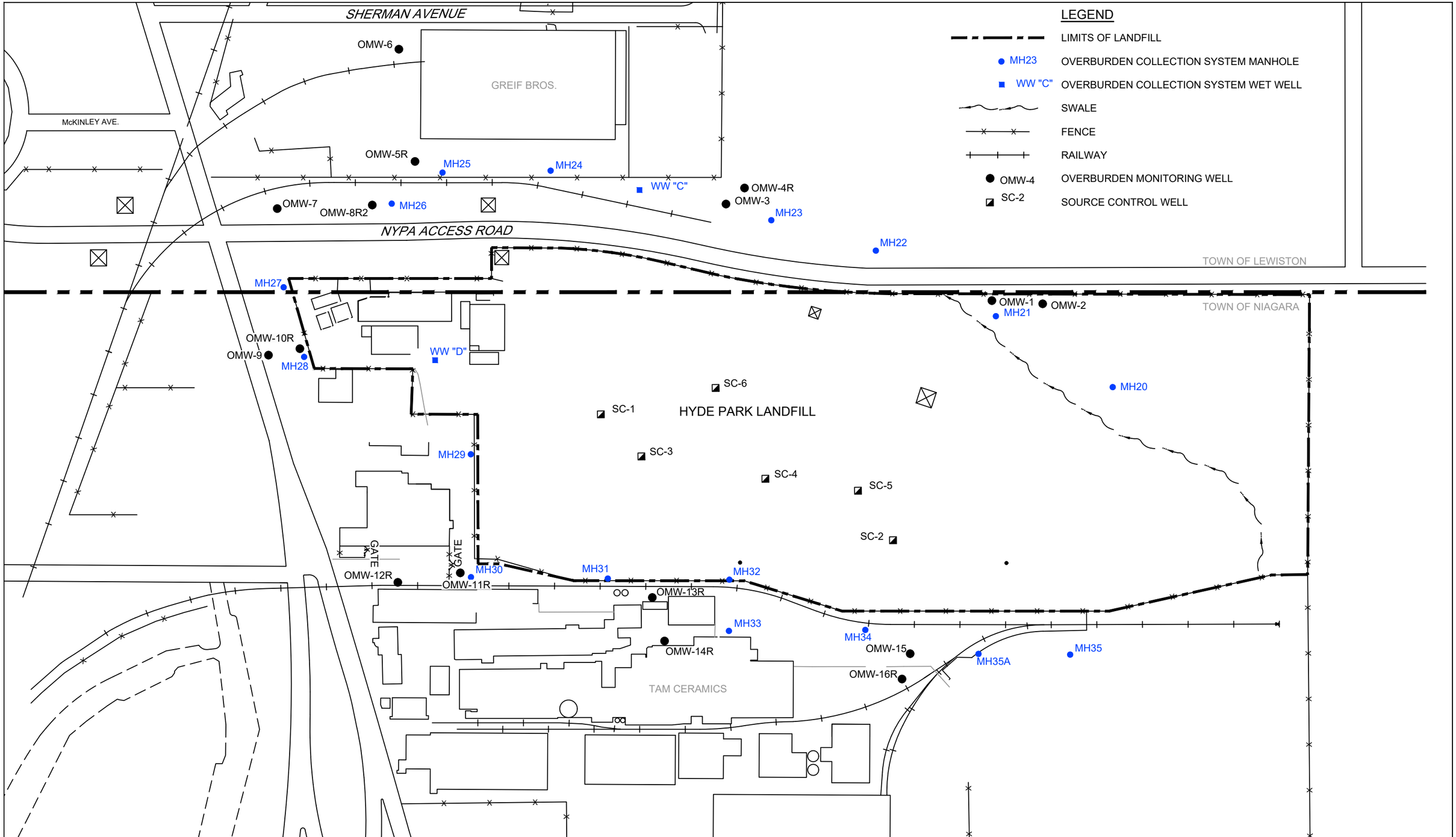

GLENN SPRINGS HOLDINGS, INC.
HYDE PARK LANDFILL SITE
NIAGARA FALLS, NEW YORK

Project No. **11230216**
Date **April 2022**

OVERBURDEN MONITORING PROGRAM

FIGURE 1.5

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\RPT002\11230216-GHD-00-00-RPT-EN-D105_WA-002.DWG
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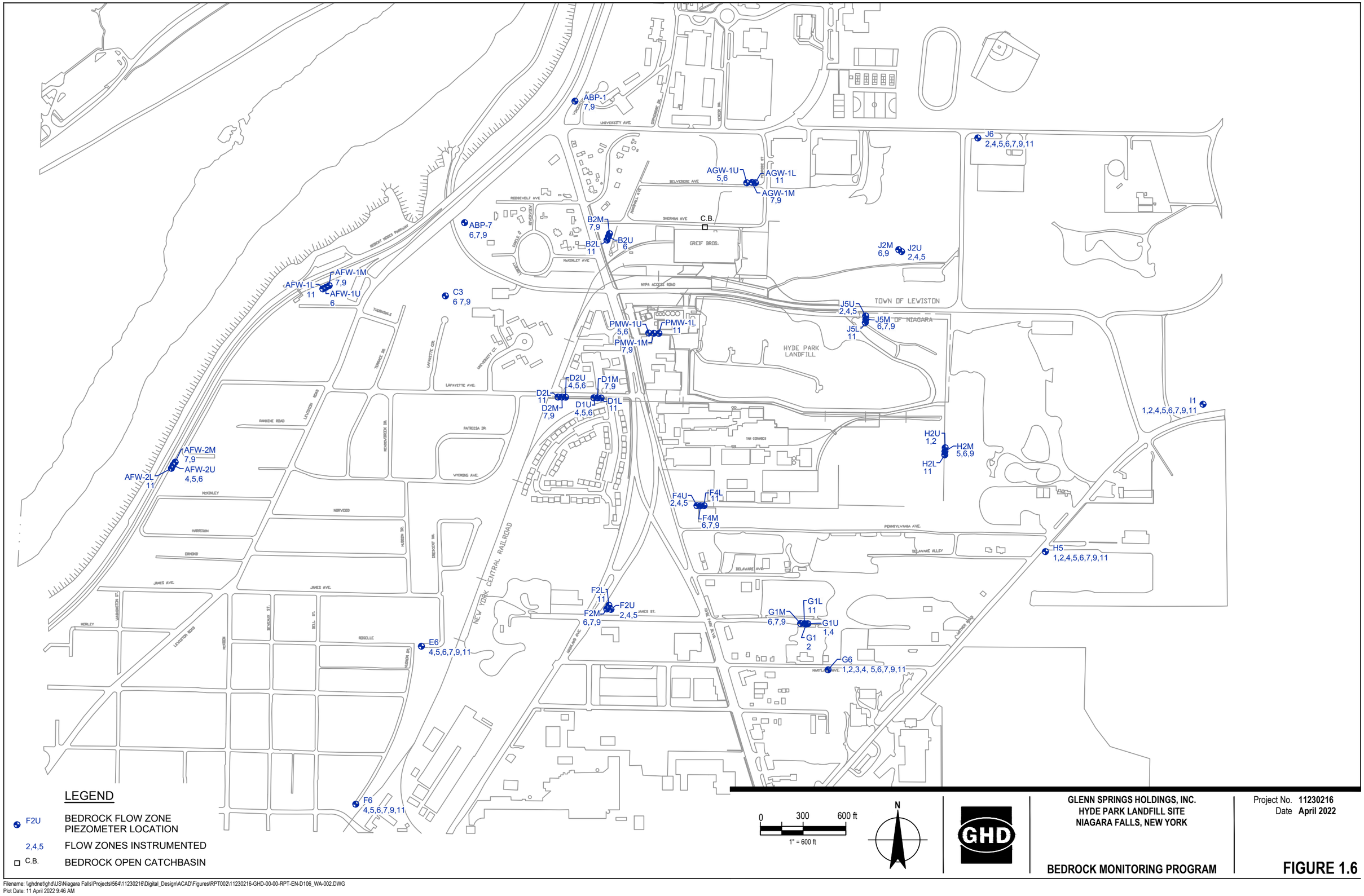

LEGEND

F2U	BEDROCK FLOW ZONE PIEZOMETER LOCATION
2,4,5	FLOW ZONES INSTRUMENTED
C.B.	BEDROCK OPEN CATCHBASIN

GHD

GLENN SPRINGS HOLDINGS, INC.
HYDE PARK LANDFILL SITE
NIAGARA FALLS, NEW YORK

BEDROCK MONITORING PROGRAM

Project No. **11230216**
Date **April 2022**

FIGURE 1.6

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\RPT002\11230216-GHD-00-00-RPT-EN-D106_WA-002.DWG
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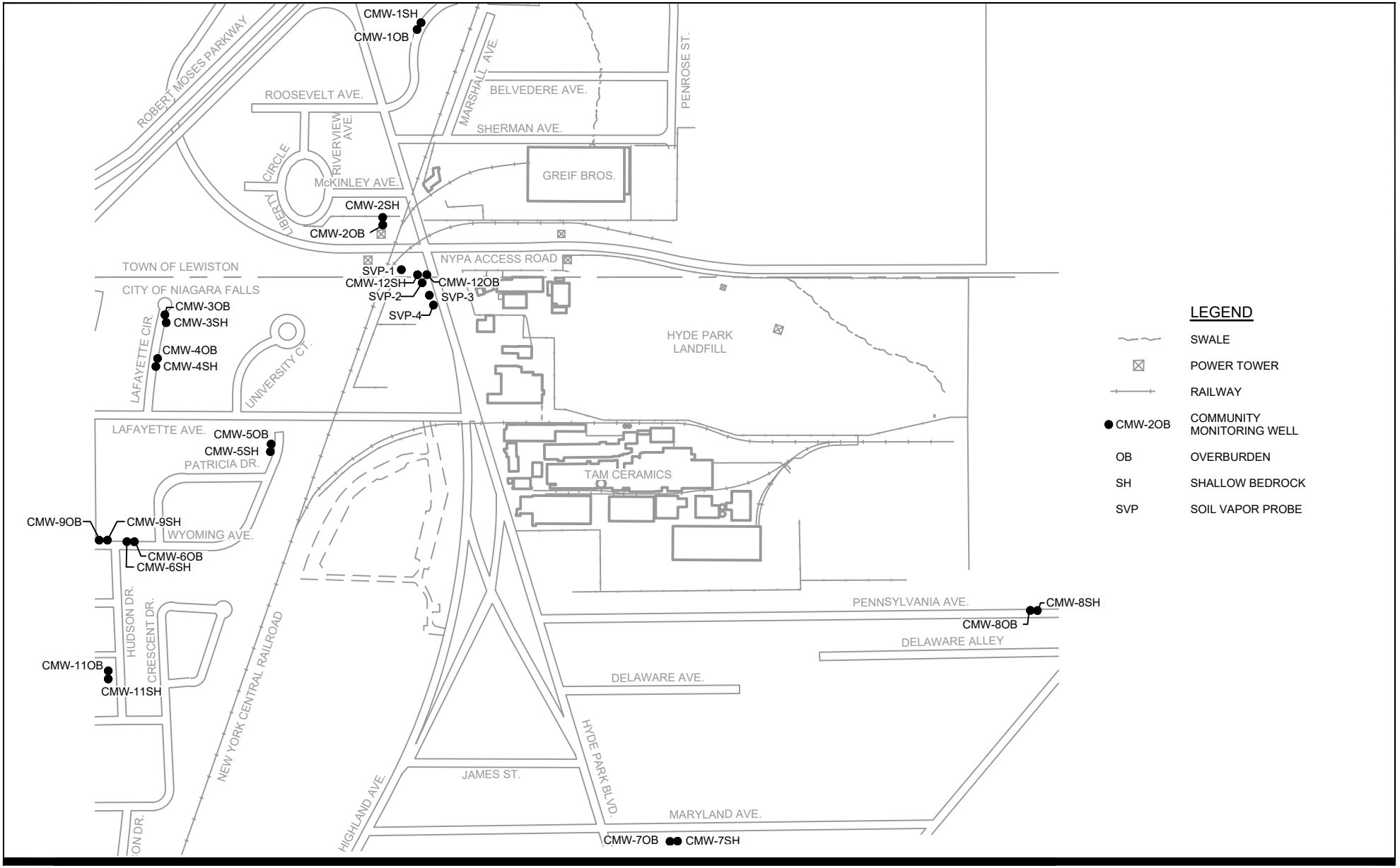

0 300 600 ft

1" = 600 ft

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GLENN SPRINGS HOLDINGS, INC.
HYDE PARK LANDFILL SITE
NIAGARA FALLS, NEW YORK

Project No. **11230216**
Date **April 2022**

COMMUNITY MONITORING PROGRAM

FIGURE 1.7

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\RPT002\11230216-GHD-00-00-RPT-EN-D107_WA-002.DWG
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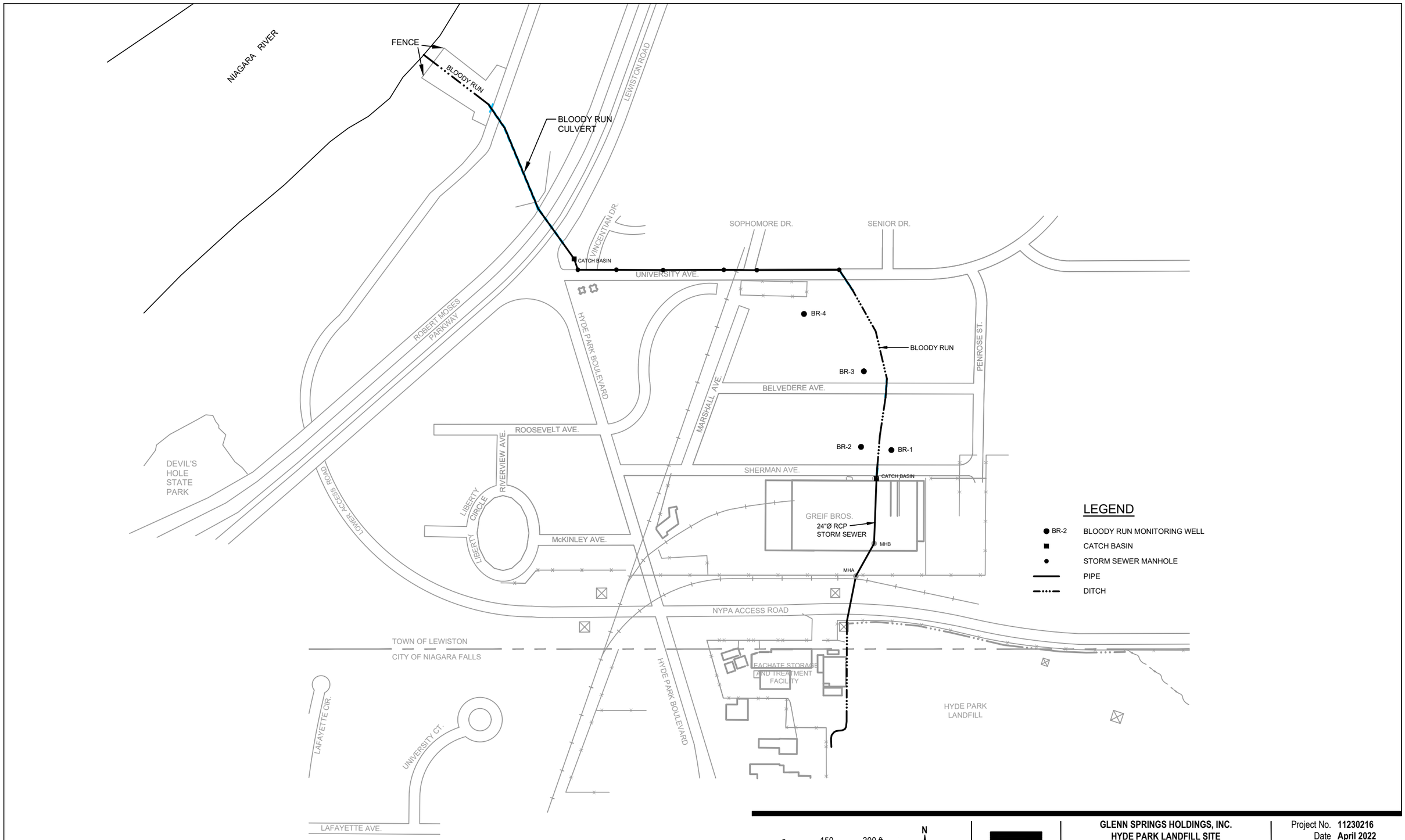

GLENN SPRINGS HOLDINGS, INC.
HYDE PARK LANDFILL SITE
NIAGARA FALLS, NEW YORK

Project No. **11230216**
Date **April 2022**

BLOODY RUN ROUTING AND MONITORING WELL LOCATIONS

FIGURE 3.1

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\RPT002\11230216-GHD-00-00-RPT-EN-D108_WA-002.DWG
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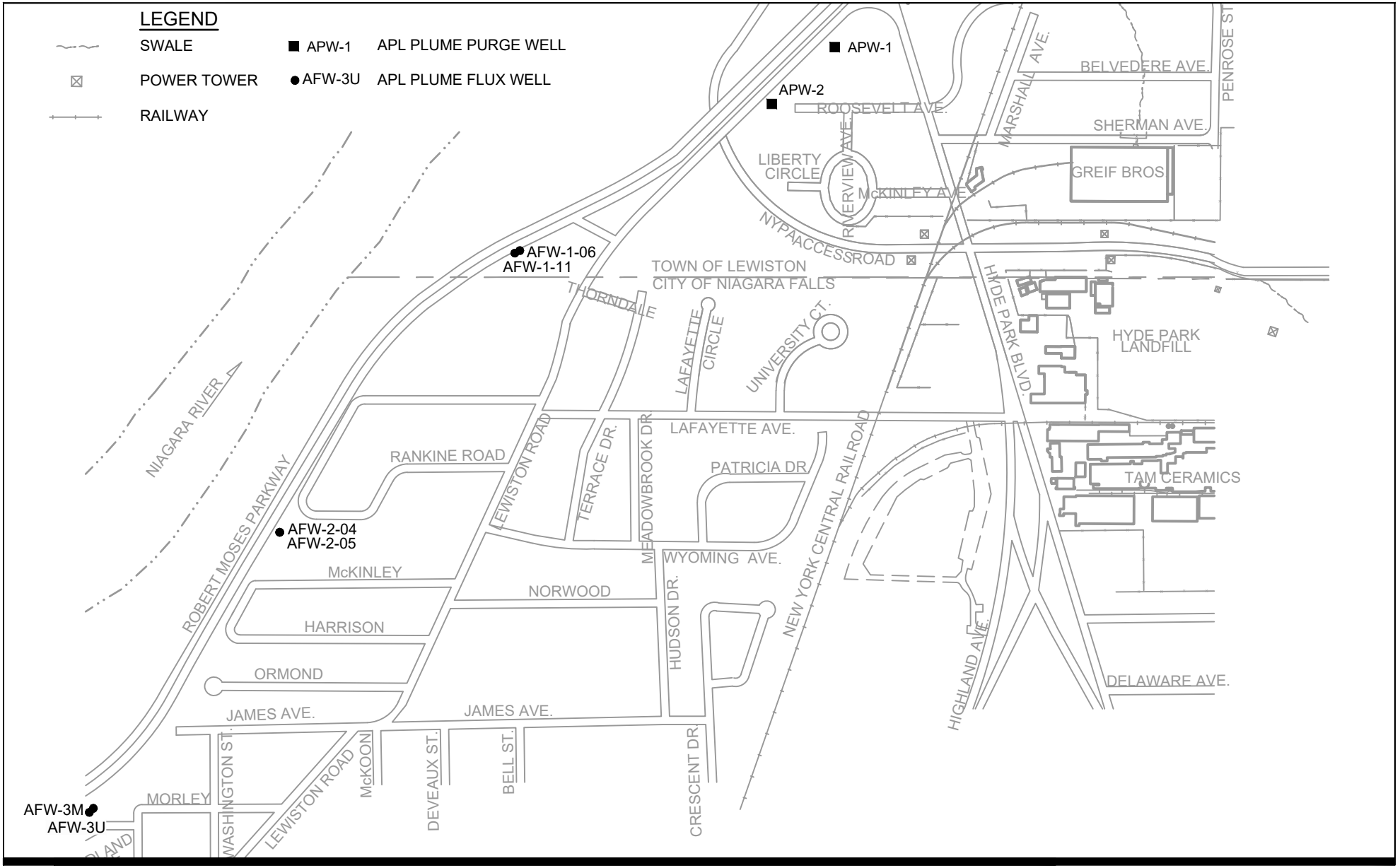


0 300 600 ft

1" = 600 ft

N

GHD

GLENN SPRINGS HOLDINGS, INC.
HYDE PARK LANDFILL SITE
NIAGARA FALLS, NEW YORK

APL FLUX WELL LOCATIONS
APL PLUME CONTAINMENT SYSTEM

Project No. **11230216**
Date **April 2022**

FIGURE 3.2

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\RPT002\11230216-GHD-00-00-RPT-EN-D109_WA-002.DWG
Plot Date: 11 April 2022 9:19 AM

Table 1.1

PMP Monitoring Tasks - 2021
Hyde Park Landfill Site
Town of Niagara, New York

Program	Frequency	Activity	Location/Description	PMP Table Reference	PRR Report Reference	Completed (Yes/No)	Comment
Overburden	Continuous	Water Level Measurement	Wet Wells	-	-	Yes	
	Daily	Total Water Flow	Decanters	-	-	Yes	
	Monthly	Purge NAPL	Source Control NAPL Recovery Well SC-3	Table 3.3	Table 3.1	Yes	
		NAPL Thickness	Source Control NAPL Recovery Well SC-3	Table 3.3	-	Yes	
	Quarterly	Hand Water Level Measurement	Manholes	Table 3.2	Table 3.2	Yes	
		Hand Water Level Measurement	OBCS Overburden Monitoring Wells	Table 3.2	Table 3.2	Yes	
		Hand Water Level Measurement	Source Control Monitoring Wells	Table 3.3	Table 3.2	Yes	
		NAPL Thickness	Source Control Monitoring Wells	Table 3.3	Table 3.1	Yes	
	Annual	NAPL Presence	Manholes	Table 3.2	Table 3.3	Yes	
		NAPL Presence	OBCS Overburden Monitoring Wells	Table 3.2	Table 3.3	Yes	
Bedrock	Continuous	Water Level Measurement	NAPL and APL Purge Wells	Table 4.1	-	Yes	See quarterly reports
	Hourly	Water Level Measurement	Bedrock Piezometer PMW-1M-09	-	-	Yes	See quarterly reports
	Daily	Total Water Flow	Decanters	-	-	Yes	
	Monthly	Total Water Flow	Bedrock Purge Wells	-	Table 3.6	Yes	
	Quarterly	Hand Water Level Measurement	All Bedrock Piezometers	-	Table 3.5	Yes	
		APL Sampling	Group B Bedrock Piezometers	Table 4.2	Tables 3.7 a-d	Yes	
	Every Fifth Quarter	APL Sampling	Group A Bedrock Piezometers	Table 4.2	Table 3.8	Yes	Completed 4th Quarter 2021 - 1st Quarter 2022
	Annual	APL Sampling	Open Catch Basin	-	Table 3.9	Yes	
		NAPL Presence	Open Catch Basin	-	-	Yes	None present
	Five-Year	APL Sampling	Bloody Run Monitoring Wells	Table 7.1	Table 3.10	Yes	Completed in 2021
		APL Sampling	Operating APL and NAPL Purge Wells	Table 7.1	-	Yes	Completed in 2021/2022
Community	Quarterly	Hand Water Level Measurement	Bedrock Monitoring Wells	Table 5.4	Table 3.12	Yes	
		Hand Water Level Measurement	Overburden Monitoring Wells	Table 5.4	Table 3.12	Yes	
	Annual	APL Plume Flux Composite Sample	APL Flux Piezometers and Purge Wells (APWs and AFWs)	Table 5.3/App D	Table 3.11	Yes	
		Vapor Monitoring	Overburden Monitoring Wells	Table 5.4	Table 3.13	Yes	
	Biennial	Gorge Face Seep Inspection	Seeps	Table 5.2	Appendix D	Yes	Completed in 2021

Table 1.1

PMP Monitoring Tasks - 2021
Hyde Park Landfill Site
Town of Niagara, New York

Program	Frequency	Activity	Location/Description	PMP Table Reference	PRR Report Reference	Completed (Yes/No)	Comment
Treatment	Continuous	APL Sampling	Treated Effluent	Table 6.1	-	Yes	See quarterly reports
		Total Water Flow	Treated Effluent	Table 6.1	-	Yes	See quarterly reports
	Weekly	APL Sampling	Carbon Interstage	Table 6.1	Table 4.2	Yes	
		APL Sampling	Treated Effluent	Table 6.1	-	Yes	See quarterly reports
	Quarterly	NAPL Volumes	Decanters	-	Table 4.1	Yes	
		APL Sampling	Leachate Feed	Table 6.1	Table 4.3	Yes	
		APL Sampling	Sac Bed Interstage	Table 6.1	Table 4.4	Yes	
		APL Sampling	Treated Effluent	Table 6.1	-	Yes	See quarterly reports
Maintenance	Weekly	Fence Inspections	-	App A	-	Yes	Available upon request
	Annual	Well Inspections	-	App A	-	Yes	Available upon request
		Cap Inspection	-	App A	-	Yes	Available upon request
Site-Wide	Quarterly	Report	-	-	-	Yes	Completed in 2021
	Annual	Report	-	-	-	Yes	Completed in 2021
	Five-Year	Report	-	-	-	Yes	Completed in 2017

Notes:

APL - Aqueous Phase Liquid
NAPL - Non-Aqueous Phase Liquid
OBCS - Overburden Barrier Collection System
PMP - Performance Monitoring Plan
PRR - Annual Periodic Review Report
\- - Not applicable

Table 3.1

2021 Source Control Well NAPL Pumping Summary
Hyde Park Landfill Site
Town of Niagara, New York

Month	SC-2			SC-3			SC-4			SC-5			SC-6			Total
	NAPL Thickness (feet)	Groundwater Elevation (ft. AMSL)	NAPL Recovered (gallons)	NAPL Thickness (feet)	Groundwater Elevation (ft. AMSL)	NAPL Recovered (gallons)	NAPL Thickness (feet)	Groundwater Elevation (ft. AMSL)	NAPL Recovered (gallons)	NAPL Thickness (feet)	Groundwater Elevation (ft. AMSL)	NAPL Recovered (gallons)	NAPL Thickness (feet)	Groundwater Elevation (ft. AMSL)	NAPL Recovered (gallons)	NAPL Recovered (gallons)
January - March	0.75	602.62	0.0	2.55	598.03	31.8	1.95	600.08	7.3	NA	602.25	NA	NA	611.29	NA	39.0
April - June	0.53	602.59	0.0	2.65	598.08	21.9	2.30	600.07	7.0	0.26	602.44	0.0	0.10	607.82	0.0	28.9
July - September	0.59	602.69	0.0	2.40	598.05	32.1	2.55	600.19	7.8	NA	602.44	NA	NA	611.84	NA	39.9
October - December	0.56	602.87	0.0	2.50	598.09	24.5	2.95	599.83	9.0	0.31	602.37	0.0	0.27	611.85	0.0	33.5
Totals			**0.0**			**110.3**			**31.0**			**0.0**			**0.0**	**141.3**

Notes:

ft. AMSL - Feet Above Mean Sea Level
NAPL - Non-Aqueous Phase Liquid
NAPL Thickness and Groundwater Elevations indicated are quarterly measurements. Monthly NAPL thickness measured at SC-3 is not shown.
NA - NAPL recovery is performed semiannually at SC-5 and SC-6.

2021 Overburden Quarterly Groundwater Elevation Summary
Hyde Park Landfill Site
Town of Niagara, New York

Well	Reference Elevation (ft. AMSL)	Groundwater Elevation Quarter 1 3/16/2021 (ft. AMSL)	Groundwater Elevation Quarter 2 6/1/2021 (ft. AMSL)	Groundwater Elevation Quarter 3 9/2/2021 (ft. AMSL)	Groundwater Elevation Quarter 4 12/3/2021 (ft. AMSL)
OMW-1	605.28	599.69	598.55	598.29	600.98
OMW-2	605.99	602.40	601.11	600.57	602.95
OMW-3	598.63	588.65	588.86	589.00	590.83
OMW-4R	601.17	589.89	589.86	589.65	590.52
OMW-5R	591.31	585.53	586.68	587.06	589.04
OMW-6	587.62	585.69	585.63	585.68	585.84
OMW-7	592.74	585.74	585.85	586.04	587.46
OMW-8R2	594.67	586.00	586.86	587.13	588.62
OMW-9	595.52	587.04	587.61	588.16	589.89
OMW-10R	595.13	585.97	587.34	588.04	590.52
OMW-11R	597.52	591.90	591.72	592.24	593.32
OMW-12R	597.20	592.36	592.23	592.39	593.21
OMW-13R	601.50	591.98	592.06	592.19	592.30
OMW-14R	599.64	NM(1)	593.59	594.72	595.65
OMW-15	607.48	602.39	601.77	601.87	603.36
OMW-16R	607.62	603.25	602.12	602.31	603.67
SC-2	625.61	602.62	602.59	602.69	602.87
SC-3	638.72	598.03	598.08	598.05	598.09
SC-4	639.35	600.08	600.07	600.19	599.83
SC-5	634.07	602.25	602.44	602.44	602.37
SC-6	631.15	611.29	607.82	611.84	611.85
MH-20	605.87	601.18	601.23	601.21	601.24
MH-21	599.77	593.64	593.66	593.66	593.78
MH-22	593.37	Dry	Dry	Dry	586.58
MH-23	587.05	574.87	576.08	576.64	579.37
MH-24	582.57	573.59	578.28	578.84	581.48
MH-25	583.82	Dry	579.89	580.46	583.10
MH-26	584.48	Dry	579.00	579.57	582.26
MH-27	586.12	575.29	577.36	577.98	580.70
MH-28	585.23	568.34	576.55	577.16	579.81
MH-29	582.90	Dry	593.83	594.46	597.12
MH-30	588.37	589.45	589.41	589.50	592.16
MH-31	590.10	580.43	580.45	580.47	581.44
MH-32	592.01	582.36	582.36	582.38	582.30
MH-33	592.51	583.80	583.81	583.77	583.74
MH-34	597.64	591.19	591.22	591.19	591.18
MH-35	605.69	599.12	599.14	599.13	599.14
MH-35A	605.69	598.52	598.50	598.31	598.51

Notes:

Dry - No water present in well
NM(1) - Not measured due to metal hoppers covering the well
ft. AMSL - Feet Above Mean Sea Level

Table 3.3

2021 Overburden NAPL Presence Monitoring
Hyde Park Landfill Site
Town of Niagara, New York

Well I.D.	February 4 - April 8, 2021 (Yes/No)
OMW-1	No
OMW-2	No
OMW-3	No
OMW-4R	No
OMW-5R	No
OMW-6	No
OMW-7	No
OMW-8R2	No
OMW-9	No
OMW-10R	No
OMW-11	No
OMW-12R	No
OMW-13R	No
OMW-14R	No
OMW-15	No
OMW-16R	No
MH-20	No
MH-21	No
MH-22	No
MH-23	No
MH-24	No
MH-25	No
MH-26	No
MH-27	No
MH-28	No
MH-29	Yes
MH-30	Yes
MH-31	Yes
MH-32	No
MH-33	No
MH-34	No
MH-35	No
MH-35A	No
Wet Well C	No
Wet Well D	Yes

Table 3.4

2021 Overburden Collection Systems Monthly Average Flow (GPM) Summary
Hyde Park Landfill Site
Town of Niagara, New York

Month	EBCS WET WELL A	OBCS WET WELL C	OBCS WET WELL D	Total EBCS	Total OBCS
January	0.3	16.4	8.4	0.3	24.8
February	0.3	8.7	7.6	0.3	16.3
March	0.4	18.2	8.8	0.4	27.1
April	0.3	12.4	5.9	0.3	18.3
May	0.0	0.0	0.0	0.0	0.0
June	0.0	0.0	0.0	0.0	0.0
July	0.0	0.0	0.0	0.0	0.0
August	0.0	0.0	0.0	0.0	0.0
September	0.0	0.0	0.0	0.0	0.0
October	0.0	0.0	0.0	0.0	0.0
November	0.0	0.0	0.0	0.0	0.0
December	0.9	20.3	4.2	0.9	24.5
Annual Average	0.2	6.3	2.9	0.2	9.2

Notes:

GPM - Gallons per minute
EBCS - Existing Barrier Collection System
OBCS - Overburden Barrier Collection System

2021 Bedrock Quarterly Groundwater Elevation Summary - Piezometers
Hyde Park Landfill Site
Town of Niagara, New York

Well	Reference Elevation (ft. AMSL)	Groundwater Elevation Quarter 1 3/16/2021 (ft. AMSL)	Groundwater Elevation Quarter 2 6/1/2021 (ft. AMSL)	Groundwater Elevation Quarter 3 9/2/2021 (ft. AMSL)	Groundwater Elevation Quarter 4 12/3/2021 (ft. AMSL)
Flow Zone 1					
G1U-01	617.08	601.96	602.31	602.57	606.56
G6-01	609.24	601.76	601.18	601.45	604.32
H2U-01	620.92	610.42	608.11	607.84	611.49
H5-01	617.61	594.24	593.99	593.49	595.14
I1-01	625.58	601.16	600.33	598.90	601.04
Flow Zone 2					
F2U-02	599.89	575.30	575.29	574.39	575.68
F4U-02	602.32	586.14	586.61	586.58	588.35
G1-02	616.86	592.13	592.10	592.15	594.05
G6-02	608.65	591.50	591.07	590.80	592.30
H2U-02	620.88	594.46	600.96	593.31	595.23
H5-02	617.47	594.15	593.79	592.98	594.92
I1-02	625.47	590.89	588.01	587.20	590.16
J2U-02	609.66	597.67	594.53	594.00	599.87
J5U-02	606.21	598.30	594.94	594.29	600.09
J6-02	609.23	597.89	594.95	594.94	600.77
Flow Zone 4					
AFW-2U-04	593.48	576.20	575.95	575.51	577.00
D1U-04	593.77	581.42	581.11	580.72	583.44
D2U-04	590.65	579.45	579.01	578.52	580.95
E6-04	578.23	565.71	565.22	565.07	565.69
F2U-04	599.76	577.96	577.68	576.90	578.64
F4U-04	602.19	586.31	586.61	587.88	589.88
F6-04	588.06	569.75	569.71	569.49	570.24
G1U-04	616.96	592.05	592.16	592.19	594.14
G6-04	609.15	591.85	591.47	591.16	592.63
H5-04	617.40	594.10	593.70	593.01	594.80
I1-04	625.30	587.30	584.98	584.30	586.63
J2U-04	609.42	594.64	592.18	591.93	596.50
J5U-04	606.05	588.74	588.07	588.12	591.00
J6-04	609.12	581.65	581.64	581.76	585.05
Flow Zone 5					
AFW-2U-05	593.33	576.20	576.04	575.41	576.77
AGW-1U-05	591.80	587.38	585.14	585.52	588.61
D1U-05	593.51	580.67	580.79	580.30	583.31
D2U-05	590.56	580.36	580.56	579.96	583.00
E6-05	578.04	565.85	565.33	565.25	565.95
F2U-05	599.64	578.19	578.02	577.37	579.21
F4U-05	602.06	584.64	586.28	586.36	588.44
F6-05	587.85	569.65	569.61	569.40	570.14
G6-05	609.13	591.61	591.18	590.91	592.35
H2M-05	621.59	591.95	592.06	591.70	593.15
H5-05	617.31	592.79	592.23	591.52	593.40
I1-05	625.25	552.75	553.09	552.96	552.30
J2U-05	609.30	581.37	580.54	580.89	584.41
J5U-05	605.87	581.57	580.98	580.78	584.56
J6-05	609.02	581.32	579.88	579.93	583.33
PMW-1U-05	598.00	579.46	581.72	582.54	584.27
Flow Zone 6					
ABP-7-06	575.78	Dry	Dry	Dry	Dry
AFW-1U-06	571.83	557.80	557.00	556.77	557.06
AFW-2U-06	593.22	545.26	545.13	545.08	545.05
AGW-1U-06	591.66	553.55	553.78	554.25	554.53
B2U-06	589.29	553.98	554.33	554.46	555.67
C3-06	585.78	548.32	548.36	548.37	548.93

2021 Bedrock Quarterly Groundwater Elevation Summary - Piezometers
Hyde Park Landfill Site
Town of Niagara, New York

Well	Reference Elevation (ft. AMSL)	Groundwater Elevation Quarter 1 3/16/2021 (ft. AMSL)	Groundwater Elevation Quarter 2 6/1/2021 (ft. AMSL)	Groundwater Elevation Quarter 3 9/2/2021 (ft. AMSL)	Groundwater Elevation Quarter 4 12/3/2021 (ft. AMSL)
Flow Zone 6 Continued					
D1U-06	593.25	548.44	549.62	549.92	550.61
D2U-06	590.38	549.20	550.25	550.61	551.30
E6-06	577.99	573.79	573.89	573.38	574.78
F2M-06	599.06	551.84	552.14	553.61	554.65
F4M-06	602.05	551.56	553.98	557.03	557.55
F6-06	587.84	560.87	573.75	573.32	574.69
G1M-06	616.75	573.97	573.95	573.54	574.83
G6-06	609.09	575.82	575.45	575.50	576.60
H2M-06	621.42	581.91	582.73	583.56	584.12
H5-06	617.17	588.11	588.82	589.00	589.28
I1-06	625.15	546.21	546.86	547.30	547.44
J2M-06	608.94	553.72	553.92	553.41	553.87
J5M-06	606.22	548.29	549.71	550.13	550.60
J6-06	608.93	554.67	554.85	554.50	554.28
PMW-1U-06	597.92	547.59	549.11	550.93	551.07
Flow Zone 7					
ABP-1-07	576.44	546.91	546.64	547.11	547.36
ABP-7-07	575.73	534.14	533.94	533.91	534.36
AFW-1M-07	571.41	Dry	Dry	Dry	Dry
AFW-2M-07	593.44	526.63	526.65	527.01	526.65
AGW-1M-07	592.91	545.84	549.08	549.88	542.84
B2M-07	589.52	531.21	537.20	542.89	552.51
C3-07	585.62	544.79	546.30	546.59	548.26
D1M-07	594.15	532.15	537.75	540.70	543.38
D2M-07	590.77	523.17	537.21	540.66	542.81
E6-07	577.91	554.76	555.87	555.00	554.91
F2M-07	598.91	520.21	536.58	539.67	542.05
F4M-07	601.91	525.36	540.28	548.68	550.59
F6-07	587.68	567.23	567.31	567.52	567.58
G1M-07	616.68	583.73	584.51	580.85	583.82
G6-07	609.06	583.55	584.27	580.64	582.86
H5-07	617.05	555.53	555.94	556.57	557.25
I1-07	625.14	544.95	547.10	549.17	543.06
J5M-07	606.07	545.70	549.20	547.30	542.96
J6-07	608.85	545.16	547.62	546.94	542.79
PMW-1M-07	598.50	530.53	532.01	537.39	540.58
Flow Zone 9					
ABP-1-09	575.49	534.68	534.51	535.48	535.04
ABP-7-09	575.67	534.18	533.84	533.55	533.96
AFW-1M-09	571.12	525.43	524.91	525.23	524.93
AFW-2M-09	593.32	521.04	521.03	521.04	521.04
AGW-1M-09	592.75	546.47	549.17	549.84	543.53
B2M-09	589.34	530.72	537.23	542.02	549.71
C3-09	585.00	542.89	545.48	546.26	547.13
D1M-09	594.02	519.91	537.77	540.72	543.69
D2M-09	590.66	519.84	537.84	540.73	Dry
E6-09	577.82	552.87	552.83	552.93	552.83
F2M-09	598.71	519.61	537.42	540.13	542.90
F4M-09	601.79	519.54	537.40	540.31	543.26
F6-09	587.53	572.34	572.63	571.64	571.05
G1M-09	616.58	579.97	581.37	580.58	581.53
G6-09	608.98	584.14	585.07	581.39	584.25
H2M-09	621.32	550.83	553.66	554.28	550.35
H5-09	616.93	545.31	546.64	547.87	542.51
I1-09	624.91	563.47	563.36	563.54	563.44

2021 Bedrock Quarterly Groundwater Elevation Summary - Piezometers
Hyde Park Landfill Site
Town of Niagara, New York

Well	Reference Elevation (ft. AMSL)	Groundwater Elevation Quarter 1 3/16/2021 (ft. AMSL)	Groundwater Elevation Quarter 2 6/1/2021 (ft. AMSL)	Groundwater Elevation Quarter 3 9/2/2021 (ft. AMSL)	Groundwater Elevation Quarter 4 12/3/2021 (ft. AMSL)
Flow Zone 9 Continued					
J2M-09	608.77	546.54	547.75	548.05	544.03
J5M-09	605.82	545.71	549.03	547.10	543.64
J6-09	608.76	565.08	564.82	565.34	565.30
PMW-1M-09	598.34	519.82	537.81	540.67	543.52
Flow Zone 11					
AFW-1L-11	572.10	508.88	507.74	506.79	508.89
AFW-2L-11	593.43	496.09	496.40	496.62	497.45
AGW-1L-11	592.71	583.88	584.43	584.40	584.52
B2L-11	589.65	503.30	535.93	531.18	532.23
D1L-11	593.80	502.38	528.50	526.04	526.89
D2L-11	590.21	523.39	526.90	584.05	527.00
E6-11	577.72	532.93	534.32	535.64	535.28
F2L-11	598.94	555.12	556.11	556.51	557.25
F4L-11	602.22	570.70	570.51	570.63	570.93
F6-11	587.40	527.51	528.63	530.09	529.93
G1L-11	616.84	586.55	587.26	613.79	581.55
G6-11	608.89	589.09	589.80	587.39	584.07
H2L-11	620.73	558.30	559.06	559.94	559.92
H5-11	616.81	541.60	542.48	541.06	539.68
I1-11	624.75	545.25	545.50	545.93	546.13
J5L-11	607.20	554.27	556.09	555.24	552.57
J6-11	608.68	586.10	585.56	585.99	586.85
PMW-1L-11	598.84	512.72	521.03	530.62	529.15

Notes:

Dry - No water present in well
ft. AMSL - Feet Above Mean Sea Level

Table 3.6

2021 Bedrock Purge Well Monthly Flow Rate (GPM) Summary
Hyde Park Landfill Site
Town of Niagara, New York

Month	PW-1U	PW-1L	PW-2UR	PW-2M	PW-2L	PW-3M	PW-3L	PW-4U	PW-5UR	PW-6UR	PW-6MR
January	0.27	2.94	0.78	0.00	0.74	0.11	4.18	0.06	1.80	0.37	4.76
February	0.09	6.92	0.73	0.00	0.46	0.12	3.75	0.11	1.69	0.28	4.50
March	0.09	6.30	0.82	0.00	0.49	0.21	3.74	0.37	1.81	0.39	4.36
April	0.08	5.28	0.70	0.00	0.37	0.12	2.53	0.03	1.46	0.38	3.57
May	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
June	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
July	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
August	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
September	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
October	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
November	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
December	0.22	8.32	0.86	0.00	0.00	0.18	1.67	0.00	0.03	0.30	0.39
Annual Average	0.06	2.48	0.32	0.00	0.17	0.06	1.32	0.05	0.57	0.14	1.46

Month	PW-7U	PW-8M [(1)]	PW-8U	PW-9U	PW-10U	APW-1	APW-2
January	0.34	0.00	0.62	0.64	2.46	0.50	0.55
February	0.30	0.00	0.54	0.60	2.25	0.32	0.38
March	0.34	0.00	0.65	0.29	2.58	0.42	0.65
April	0.28	0.00	0.51	0.62	2.15	0.26	0.52
May	0.00	0.00	0.00	0.00	0.00	0.00	0.00
June	0.00	0.00	0.00	0.00	0.00	0.00	0.00
July	0.00	0.00	0.00	0.00	0.00	0.00	0.00
August	0.00	0.00	0.00	0.00	0.00	0.00	0.00
September	0.00	0.00	0.00	0.00	0.00	0.00	0.00
October	0.00	0.00	0.00	0.00	0.00	0.00	0.00
November	0.00	0.00	0.00	0.00	0.00	0.00	0.00
December	0.19	0.50	0.00	0.00	0.00	0.01	0.46
Annual Average	0.12	0.04	0.19	0.18	0.79	0.13	0.21

Notes:

GPM - Gallons per minute
(1) - PW-8M typically run at set point and does not require frequent pumping

Table 3.7a

Analytical Results Summary
Quarterly Group B Bedrock Piezometer Sampling
First Quarter 2021
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:			ABP-7-09	AGW-1M-07	AGW-1M-07	AGW-1M-09	AGW-1U-06
Sample ID:			ABP-7-09-0221	AGW-1M-07-0221	W7-10-0221	AGW-1M-09-0221	AGW-1U-06-0221
Sample Date:			02/09/2021	02/10/2021	02/10/2021	02/10/2021	02/11/2021
					Duplicate		
Parameters	**Units**	**Screening Level**					
Organic Acids							
2-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
3-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	**58 J**	250 U	250 U	**170 J**	**180 J**

Sample Location:			B2L-11	C3-07	C3-09	D1M-09	D1U-04
Sample ID:			B2L-11-0221	C3-07-0221	C3-09-0221	D1M-09-0221	D1U-04-0221
Sample Date:			02/10/2021	02/09/2021	02/09/2021	02/10/2021	02/10/2021
Organic Acids							
2-Chlorobenzoic acid	µg/L	7,300	87	30 U	30 U	30 U	30 U
3-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	**190 J**	250 U	250 U	**260**	250 U

Sample Location:			D1U-05	F2M-09	F2U-02	F2U-04	G1U-01
Sample ID:			D1U-05-0221	F2M-09-0221	F2U-02-0221	F2U-04-0221	G1U-01-0221
Sample Date:			02/10/2021	02/09/2021	02/09/2021	02/09/2021	02/10/2021
Organic Acids							
2-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
3-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	**190 J**	250 U	**320**	**430**	250 U

Table 3.7a

Analytical Results Summary
Quarterly Group B Bedrock Piezometer Sampling
First Quarter 2021
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:			**G6-01**	**G6-04**	**G6-06**	**H2U-02**	**H5-09**
Sample ID:			**G6-01-0221**	**G6-04-0221**	**G6-06-0221**	**H2U-02-0221**	**H5-09-0221**
Sample Date:			**02/09/2021**	**02/09/2021**	**02/09/2021**	**02/11/2021**	**02/10/2021**
Parameters	**Units**	**Screening Level**					
Organic Acids							
2-Chlorobenzoic acid	µg/L	7,300	30 U	920	30 U	7.5 J	30 U
3-Chlorobenzoic acid	µg/L	7,300	30 U	220	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	30 U	1600	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	250 U	43 J	250 U	**260**	49 J

Notes:

µg/L - Micrograms per liter
J - Estimated concentration
U - Not detected at the associated reporting limit
260 - Concentration exceeds Screening Level

Table 3.7b

Analytical Results Summary
Quarterly Group B Bedrock Piezometer Sampling
Second Quarter 2021
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:			ABP-7-09	AGW-1M-07	AGW-1M-09	AGW-1U-06	B2L-11
Sample ID:			ABP-7-09-0521	AGW1M-07-0521	AGW1M-09-0521	AGW1U-06-0521	B2L-11-0521
Sample Date:			05/27/2021	05/27/2021	05/27/2021	05/27/2021	05/27/2021
Parameters	**Units**	**Screening Level**					
Organic Acids							
2-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	35
3-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	250 U	250 U	**140 J**	**98 J**	**230 J**

Sample Location:			C3-07	C3-09	D1M-09	D1U-04	D1U-05
Sample ID:			C3-07-0521	C3-09-0521	D1M-09-0521	D1U-04-0521	D1U-05-0521
Sample Date:			05/26/2021	05/26/2021	05/26/2021	05/26/2021	05/26/2021
Organic Acids							
2-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
3-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	250 U	250 U	**58 J**	250 U	**230 J**

Table 3.7b

Analytical Results Summary
Quarterly Group B Bedrock Piezometer Sampling
Second Quarter 2021
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:			F2M-09	F2U-02	F2U-04	G1U-01	G6-01
Sample ID:			F2M-09-0521	F2U-02-0521	F2U-04-0521	G1U-01-0521	G6-01-0521
Sample Date:			05/26/2021	05/26/2021	05/26/2021	05/26/2021	05/26/2021
Parameters	**Units**	**Screening Level**					
Organic Acids							
2-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
3-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	250 U	**230 J**	**340**	250 U	250 U

Sample Location:			G6-01	G6-04	G6-06	H2U-02	H5-09
Sample ID:			W7-10-0521	G6-04-0521	G6-06-0521	H2U-02-0521	H5-09-0521
Sample Date:			05/26/2021	05/26/2021	05/26/2021	05/27/2021	05/27/2021
			Duplicate				
Organic Acids							
2-Chlorobenzoic acid	µg/L	7,300	30 U	2300	30 U	30 U	30 U
3-Chlorobenzoic acid	µg/L	7,300	30 U	560	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	30 U	3700	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	250 U	**78 J**	250 U	**210 J**	250 U

Notes:

µg/L - Micrograms per liter
J - Estimated concentration
U - Not detected at the associated reporting limit
340 - Concentration exceeds Screening Level

Table 3.7c

Analytical Results Summary
Quarterly Group B Bedrock Piezometer Sampling
Third Quarter 2021
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:			ABP-7-09	AGW-1M-07	AGW-1M-07	AGW-1M-09	AGW-1U-06
Sample ID:			ABP-7-09-1021	AGW-1M-07-1021	W7-10-1021	AGW-1M-09-1021	AGW-1U-06-1021
Sample Date:			10/26/2021	10/26/2021	10/26/2021 (Duplicate)	10/26/2021	10/26/2021
Parameters	**Units**	**Screening Level**					
Organic Acids							
2-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	61	30 U
3-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	43 J	32 J	250 U	**220 J**	**51 J**

Sample Location:			B2L-11	C3-07	C3-09	D1M-09	D1U-04
Sample ID:			B2L-11-1021	C3-07-1021	C3-09-1021	D1M-09-1021	D1U-04-1021
Sample Date:			10/26/2021	10/22/2021	10/22/2021	10/22/2021	10/22/2021
Organic Acids							
2-Chlorobenzoic acid	µg/L	7,300	120	30 U	30 U	30 U	30 U
3-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	**290**	37 J	250 U	37 J	250 U

Table 3.7c

Analytical Results Summary
Quarterly Group B Bedrock Piezometer Sampling
Third Quarter 2021
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:			D1U-05	F2M-09	F2U-02	F2U-04	G1U-01
Sample ID:			D1U-05-1021	F2M-09-1021	F2U-02-1021	F2U-04-1021	G1U-01-1021
Sample Date:			10/22/2021	10/22/2021	10/22/2021	10/22/2021	10/26/2021
Parameters	**Units**	**Screening Level**					
Organic Acids							
2-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
3-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	**550**	250 U	**270**	**380**	250 U

Sample Location:			G6-01	G6-04	G6-06	H2U-02	H5-09
Sample ID:			G6-01-1021	G6-04-1021	G6-06-1021	H2U-02-1021	H5-09-1021
Sample Date:			10/22/2021	10/22/2021	10/22/2021	10/26/2021	10/26/2021
Organic Acids							
2-Chlorobenzoic acid	µg/L	7,300	30 U	2200	30 U	30 U	30 U
3-Chlorobenzoic acid	µg/L	7,300	30 U	580	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	30 U	3800	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	250 U	**92 J**	250 U	**230 J**	43 J

Notes:

µg/L - Micrograms per liter
J - Estimated concentration
U - Not detected at the associated reporting limit
270 - Concentration exceeds Screening Level

Table 3.7d

Analytical Results Summary
Quarterly Group B Bedrock Piezometer Sampling
Fourth Quarter 2021
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:			ABP-7-09	AGW-1M-07	AGW-1M-09	AGW-1U-06	B2L-11
Sample ID:			ABP-7-09-1221	AGW-1M-07-1221	AGW-1M-09-1221	AGW-1U-06-1221	B2L-11-1221
Sample Date:			12/17/2021	12/17/2021	12/17/2021	01/12/2022	01/11/2022
Parameters	**Units**	**Screening Level**					
Organic Acids							
2-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	34	30 U	140
3-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	**52 J**	250 U	**230 J**	**80 J**	**360**

Sample Location:			C3-07	C3-09	D1M-09	D1U-04	D1U-05
Sample ID:			C3-07-1221	C3-09-1221	D1M-09-1221	D1U-04-1221	D1U-05-1221
Sample Date:			01/10/2022	01/10/2022	12/16/2021	12/16/2021	12/16/2021
Organic Acids							
2-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
3-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	250 U	250 U	**65 J**	250 U	**920**

Table 3.7d

Analytical Results Summary
Quarterly Group B Bedrock Piezometer Sampling
Fourth Quarter 2021
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:			F2M-09	F2U-02	F2U-04	G1U-01	G6-01
Sample ID:			F2M-09-1221	F2U-02-1221	F2U-04-1221	G1U-01-1221	G6-01-1221
Sample Date:			01/10/2022	01/10/2022	01/10/2022	01/11/2022	12/10/2021
Parameters	**Units**	**Screening Level**					
Organic Acids							
2-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
3-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	30 U	30 U	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	250 U	**390**	**220 J**	250 U	250 U

Sample Location:			G6-04	G6-06	H2U-02	H5-09
Sample ID:			G6-04-1221	G6-06-1221	H2U-02-1221	H5-09-1221
Sample Date:			12/10/2021	12/10/2021	12/17/2021	01/04/2022
Organic Acids						
2-Chlorobenzoic acid	µg/L	7,300	2300	30 U	30 U	29 J
3-Chlorobenzoic acid	µg/L	7,300	600	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7,300	4800	30 U	30 U	30 U
Benzoic acid	µg/L	150,000	200 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	**130 J**	250 U	**190 J**	**120 J**

Notes:

µg/L - Micrograms per liter
J - Estimated concentration
U - Not detected at the associated reporting limit
390 - Concentration exceeds Screening Level

Table 3.8

Analytical Results Summary
Fifth Quarter Group A Bedrock Piezometer Sampling
Fourth Quarter 2021 - First Quarter 2022
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:			ABP-1-09	ABP-7-09	AFW-1L-11	AFW-2U-04	AFW-2U-05	AGW-1M-07	AGW-1M-09	AGW-1U-05	AGW-1U-06	B2L-11
Sample ID:			ABP-1-09-1221	ABP-7-09-1221	AFW-1L-11-1221	AFW-2U-04-1221	AFW-2U-05-1221	AGW-1M-07-1221	AGW-1M-09-1221	AGW-1U-05-1221	AGW-1U-06-1221	B2L-11-1221
Sample Date:			1/12/2022	12/17/2021	1/10/2022	1/7/2022	1/7/2022	12/17/2021	12/17/2021	12/17/2021	1/12/2022	1/11/2022
Parameters	**Units**	**Screening Level**										
Volatile Organic Compounds												
1,1,1-Trichloroethane	ug/L	200	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
1,1,2,2-Tetrachloroethane	ug/L	0.053	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	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	800	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.55 J	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.45 J	1.2	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	600	1.0 U	0.71 J	1.0 U	1.0 U	1.0 U	0.37 J	2.9	1.0 U	1.0 U	0.24 J
1,2-Dichloroethane	ug/L	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	180	1.0 U	2.0	1.0 U	1.0 U	1.0 U	0.71 J	4.4	1.0 U	1.0 U	0.24 J
1,4-Dichlorobenzene	ug/L	75	1.0 U	1.9	1.0 U	1.0 U	1.0 U	0.74 J	5.0	1.0 U	1.0 U	0.42 J
2-Chlorotoluene	ug/L	120	1.0 U	8.7	1.0 U	1.0 U	1.0 U	1.5	31	1.0 U	1.0 U	3.6
3-Chlorotoluene	ug/L	120	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
4-Chlorotoluene	ug/L	120	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.35 J	1.0 U	1.0 U	1.0 U
Benzene	ug/L	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	7.4
Bromodichloromethane	ug/L	80	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	80	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
Bromomethane (Methyl bromide)	ug/L	8.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	1000	1.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.47 J	4.8
Carbon tetrachloride	ug/L	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	100	1.0 U	24	1.0 U	1.0 U	1.0 U	5.7	41	1.0 U	1.0 U	11
Chloroethane	ug/L	3.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	80	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
Chloromethane (Methyl chloride)	ug/L	190	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
cis-1,2-Dichloroethene	ug/L	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.71 J	0.48 J	0.37 J	1.8
cis-1,3-Dichloropropene	ug/L	0.44	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
Dichlorodifluoromethane (CFC-12)	ug/L	350	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
Ethylbenzene	ug/L	700	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	0.21 J
m&p-Xylenes	ug/L		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Methylene chloride	ug/L	30	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
m-Monochlorobenzotrifluoride	ug/L	5	1.0 U	0.34 J	1.0 U	1.0 U	1.0 U	0.51 J	3.9	1.0 U	1.0 U	1.0 U
o-Monochlorobenzotrifluoride	ug/L	50	1.0 U	0.54 J	1.0 U	1.0 U	1.0 U	1.0	8.0	1.0 U	1.0 U	0.39 J
o-Xylene	ug/L		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.3	1.0 U	1.0 U	0.24 J
p-Monochlorobenzotrifluoride	ug/L	50	1.0 U	1.8	1.0 U	1.0 U	1.0 U	1.8	11	1.0 U	1.0 U	0.60 J
Styrene	ug/L		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
Tetrachloroethene	ug/L	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.43 J	1.0 U	1.0 U	0.27 J
trans-1,2-Dichloroethene	ug/L	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.38 J	1.0 U	1.0 U	0.51 J
trans-1,3-Dichloropropene	ug/L	0.44	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
Trichloroethene	ug/L	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.57 J
Trichlorofluoromethane (CFC-11)	ug/L		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
Vinyl acetate	ug/L		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0	1.0 U	1.1	1.0 U
Xylenes (total)	ug/L	10000	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	1.3 J	3.0 U	3.0 U	0.24 J
Semi-volatile Organic Compounds												
2,4,6-Trichlorophenol	ug/L	6.1	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
2,4-Dichlorophenol	ug/L	110	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	1.5 J	9.1 U	9.1 U	9.1 U
2,4-Dimethylphenol	ug/L	730	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
2,4-Dinitrophenol	ug/L	73	45 U	48 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U
2-Chloronaphthalene	ug/L	490	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U

Table 3.8

Analytical Results Summary
Fifth Quarter Group A Bedrock Piezometer Sampling
Fourth Quarter 2021 - First Quarter 2022
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:			ABP-1-09	ABP-7-09	AFW-1L-11	AFW-2U-04	AFW-2U-05	AGW-1M-07	AGW-1M-09	AGW-1U-05	AGW-1U-06	B2L-11
Sample ID:			ABP-1-09-1221	ABP-7-09-1221	AFW-1L-11-1221	AFW-2U-04-1221	AFW-2U-05-1221	AGW-1M-07-1221	AGW-1M-09-1221	AGW-1U-05-1221	AGW-1U-06-1221	B2L-11-1221
Sample Date:			1/12/2022	12/17/2021	1/10/2022	1/7/2022	1/7/2022	12/17/2021	12/17/2021	12/17/2021	1/12/2022	1/11/2022
Parameters	**Units**	**Screening**										
2-Chlorophenol	ug/L	30	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
2-Nitrophenol	ug/L	50	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
4,6-Dinitro-2-methylphenol	ug/L	3.7	45 U	48 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U
4-Chloro-3-methylphenol	ug/L	50	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
4-Nitrophenol	ug/L	50	45 U	48 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U
Acenaphthene	ug/L	370	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Acenaphthylene	ug/L	310	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Anthracene	ug/L	1800	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Benzo(a)anthracene	ug/L	0.092	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Benzo(a)pyrene	ug/L	0.2	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Benzo(b)fluoranthene	ug/L	0.092	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Benzo(g,h,i)perylene	ug/L	310	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
bis(2-Chloroethoxy)methane	ug/L	5	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	6	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Butyl benzylphthalate (BBP)	ug/L		9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Chrysene	ug/L	9.2	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Dibenz(a,h)anthracene	ug/L	0.0092	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Diethyl phthalate	ug/L	29000	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Dimethyl phthalate	ug/L	370000	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Di-n-butylphthalate (DBP)	ug/L	3700	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Di-n-octyl phthalate (DnOP)	ug/L	1500	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Fluoranthene	ug/L	1500	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Fluorene	ug/L	240	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Hexachlorobenzene	ug/L	1	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Hexachlorobutadiene	ug/L	0.86	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Hexachlorocyclopentadiene	ug/L	50	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Hexachloroethane	ug/L	4.8	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Indeno(1,2,3-cd)pyrene	ug/L	0.092	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Isophorone	ug/L	70	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Naphthalene	ug/L	6.5	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Octachlorocyclopentene	ug/L		4.5 U	4.8 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U
Pentachlorophenol	ug/L	1	45 U	48 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U
Phenanthrene	ug/L	310	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Phenol	ug/L	11000	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Pyrene	ug/L	180	9.1 U	9.6 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Organic Acids												
2-Chlorobenzoic acid	ug/L	7300	30 U	30 U	30 U	30 U	30 U	30 U	34	30 U	30 U	140
3-Chlorobenzoic acid	ug/L	7300	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	ug/L	7300	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U
Benzoic acid	ug/L	150000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	ug/L	50	250 U	52 J	250 U	250 U	250 U	250 U	230 J	250 U	80 J	360
General Chemistry												
Sulfate	ug/L		1610000	192000	131000	73200	198000	1240000	1570000	209000	672000	1580000

Notes:

U	- Not detected at the associated reporting limit
R	-Data rejected
J	- Estimated concentration
J+	- Estimated concentration; result may be biased high
UJ	- Not detected; associated reporting limit is estimated
360	- Value exceeds associated screening level

Table 3.8

Analytical Results Summary
Fifth Quarter Group A Bedrock Piezometer Sampling
Fourth Quarter 2021 - First Quarter 2022
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:		C3-07	C3-09	D1L-11	D1M-09	D1U-04	D1U-05	D2M-09	D2U-04	D2U-05	E6-04	E6-05	E6-06	E6-09	E6-11	F2L-11
Sample ID:		C3-07-1221	C3-09-1221	D1L-11-1221	D1M-09-1221	D1U-04-1221	D1U-05-1221	D2M-09-1221	D2U-04-1221	D2U-05-1221	E6-04-1221	E6-05-1221	E6-06-1221	E6-09-1221	E6-11-1221	F2L-11-1221
Sample Date:		1/10/2022	1/10/2022	12/16/2021	12/16/2021	12/16/2021	12/16/2021	1/7/2022	1/7/2022	1/7/2022	12/16/2021	12/16/2021	12/16/2021	12/16/2021	12/16/2021	1/10/2022
Parameters	**Units**															
Volatile Organic Compounds																
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	10 U	0.80 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	10 U	1.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	10 U	13	1.0 U	1.0 U	0.65 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	10 U	2.7	1.0 U	1.0 U	0.68 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
2-Chlorotoluene	ug/L	1.0 U	1.0 U	10 U	15	1.0 U	1.0 U	2.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
3-Chlorotoluene	ug/L	1.0 U	1.0 U	10 U	0.25 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
4-Chlorotoluene	ug/L	1.0 U	1.0 U	10 U	0.25 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
Benzene	ug/L	1.0 U	1.0 U	140	1.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	110	46	51
Bromodichloromethane	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
Carbon disulfide	ug/L	1.0 U	1.0 U	520	2.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	750	61	4.8
Carbon tetrachloride	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	10 U	13	1.0 U	1.1	7.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	10 U	0.74 J	1.0 U	1.0 U	0.95 J	1.0 U	1.0 U	1.0 U	1.0 U	2.4	10 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	3.3 J	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	3.8 J	1.4	0.37 J
m&p-Xylenes	ug/L	2.0 U	2.0 U	37	2.0 U	2.0 U	2.0 U	2.0 U	0.24 J	2.0 U	2.0 U	2.0 U	2.0 U	57	16	2.8
Methylene chloride	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
m-Monochlorobenzotrifluoride	ug/L	1.0 U	1.0 U	10 U	1.4	1.0 U	1.0 U	0.22 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
o-Monochlorobenzotrifluoride	ug/L	1.0 U	1.0 U	10 U	2.1	1.0 U	1.0 U	0.30 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
o-Xylene	ug/L	1.0 U	1.0 U	10 U	0.37 J	1.0 U	1.0 U	0.21 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	6.2 J	2.9	1.1
p-Monochlorobenzotrifluoride	ug/L	1.0 U	1.0 U	10 U	4.0	1.0 U	1.0 U	0.70 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
Styrene	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	2.7 J	0.21 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	47	1.0 U	13
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	10 U	0.40 J	1.0 U	1.0 U	0.22 J	1.0 U	1.0 U	1.0 U	1.0 U	0.62 J	10 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	10 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	0.59 J	10 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	10 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	10 U	1.0 U	1.0 U
Vinyl acetate	ug/L	2.0 U	2.0 U	20 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	20 U	2.0 U	2.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	0.93 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U
Xylenes (total)	ug/L	3.0 U	3.0 U	37	0.37 J	3.0 U	3.0 U	3.0 U	0.24 J	3.0 U	3.0 U	3.0 U	3.0 U	63	19	3.9
Semi-volatile Organic Compounds																
2,4,6-Trichlorophenol	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
2,4-Dichlorophenol	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
2,4-Dimethylphenol	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	1.4 J	10 U	9.1 U
2,4-Dinitrophenol	ug/L	45 U	45 U	50 U	50 U	R	50 U	45 U	45 U	45 U	50 U	50 U	50 U	50 U	50 U	45 U
2-Chloronaphthalene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U

Table 3.8

Analytical Results Summary
Fifth Quarter Group A Bedrock Piezometer Sampling
Fourth Quarter 2021 - First Quarter 2022
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:		C3-07	C3-09	D1L-11	D1M-09	D1U-04	D1U-05	D2M-09	D2U-04	D2U-05	E6-04	E6-05	E6-06	E6-09	E6-11	F2L-11
Sample ID:		C3-07-1221	C3-09-1221	D1L-11-1221	D1M-09-1221	D1U-04-1221	D1U-05-1221	D2M-09-1221	D2U-04-1221	D2U-05-1221	E6-04-1221	E6-05-1221	E6-06-1221	E6-09-1221	E6-11-1221	F2L-11-1221
Sample Date:		1/10/2022	1/10/2022	12/16/2021	12/16/2021	12/16/2021	12/16/2021	1/7/2022	1/7/2022	1/7/2022	12/16/2021	12/16/2021	12/16/2021	12/16/2021	12/16/2021	1/10/2022
Parameters	**Units**															
2-Chlorophenol	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
2-Nitrophenol	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
4,6-Dinitro-2-methylphenol	ug/L	45 U	45 U	50 U	50 U	50 U	50 U	45 U	45 U	45 U	50 U	50 U	50 U	50 U	50 U	45 U
4-Chloro-3-methylphenol	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
4-Nitrophenol	ug/L	45 U	45 U	50 U	50 U	50 U	50 U	45 U	45 U	45 U	50 U	50 U	50 U	50 U	50 U	45 U
Acenaphthene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Acenaphthylene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Anthracene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Benzo(a)anthracene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Benzo(a)pyrene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Benzo(b)fluoranthene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Benzo(g,h,i)perylene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
bis(2-Chloroethoxy)methane	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	13	10 U	10 U	10 U	10 U	9.1 U
Butyl benzylphthalate (BBP)	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Chrysene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Dibenz(a,h)anthracene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Diethyl phthalate	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Dimethyl phthalate	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Di-n-butylphthalate (DBP)	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Di-n-octyl phthalate (DnOP)	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Fluoranthene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Fluorene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Hexachlorobenzene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Hexachlorobutadiene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Hexachlorocyclopentadiene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Hexachloroethane	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Indeno(1,2,3-cd)pyrene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Isophorone	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Naphthalene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Octachlorocyclopentene	ug/L	4.5 U	4.5 U	5.0 U	5.0 U	5.0 U	5.0 U	4.5 U	4.5 U	4.5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	4.5 U
Pentachlorophenol	ug/L	45 U	45 U	50 U	50 U	50 U	50 U	45 U	45 U	45 U	50 U	50 U	50 U	50 U	50 U	45 U
Phenanthrene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Phenol	ug/L	9.1 U	9.1 U	7.2 J	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	7.7 J	10 U	3.5 J
Pyrene	ug/L	9.1 U	9.1 U	10 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	10 U	10 U	9.1 U
Organic Acids																
2-Chlorobenzoic acid	ug/L	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U
3-Chlorobenzoic acid	ug/L	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	ug/L	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U
Benzoic acid	ug/L	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	ug/L	250 U	250 U	250 U	65 J	250 U	920	130 J	49 J	290	250 U	250 U	250 U	250 U	250 U	250 U
General Chemistry																
Sulfate	ug/L	181000	295000	1080000	1380000	115000	200000	1230000	96000	295000	1090000	1520000	1470000	1010000	1530000	687000

Notes:

U	- Not detected at the associated reporting limit
R	-Data rejected
J	- Estimated concentration
J+	- Estimated concentration; result may be biased high
UJ	- Not detected; associated reporting limit is estimated
360	- Value exceeds associated screening level

Table 3.8

Analytical Results Summary
Fifth Quarter Group A Bedrock Piezometer Sampling
Fourth Quarter 2021 - First Quarter 2022
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:		F2M-09	F2U-02	F2U-04	F6-04	F6-06	F6-11	G1L-11	G1M-06	G1U-01	G6-01	G6-02	G6-04	G6-05	G6-06	G6-07
Sample ID:		F2M-09-1221	F2U-02-1221	F2U-04-1221	F6-04-1221	F6-06-1221	F6-11-1221	G1L-11-1221	G1M-06-1221	G1U-01-1221	G6-01-1221	G6-02-1221	G6-04-1221	G6-05-1221	G6-06-1221	G6-07-1221
Sample Date:		1/10/2022	1/10/2022	1/10/2022	12/15/2021	12/15/2021	12/15/2021	1/11/2022	1/11/2022	1/11/2022	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/15/2021
Parameters	**Units**															
Volatile Organic Compounds																
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4	1.3	7.4	93	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	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	0.32 J	0.29 J	2.4	18	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.26 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0	6.1	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	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	0.28 J	0.50 J	0.54 J	3.9 J	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	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	0.21 J	0.20 J	1.0 U	5.0 U	1.0 U	1.0 U
2-Chlorotoluene	ug/L	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	0.23 J	0.26 J	0.24 J	5.0 U	1.0 U	1.0 U
3-Chlorotoluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
4-Chlorotoluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Benzene	ug/L	0.57 J	1.0 U	1.0 U	1.0 U	1.0 U	31	47	1.0 U	1.0 U	1.0 U	1.0 U	51	340	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	9.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.6	1.0 U	1.0 U	1.0 U	1.0 U	18	120	2.9	6.1
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.23 J	1.0 U	1.0 U	1.0 U	1.0 U	0.38 J	0.55 J	2.4	26	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	57	700	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	0.64 J	0.32 J	0.37 J	1.0 U	1.9	1.0 U	1.0 U	1.0 U	1.0 U	25	35	73	200	1.0 J	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	0.35 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.25 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.1 J	1.0 U	1.0 U
m&p-Xylenes	ug/L	0.99 J	2.0 U	2.0 U	2.0 U	0.70 J	2.0 U	0.83 J	2.0 U	2.0 U	2.0 U	2.0 U	0.43 J	5.6 J	2.0 U	2.0 U
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
m-Monochlorobenzotrifluoride	ug/L	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	1.3	1.0 J	5.0 U	1.0 U	1.0 U
o-Monochlorobenzotrifluoride	ug/L	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	1.8	1.8	5.0 U	1.0 U	1.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.27 J	3.8 J	1.0 U	1.0 U
p-Monochlorobenzotrifluoride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.28 J	0.31 J	7.2	6.9	6.9	5.0 U	0.47 J	0.25 J
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	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	12	11	6.6	6.3	0.44 J	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1	10	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.4	1.0 U	1.0 U	1.0 U	1.0 U	1.9	2.5	12	37	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.53 J	1.0 U	1.0 U	0.23 J	1.0 U	35	43	51	460	1.7	0.30 J
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Vinyl acetate	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	2.0 U	2.0 U
Vinyl chloride	ug/L	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	1.7	2.0	56	160	1.0 U	1.0 U
Xylenes (total)	ug/L	0.99 J	3.0 U	3.0 U	3.0 U	0.70 J	3.0 U	0.83 J	3.0 U	3.0 U	3.0 U	3.0 U	0.71 J	9.4 J	3.0 U	3.0 U
Semi-volatile Organic Compounds																
2,4,6-Trichlorophenol	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
2,4-Dichlorophenol	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
2,4-Dimethylphenol	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
2,4-Dinitrophenol	ug/L	45 U	45 U	45 U	50 U	50 U	50 U	45 U	45 U	45 U	46 U	45 U	45 U	45 U	45 U	50 U
2-Chloronaphthalene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U

Table 3.8

Analytical Results Summary
Fifth Quarter Group A Bedrock Piezometer Sampling
Fourth Quarter 2021 - First Quarter 2022
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:		F2M-09	F2U-02	F2U-04	F6-04	F6-06	F6-11	G1L-11	G1M-06	G1U-01	G6-01	G6-02	G6-04	G6-05	G6-06	G6-07
Sample ID:		F2M-09-1221	F2U-02-1221	F2U-04-1221	F6-04-1221	F6-06-1221	F6-11-1221	G1L-11-1221	G1M-06-1221	G1U-01-1221	G6-01-1221	G6-02-1221	G6-04-1221	G6-05-1221	G6-06-1221	G6-07-1221
Sample Date:		1/10/2022	1/10/2022	1/10/2022	12/15/2021	12/15/2021	12/15/2021	1/11/2022	1/11/2022	1/11/2022	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/10/2021	12/15/2021
Parameters	**Units**															
2-Chlorophenol	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
2-Nitrophenol	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
4,6-Dinitro-2-methylphenol	ug/L	45 U	45 U	45 U	50 U	50 U	50 U	45 U	45 U	45 U	46 U	45 U	45 U	45 U	45 U	50 U
4-Chloro-3-methylphenol	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
4-Nitrophenol	ug/L	45 U	45 U	45 U	50 U	50 U	50 U	45 U	45 U	45 U	46 U	45 U	45 U	45 U	45 U	50 U
Acenaphthene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Acenaphthylene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Anthracene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Benzo(a)anthracene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Benzo(a)pyrene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Benzo(b)fluoranthene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Benzo(g,h,i)perylene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
bis(2-Chloroethoxy)methane	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Butyl benzylphthalate (BBP)	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Chrysene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Dibenz(a,h)anthracene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Diethyl phthalate	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Dimethyl phthalate	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Di-n-butylphthalate (DBP)	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Di-n-octyl phthalate (DnOP)	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	5.9 J	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Fluoranthene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Fluorene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Hexachlorobenzene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Hexachlorobutadiene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Hexachlorocyclopentadiene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Hexachloroethane	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Indeno(1,2,3-cd)pyrene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Isophorone	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Naphthalene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Octachlorocyclopentene	ug/L	4.5 U	4.5 U	4.5 U	5.0 U	5.0 U	5.0 U	4.5 U	4.5 U	4.5 U	4.6 U	4.5 U	4.5 U	4.5 U	4.5 U	5.0 U
Pentachlorophenol	ug/L	45 U	45 U	45 U	50 U	50 U	50 U	45 U	45 U	45 U	46 U	45 U	45 U	45 U	45 U	50 U
Phenanthrene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Phenol	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Pyrene	ug/L	9.1 U	9.1 U	9.1 U	10 U	10 U	10 U	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Organic Acids																
2-Chlorobenzoic acid	ug/L	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	2300	**9200**	30 U	30 U
3-Chlorobenzoic acid	ug/L	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	600	2600	30 U	30 U
4-Chlorobenzoic acid	ug/L	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	4800	**26000**	30 U	30 U
Benzoic acid	ug/L	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	200 U	600 U	100 U	100 U
Chlorendic acid	ug/L	250 U	**390**	**220 J**	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	**130 J**	**470 J**	250 U	250 U
General Chemistry																
Sulfate	ug/L	1480000	145000	106000	547000	1470000	1870000	1440000	929000	74700	79500	76400	173000	987000	856000	884000

Notes:

U	- Not detected at the associated reporting limit
R	-Data rejected
J	- Estimated concentration
J+	- Estimated concentration; result may be biased high
UJ	- Not detected; associated reporting limit is estimated
360	- Value exceeds associated screening level

Table 3.8

Analytical Results Summary
Fifth Quarter Group A Bedrock Piezometer Sampling
Fourth Quarter 2021 - First Quarter 2022
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:		G6-11	H2M-06	H2M-06	H2M-09	H2U-01	H2U-02	H5-02	H5-04	H5-05	H5-05	H5-07	H5-09	I1-01	I1-02	I1-02	I1-04
Sample ID:		G6-11-1221	H2M-06-1221	X7-10-1221	H2M-09-1221	H2U-01-1221	H2U-02-1221	H5-02-1221	H5-04-1221	H5-05-1221	Y7-07-1221	H5-07-121	H5-09-1221	I1-01-1221	I1-02-1221	Z7-10-1221	I1-04-1221
Sample Date:		12/10/2021	12/17/2021	12/17/2021	12/17/2021	12/17/2021	12/17/2021	1/7/2022	1/4/2022	1/4/2022	1/4/2022	1/4/2022	1/4/2022	1/12/2022	1/11/2022	1/11/2022	1/11/2022
				Duplicate							Duplicate					Duplicate	
Parameters	**Units**																
Volatile Organic Compounds																	
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.62 J	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	**0.58 J**	**0.55 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	0.68 J	0.73 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.1	1.2	1.0 U	1.0 U	2.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.39 J	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	2.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.9	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	0.86 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	0.58 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.6	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	0.59 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.3	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	ug/L	1.0 U	0.68 J	0.67 J	8.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	22	1.0 U	1.0 U	1.0 U	1.0 U
3-Chlorotoluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene	ug/L	1.0 U	0.41 J	0.43 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.31 J	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	ug/L	**95**	3.4	3.7	**9.2**	1.0 U	3.9	1.0 U	1.0 U	1.0 U	1.0 U	0.63 J	**31**	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	34	96	130	1.0 U	1.0 U	1.0 U	1.0 U	1.1	1.2	0.88 J	4.5	6.4	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	2.2	2.2	3.8	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	25	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	51	54	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	8.1	8.9	9.3	0.68 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.5	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	6.5	0.85 J	0.76 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.2	1.0 U	1.0 U	1.0 U	1.0 U
m&p-Xylenes	ug/L	37	1.4 J	1.3 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	12	2.0 U	2.0 U	2.0 U	2.0 U
Methylene chloride	ug/L	1.0 U	3.7	4.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m-Monochlorobenzotrifluoride	ug/L	0.30 J	0.31 J	0.33 J	1.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.2	1.0 U	1.0 U	1.0 U	1.0 U
o-Monochlorobenzotrifluoride	ug/L	0.39 J	0.77 J	0.85 J	4.8	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	8.4	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	ug/L	6.3	0.69 J	0.67 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	6.1	1.0 U	1.0 U	1.0 U	1.0 U
p-Monochlorobenzotrifluoride	ug/L	1.2	0.95 J	0.93 J	7.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	11	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	0.33 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.9	3.4	3.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	14	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0	9.1	9.4	0.34 J	1.0 U	0.59 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	6.3	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	**9.9**	**12**	**11**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.56 J	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl acetate	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	1.0 U	**27**	**29**	1.0 U	1.0 U	1.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**6.4**	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	44	2.0 J	1.9 J	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	18	3.0 U	3.0 U	3.0 U	3.0 U
Semi-volatile Organic Compounds																	
2,4,6-Trichlorophenol	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
2,4-Dichlorophenol	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	1.6 J	9.1 U	9.1 U	9.1 U	9.1 U
2,4-Dimethylphenol	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
2,4-Dinitrophenol	ug/L	46 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U
2-Chloronaphthalene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U

Table 3.8

Analytical Results Summary
Fifth Quarter Group A Bedrock Piezometer Sampling
Fourth Quarter 2021 - First Quarter 2022
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:		G6-11	H2M-06	H2M-06	H2M-09	H2U-01	H2U-02	H5-02	H5-04	H5-05	H5-05	H5-07	H5-09	I1-01	I1-02	I1-02	I1-04
Sample ID:		G6-11-1221	H2M-06-1221	X7-10-1221	H2M-09-1221	H2U-01-1221	H2U-02-1221	H5-02-1221	H5-04-1221	H5-05-1221	Y7-07-1221	H5-07-121	H5-09-1221	I1-01-1221	I1-02-1221	Z7-10-1221	I1-04-1221
Sample Date:		12/10/2021	12/17/2021	12/17/2021	12/17/2021	12/17/2021	12/17/2021	1/7/2022	1/4/2022	1/4/2022	1/4/2022	1/4/2022	1/4/2022	1/12/2022	1/11/2022	1/11/2022	1/11/2022
				Duplicate							Duplicate					Duplicate	
Parameters	**Units**																
2-Chlorophenol	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
2-Nitrophenol	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
4,6-Dinitro-2-methylphenol	ug/L	46 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U
4-Chloro-3-methylphenol	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
4-Nitrophenol	ug/L	46 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U
Acenaphthene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Acenaphthylene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Anthracene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Benzo(a)anthracene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Benzo(a)pyrene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Benzo(b)fluoranthene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Benzo(g,h,i)perylene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
bis(2-Chloroethoxy)methane	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Butyl benzylphthalate (BBP)	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Chrysene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Dibenz(a,h)anthracene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Diethyl phthalate	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Dimethyl phthalate	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Di-n-butylphthalate (DBP)	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Di-n-octyl phthalate (DnOP)	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Fluoranthene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Fluorene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Hexachlorobenzene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Hexachlorobutadiene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Hexachlorocyclopentadiene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Hexachloroethane	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Indeno(1,2,3-cd)pyrene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Isophorone	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Naphthalene	ug/L	9.3 U	2.3 J	1.6 J	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Octachlorocyclopentene	ug/L	4.6 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U
Pentachlorophenol	ug/L	46 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U	45 U
Phenanthrene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Phenol	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Pyrene	ug/L	9.3 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Organic Acids																	
2-Chlorobenzoic acid	ug/L	30 U	500	500	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	29 J	30 U	30 U	30 U	30 U
3-Chlorobenzoic acid	ug/L	30 U	110	110	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	ug/L	30 U	68	68	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U
Benzoic acid	ug/L	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	ug/L	250 U	250 U	250 U	250 U	250 U	190 J	250 U	250 U	250 U	250 U	250 U	120 J	250 U	250 U	250 U	250 U
General Chemistry																	
Sulfate	ug/L	1530000	1550000	1540000	1550000	173000	246000	138000	987000	1520000	1500000	1790000	1430000	450000	313000	309000	661000

Notes:

U	- Not detected at the associated reporting limit
R	-Data rejected
J	- Estimated concentration
J+	- Estimated concentration; result may be biased high
UJ	- Not detected; associated reporting limit is estimated
360	- Value exceeds associated screening level

Table 3.8

Analytical Results Summary
Fifth Quarter Group A Bedrock Piezometer Sampling
Fourth Quarter 2021 - First Quarter 2022
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:		I1-07	J6-02	J6-04	J6-05	J6-07	J6-11
Sample ID:		I1-07-1221	J6-02-1221	J6-04-1221	J6-05-1221	J6-07-1221	J6-11-1221
Sample Date:		1/11/2022	12/20/2021	12/20/2021	12/20/2021	12/20/2021	12/20/2021
Parameters	**Units**						
Volatile Organic Compounds							
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.24 J	1.0 U
2-Chlorotoluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	2.1	1.0 U
3-Chlorotoluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	96
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	1.0 U	1.4	1.0 U	1.0 U	3.9	13
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	4.0	1.0 U	1.0 U	1.0 U	4.2	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	0.55 J	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.58 J	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.9
m&p-Xylenes	ug/L	2.0 U	0.24 J	2.0 U	2.0 U	2.0 U	3.4
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m-Monochlorobenzotrifluoride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.23 J	1.0 U
o-Monochlorobenzotrifluoride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.50 J	1.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.6
p-Monochlorobenzotrifluoride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	0.94 J	1.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	0.22 J	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl acetate	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	3.0 U	0.24 J	3.0 U	3.0 U	3.0 U	9.0
Semi-volatile Organic Compounds							
2,4,6-Trichlorophenol	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
2,4-Dichlorophenol	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
2,4-Dimethylphenol	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
2,4-Dinitrophenol	ug/L	45 U	R	R	R	R	R
2-Chloronaphthalene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U

Table 3.8

Analytical Results Summary
Fifth Quarter Group A Bedrock Piezometer Sampling
Fourth Quarter 2021 - First Quarter 2022
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:		I1-07	J6-02	J6-04	J6-05	J6-07	J6-11
Sample ID:		I1-07-1221	J6-02-1221	J6-04-1221	J6-05-1221	J6-07-1221	J6-11-1221
Sample Date:		1/11/2022	12/20/2021	12/20/2021	12/20/2021	12/20/2021	12/20/2021
Parameters	**Units**						
2-Chlorophenol	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
2-Nitrophenol	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
4,6-Dinitro-2-methylphenol	ug/L	45 U	45 U	45 U	45 U	45 U	45 U
4-Chloro-3-methylphenol	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
4-Nitrophenol	ug/L	45 U	45 U	45 U	45 U	45 U	45 U
Acenaphthene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Acenaphthylene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Anthracene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Benzo(a)anthracene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Benzo(a)pyrene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Benzo(b)fluoranthene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Benzo(g,h,i)perylene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
bis(2-Chloroethoxy)methane	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Butyl benzylphthalate (BBP)	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Chrysene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Dibenz(a,h)anthracene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Diethyl phthalate	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Dimethyl phthalate	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Di-n-butylphthalate (DBP)	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Di-n-octyl phthalate (DnOP)	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Fluoranthene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Fluorene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Hexachlorobenzene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Hexachlorobutadiene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Hexachlorocyclopentadiene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Hexachloroethane	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Indeno(1,2,3-cd)pyrene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Isophorone	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Naphthalene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Octachlorocyclopentene	ug/L	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U
Pentachlorophenol	ug/L	45 U	45 U	45 U	45 U	45 U	45 U
Phenanthrene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Phenol	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Pyrene	ug/L	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Organic Acids							
2-Chlorobenzoic acid	ug/L	11 J	30 U	30 U	30 U	30 U	30 U
3-Chlorobenzoic acid	ug/L	30 U	30 U	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	ug/L	30 U	30 U	30 U	30 U	30 U	30 U
Benzoic acid	ug/L	100 U	100 U	100 U	100 U	100 U	100 U
Chlorendic acid	ug/L	**71 J**	250 U	250 U	250 U	250 U	250 U
General Chemistry							
Sulfate	ug/L	1340000	170000	214000	199000	1420000	1430000

Notes:

U	- Not detected at the associated reporting limit
R	-Data rejected
J	- Estimated concentration
J+	- Estimated concentration; result may be biased high
UJ	- Not detected; associated reporting limit is estimated
360	- Value exceeds associated screening level

Table 3.9

2021 Analytical Results Summary
Annual Bedrock Open Catch Basin
Hyde Park Landfill Site
Town of Niagara, New York

	Sample Location:	**BR-OpenCatchBasin**
	Sample ID:	**HPOPENCB-1121**
	Sample Date:	**11/04/2021**
Parameters	**Units**	
Organic Acids		
2-Chlorobenzoic acid	µg/L	30 U
3-Chlorobenzoic acid	µg/L	30 U
4-Chlorobenzoic acid	µg/L	30 U
Benzoic acid	µg/L	100 U
Chlorendic acid	µg/L	160 J

Notes:

J - Estimated concentration

U - Not detected at the associated reporting limit

Table 3.10

Analytical Results Summary
5-Year Bloody Run Monitoring Well Sampling
October 2021
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:			BR-1	BR-2	BR-3	BR-4
Sample ID:			BR-1-1021	BR-2-1021	BR-3-1021	BR-4-1021
Sample Date:			10/27/2021	10/27/2021	10/27/2021	10/27/2021
Parameters	**Units**	**Screening Level**				
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/L	200	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	0.053	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	5	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	800	1.0 U	100	0.29 J	1.0 U
1,1-Dichloroethene	µg/L	7	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	70	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	600	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	5	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	5	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	180	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	75	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	120	1.0 U	0.22 J	1.0 U	1.0 U
3-Chlorotoluene	µg/L	120	1.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene	µg/L	120	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	5	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	80	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	80	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	8.5	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	1000	1.0 U	4.8	1.0 U	1.0 U
Carbon tetrachloride	µg/L	5	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	100	1.0 U	1.0 U	1.0 U	0.61 J
Chloroethane	µg/L	3.6	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	80	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	190	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	70	0.68 J	0.90 J	1.0 U	1.7
cis-1,3-Dichloropropene	µg/L	0.44	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	350	1.0 U	0.25 J	1.0 U	1.0 U
Ethylbenzene	µg/L	700	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	30	1.0 U	1.0 U	1.0 U	1.0 U
m-Monochlorobenzotrifluoride	µg/L	5	1.0 U	1.0 U	1.0 U	1.0 U
o-Monochlorobenzotrifluoride	µg/L	50	1.0 U	1.0 U	1.0 U	1.0 U
p-Monochlorobenzotrifluoride	µg/L	50	1.0 U	0.24 J	1.0 U	1.0 U
Styrene	µg/L	NA	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	5	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1000	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	100	1.0 U	0.25 J	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	0.44	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	5	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	µg/L	NA	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl acetate	µg/L	NA	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	µg/L	2	0.34 J	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	10000	3.0 U	3.0 U	3.0 U	3.0 U

Table 3.10

Analytical Results Summary
5-Year Bloody Run Monitoring Well Sampling
October 2021
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:			**BR-1**	**BR-2**	**BR-3**	**BR-4**
Sample ID:			**BR-1-1021**	**BR-2-1021**	**BR-3-1021**	**BR-4-1021**
Sample Date:			**10/27/2021**	**10/27/2021**	**10/27/2021**	**10/27/2021**
Parameters	**Units**	**Screening Level**				
Organic Acids						
2-Chlorobenzoic acid	µg/L	7300	30 U	30 U	30 U	30 U
3-Chlorobenzoic acid	µg/L	7300	30 U	30 U	30 U	30 U
4-Chlorobenzoic acid	µg/L	7300	30 U	30 U	30 U	30 U
Benzoic acid	µg/L	150000	100 U	100 U	100 U	100 U
Chlorendic acid	µg/L	50	250 U	**120 J**	**140 J**	**290**
General Chemistry						
Sulfate	mg/L	NA	224	293	278	209

Notes:

mg/L - Milligrams per liter
µg/L - Micrograms per liter
J - Estimated concentration
U - Not detected at the associated reporting limit
290 Value exceeds associated screening level

Table 3.11

2021 Analytical Results Summary
Annual AFW Composite
Hyde Park Landfill Site
Town of Niagara, New York

		Sample Location:	AFWCOMPOSITE
		Sample ID:	AFW-C-1121
		Sample Date:	3/18/2022
Parameters	**Units**	**Reporting Level**	
Polychlorinated Biphenyls (PCBs)			
Pentachlorobiphenyl	µg/L	1	0.000938 J
Tetrachlorobiphenyl	µg/L	1	0.002560 J
Trichlorobiphenyl	µg/L	1	0.005300 J
Pesticides			
alpha-BHC	µg/L	1	0.063
beta-BHC	µg/L	1	0.045 U
delta-BHC	µg/L	1	0.083
gamma-Chlordane	µg/L	1	0.081
Mirex	µg/L	1	0.045 U
Dioxin Furans			
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	500	5.06 U

Notes:

BHC - Benzene Hexachloride
pg/L - Picograms per liter
µg/L - Micrograms per liter
J - Estimated concentration
U - Not detected at the associated reporting limit

Table 3.12

2021 Quarterly Hydraulic Gradient Summary
Community Monitoring Program
Hyde Park Landfill Site
Town of Niagara, New York

Gradient Pairing		3/16/2021			6/1/2021			9/2/2021			12/3/2021		
Overburden	Bedrock	Overburden Elevation (ft. AMSL)	Bedrock Elevation (ft. AMSL)	Gradient (ft./ft.)	Overburden Elevation (ft. AMSL)	Bedrock Elevation (ft. AMSL)	Gradient (ft./ft.)	Overburden Elevation (ft. AMSL)	Bedrock Elevation (ft. AMSL)	Gradient (ft./ft.)	Overburden Elevation (ft. AMSL)	Bedrock Elevation (ft. AMSL)	Gradient (ft./ft.)
CMW-1OB	CMW-1SH	571.29	563.98	0.665	571.32	563.93	0.672	571.24	563.02	0.747	572.02	564.46	0.687
CMW-2OB	CMW-2SH	589.92	572.79	1.198	586.61	573.97	0.884	584.98	572.93	0.843	589.69	575.98	0.959
CMW-3OB	CMW-3SH	571.83	554.30	1.252	573.53	554.02	1.394	573.35	553.90	1.389	576.56	554.91	1.546
CMW-4OB	CMW-4SH	574.28*	566.96	0.620	574.03	566.98	0.597	573.30	566.59	0.569	572.99	567.83	0.437
CMW-5OB	CMW-5SH	578.35	575.97	0.151	579.05	575.50	0.225	579.53	575.02	0.285	580.68	576.84	0.243
CMW-6OB	CMW-6SH	571.76	562.45	0.970	571.70	562.10	1.000	571.69	561.55	1.056	571.71	561.86	1.026
CMW-7OB	CMW-7SH	606.61	598.22	0.587	606.15(2)	598.01	0.569	606.19(2)	597.96	0.576	606.13(2)	599.39	0.471
CMW-8OB	CMW-8SH	612.83(1)	608.60	0.407	612.82(1)	607.04	0.556	612.84(1)	607.23	0.539	612.82(1)	610.46	0.227
CMW-9OB	CMW-9SH	569.18(4)	559.87	1.790	569.12(4)	559.82	1.788	569.24	560.01	1.775	569.16(4)	560.26	1.712
CMW-11OB	CMW-11SH	569.96	565.36	0.479	568.93	565.03	0.406	568.93	564.75	0.435	570.03	565.36	0.486
CMW-12OB	CMW-12SH	586.83	572.40	0.768	584.27	575.16	0.485	578.60	574.13	0.238	590.35	577.50	0.684

Notes:

ft. AMSL - Feet Above Mean Sea Level
ft./ft. - Feet per foot
NA - Not applicable
- Negative number indicates an upward vertical gradient. Positive number indicates a downward vertical gradient.
* - Well full of water to top of casing (surcharged). Overburden groundwater elevation indicated is the well reference elevation.
-(1) - Well CMW-8OB was recorded as dry during this event. Bottom of well depth (sounded during monitoring event) was used to calculate gradient.
-(2) - Well CMW-7OB was recorded as dry during this event. Bottom of well depth (sounded during monitoring event) was used to calculate gradient.
-(3) - Well CMW-11OB was recorded as dry during this event. Bottom of well depth (sounded during monitoring event) was used to calculate gradient.
-(4) - Well CMW-9OB was recorded as dry during this event. Bottom of well depth (sounded during monitoring event) was used to calculate gradient.

Table 3.13

2021 Community Monitoring Well Soil Vapor Monitoring
Community Monitoring Program
Hyde Park Landfill Site
Town of Niagara, New York

August 27, 2021
77°F

Well I.D.	Time Intervals	Sampling Time (hhmm)	VOC Readings (ppmv)
SVP-1	Background	1252	0
	At 1 minute	1253	0
	At 2 minutes	1254	0
	At 3 minutes	1255	0
	At 4 minutes	1256	0
	At 5 minutes	1257	0
	At 6 minutes	1258	0
	At 7 minutes	1259	0
	At 8 minutes	1300	0
	At 9 minutes	1301	0
	At 10 minutes	1302	0
SVP-2	Background	1237	0
	At 1 minute	1238	0
	At 2 minutes	1239	0
	At 3 minutes	1240	0
	At 4 minutes	1241	0
	At 5 minutes	1242	0
	At 6 minutes	1243	0
	At 7 minutes	1244	0
	At 8 minutes	1245	0
	At 9 minutes	1246	0
	At 10 minutes	1247	0
SVP-3	Background	1227	0
	At 1 minute	1228	0
	At 2 minutes	1229	0
	At 3 minutes	1230	0
	At 4 minutes	1231	0
	At 5 minutes	1232	0
	At 6 minutes	1233	0
	At 7 minutes	1234	0
	At 8 minutes	1235	0
	At 9 minutes	1236	0
	At 10 minutes	1237	0
SVP-4	Background	1217	0
	At 1 minute	1218	0
	At 2 minutes	1219	0
	At 3 minutes	1220	0
	At 4 minutes	1221	0
	At 5 minutes	1222	0
	At 6 minutes	1223	0
	At 7 minutes	1224	0
	At 8 minutes	1225	0
	At 9 minutes	1226	0
	At 10 minutes	1227	0

Table 3.13

2021 Community Monitoring Well Soil Vapor Monitoring
Community Monitoring Program
Hyde Park Landfill Site
Town of Niagara, New York

August 27, 2021
77°F

Well I.D.	Time Intervals	Sampling Time (hhmm)	VOC Readings (ppmv)
CMW-7OB	Background	1202	0
	At 1 minute	1203	0
	At 2 minutes	1204	0
	At 3 minutes	1205	0
	At 4 minutes	1206	0
	At 5 minutes	1207	0
	At 6 minutes	1208	0
	At 7 minutes	1209	0
	At 8 minutes	1210	0
	At 9 minutes	1211	0
	At 10 minutes	1212	0
CMW-8OB	Background	1143	0
	At 1 minute	1144	0
	At 2 minutes	1145	0
	At 3 minutes	1146	0
	At 4 minutes	1147	0
	At 5 minutes	1148	0
	At 6 minutes	1149	0
	At 7 minutes	1150	0
	At 8 minutes	1151	0
	At 9 minutes	1152	0
	At 10 minutes	1153	0

Notes:

ppmv - Parts per million by volume
VOC - Volatile Organic Compound
MPH - Miles per hour
°F - Degrees Fahrenheit

Table 4.1

2021 NAPL Decanter Volume Monitoring
Hyde Park Landfill Site
Town of Niagara, New York

	Decanter #1	Decanter #2	Decanter #3
First Quarter 2021			
March 16, 2021			
Thickness (feet)	23.0	5.3	5.53
Level (%)	51	25	32
Volume[1] (gallons)	5,712.00	2,800.00	3,584.00
Second Quarter 2021			
June 1, 2021			
Thickness (feet)	25.70	6.80	5.65
Level (%)	48	25	33
Volume[1] (gallons)	5,376.00	2,800.00	3,696.00
Third Quarter 2021			
September 2, 2021			
Thickness (feet)	23.20	5.90	4.85
Level (%)	46	25	32
Volume[1] (gallons)	5,152.00	2,800.00	3,584.00
Fourth Quarter 2021			
December 9, 2021			
Thickness (feet)	15.20	5.65	4.15
Level (%)	19	23	19
Volume[1] (gallons)	2,128.00	2,576.00	2,128.00

Notes:

(1) - Based on level percentage of NAPL in 11,200-gallon decanters
NAPL - Non-Aqueous Phase Liquid

Table 4.2

2021 Weekly Carbon Interstage APL Sampling
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:		HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01
Sample ID:		HP 1621 INT-D	HP 11321 INT-D	HP 12021 INT-D	HP 12721 INT-D	HP 2321 INT-D	HP 21021 INT-D	HP 21721 INT-D	HP 22424 INT-D	HP 3321 INT-D	HP 31021 INT-D	HP 31721 INT-D	HP 32421 INT-D
Sample Date:		1/6/2021	1/13/2021	1/20/2021	1/27/2021	2/3/2021	2/10/2021	2/17/2021	2/24/2021	3/3/2021	3/10/2021	3/17/2021	3/24/2021
Parameters	**Units**												
Volatile Organic Compounds													
1,1,1-Trichloroethane	ug/L	1.0 U	0.30 J	1.0 U	1.0 U	0.24 J	1.0 U	0.24 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	4.5	4.5	3.1	4.8	4.2	2.3	3.8	3.3	2.7	3.2	2.7	3.1
1,1,2-Trichloroethane	ug/L	1.0 J	1.2	0.78 J	0.96 J	1.1	0.71 J	1.2	0.82 J	0.52 J	0.63 J	0.67 J	0.71 J
1,1-Dichloroethane	ug/L	0.87 J	2.1	0.96 J	1.1	1.2	1.4	1.8	1.4	0.64 J	0.60 J	1.1	1.0
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	0.59 J	1.0 U	0.62 J	0.72 J	0.61 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.6	1.3	1.5	1.5	1.2	0.83 J	0.85 J	0.83 J	0.96 J	1.1	0.76 J	0.80 J
1,2-Dichloroethane	ug/L	3.1	7.0	2.4	3.9	4.0	4.7	6.3	4.8	2.1	2.1	3.5	3.6
1,2-Dichloropropane	ug/L	0.43 J	0.91 J	0.62 J	0.65 J	0.59 J	0.66 J	1.0	1.0	0.36 J	0.45 J	0.61 J	0.66 J
1,3-Dichlorobenzene	ug/L	0.35 J	0.24 J	0.27 J	0.28 J	0.24 J	0.20 J	1.0 U	1.0 U	1.0 U	0.21 J	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0	0.74 J	1.0	0.91 J	0.68 J	0.47 J	0.46 J	0.42 J	0.50 J	0.67 J	0.44 J	0.45 J
2-Chlorotoluene	ug/L	26	24	26	27	20	15	15	14	16	18	13	14
3-Chlorotoluene	ug/L	0.23 J	1.0 U	1.0 U	0.22 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene	ug/L	9.4	7.8	9.2	8.8	6.5	4.9	4.6	4.2	5.4	6.0	4.3	4.5
Benzene	ug/L	100	170	120	140	130	130	170	140	87	98	120	130
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	0.43 J	9.3	0.62 J	5.5	8.6	6.7	16	9.8	4.5	3.5	6.3	6.9
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	66	65	67	76	59	46	51	47	48	57	44	47
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	5.1	8.8	2.6	5.0	4.8	3.9	6.1	5.2	3.3	4.8	3.9	4.1
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	3.1	3.4	2.4	2.7	2.5	2.3	2.6	2.2	1.9	2.5	2.0	2.3
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	17	15	17	18	13	10	11	10	11	12	9.5	10
m&p-Xylenes	ug/L	30	25	20	29	22	13	16	14	16	17	13	13
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m-Monochlorobenzotrifluoride	ug/L	3.6	3.0	3.6	3.8	2.9	2.2	2.2	2.2	2.3	2.4	2.1	2.1
o-Monochlorobenzotrifluoride	ug/L	12	9.7	11	12	10	7.8	8.1	6.9	8.0	8.1	7.0	7.4
o-Xylene	ug/L	27	25	27	29	22	16	17	17	17	19	15	16
p-Monochlorobenzotrifluoride	ug/L	11	8.9	11	12	8.7	6.6	7.0	6.6	7.8	7.7	5.7	6.2
Styrene	ug/L	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	0.58 J	1.0 U	1.0 U
Tetrachloroethene	ug/L	0.24 J	1.0 U	1.0 U	0.24 J	0.23 J	1.0 U	0.24 J	1.0 U	0.25 J	0.21 J	1.0 U	1.0 U
Toluene	ug/L	7.5	7.7	3.2	5.9	4.4	2.9	6.7	3.6	3.6	3.5	2.7	2.6
trans-1,2-Dichloroethene	ug/L	15	26 J	18	21	19	19	26	20	12	16	18	19
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	9.9	9.0	7.7	9.1	8.0	6.5	8.2	7.2	6.6	7.7	6.8	7.7
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl acetate	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	ug/L	6.8	8.2	4.9	4.8	4.2	1.0 U	4.0	3.5	3.0	4.8	1.0 U	3.8
Xylenes (total)	ug/L	57	50	48	58	44	30	34	31	33	37	27	29

Notes:

J - Estimated concentration.

U - Not detected at the associated reporting limit.

µg/L - Micrograms per liter

Table 4.2

2021 Weekly Carbon Interstage APL Sampling
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:		HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01	HP-INTER-D-01
Sample ID:		HP 33121 INT-D	HP 4721 INT-D	HP 41421 INT-D	HP 42121 INT-D	HP 42821 INT-D	HP 91621 INT-D	HP 10621 INT-D	HP 122221 INT-D	HP 123121 INT-D
Sample Date:		3/31/2021	4/7/2021	4/14/2021	4/21/2021	4/28/2021	9/16/2021	10/6/2021	12/22/2021	12/31/2021
Parameters	**Units**									
Volatile Organic Compounds										
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	2.9	2.8	2.6	2.1	0.91 J	0.50 J	2.0 U	2.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	0.83 J	0.56 J	0.49 J	0.50 J	0.42 J	2.0 U	2.0 U	2.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0	0.61 J	0.65 J	0.60 J	1.1	3.2	2.9	1.2 J	0.79 J
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	0.47 J	0.53 J	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	0.78 J	0.80 J	0.70 J	0.74 J	0.58 J	0.42 J	0.49 J	2.0 U	0.29 J
1,2-Dichloroethane	ug/L	3.4	2.4	2.1	2.1	4.0	8.6	5.3	2.0 U	1.4
1,2-Dichloropropane	ug/L	0.71 J	0.42 J	0.50 J	0.44 J	0.73 J	1.5 J	1.4 J	0.62 J	0.42 J
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	0.46 J	0.41 J	0.44 J	0.41 J	0.29 J	2.0 U	2.0 U	2.0 U	0.26 J
2-Chlorotoluene	ug/L	13	13	13	12	9.6	8.1	7.7	4.4	5.3
3-Chlorotoluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
4-Chlorotoluene	ug/L	4.3	4.6	4.2	4.1	3.0	2.6	2.4	1.4 J	1.8
Benzene	ug/L	130	96	97	87	120	220	200	110	88
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
Carbon disulfide	ug/L	8.7	5.6	11	7.8	11	4.3	3.8	2.3	12
Carbon tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
Chlorobenzene	ug/L	46	46	44	44	35	45	39	26	29
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	4.0	3.8	3.4	3.1	2.5	4.2	2.8	0.88 J	1.6
Chloromethane (Methyl chloride)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	2.2	2.0	2.2	2.3	1.9	2.5	1.4 J	2.0 U	1.0
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
Ethylbenzene	ug/L	9.8	9.7	9.6	9.0	7.4	6.7	5.6	3.5	4.1
m&p-Xylenes	ug/L	12	12	12	11	5.7	9.7	8.7	5.7	6.3
Methylene chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.8 J	2.0 U	2.0 U	1.0 U
m-Monochlorobenzotrifluoride	ug/L	1.9	2.0	2.0	2.0	1.4	0.91 J	1.1 J	0.56 J	0.67 J
o-Monochlorobenzotrifluoride	ug/L	7.2	7.3	6.8	7.0	5.0	3.5	3.5	1.8 J	2.3
o-Xylene	ug/L	16	16	15	15	11	9.9	9.1	5.6	6.2
p-Monochlorobenzotrifluoride	ug/L	5.8	6.1	6.1	6.1	3.6	2.5	2.4	1.4 J	1.8
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
Toluene	ug/L	2.8	2.5	2.5	2.3	1.7	21	19	6.6	5.3
trans-1,2-Dichloroethene	ug/L	19	15	16	14	20	37	28	10	8.3
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
Trichloroethene	ug/L	7.0	6.1	6.5	6.0	5.5	0.90 J	0.79 J	2.0 U	0.37 J
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
Vinyl acetate	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	4.0 U	4.0 U	2.0 U
Vinyl chloride	ug/L	3.9	3.6	4.8	5.5	3.0	11	7.0	7.4	23
Xylenes (total)	ug/L	28	28	27	26	17	20	18	11	13

Notes:

J - Estimated concentration.

U - Not detected at the associated reporting limit.

µg/L - Micrograms per liter

Table 4.3

2021 Quarterly Leachate Feed APL Sampling
Hyde Park Landfill Site
Town of Niagara, New York

	Sample Location:	PMPTKOUTLET	PMPTKOUTLET	PMPTKOUTLET
	Sample ID:	HP 32321 INF	HP 123121 INF	HP 123121 INF
	Sample Date:	03/23/2021	12/31/2021	01/12/2022
Parameters	**Units**			
Volatile Organic Compounds				
1,1,1-Trichloroethane	µg/L	4.1 J	NA	5.0 U
1,1,2,2-Tetrachloroethane	µg/L	74	NA	40
1,1,2-Trichloroethane	µg/L	8.8 J	NA	4.7 J
1,1-Dichloroethane	µg/L	10 U	NA	5.0 U
1,1-Dichloroethene	µg/L	2.6 J	NA	5.0 U
1,2,4-Trichlorobenzene	µg/L	710	NA	340
1,2-Dichlorobenzene	µg/L	87	NA	38
1,2-Dichloroethane	µg/L	14	NA	17
1,2-Dichloropropane	µg/L	10 U	NA	5.0 U
1,3-Dichlorobenzene	µg/L	24	NA	16
1,4-Dichlorobenzene	µg/L	120	NA	56
2-Chlorotoluene	µg/L	980	NA	440
3-Chlorotoluene	µg/L	12	NA	4.9 J
4-Chlorotoluene	µg/L	730	NA	310
Benzene	µg/L	210	NA	61
Bromodichloromethane	µg/L	10 U	NA	5.0 U
Bromoform	µg/L	10 U	NA	5.0 U
Bromomethane (Methyl bromide)	µg/L	10 U	NA	5.0 U
Carbon disulfide	µg/L	12	NA	4.4 J
Carbon tetrachloride	µg/L	26	NA	6.0
Chlorobenzene	µg/L	670	NA	290
Chloroethane	µg/L	10 U	NA	5.0 U
Chloroform (Trichloromethane)	µg/L	300	NA	120
Chloromethane (Methyl chloride)	µg/L	10 U	NA	1.5 J
cis-1,2-Dichloroethene	µg/L	340	NA	120
cis-1,3-Dichloropropene	µg/L	10 U	NA	5.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	10 U	NA	5.0 U
Ethylbenzene	µg/L	230	NA	92
m&p-Xylenes	µg/L	830	NA	310
Methylene chloride	µg/L	29	NA	16
m-Monochlorobenzotrifluoride	µg/L	98	NA	35
o-Monochlorobenzotrifluoride	µg/L	260	NA	95
o-Xylene	µg/L	420	NA	170
p-Monochlorobenzotrifluoride	µg/L	380	NA	130
Styrene	µg/L	10 U	NA	5.0 U
Tetrachloroethene	µg/L	230	NA	170
Toluene	µg/L	1100	NA	380
trans-1,2-Dichloroethene	µg/L	7.3 J	NA	3.0 J
trans-1,3-Dichloropropene	µg/L	10 U	NA	5.0 U
Trichloroethene	µg/L	590	NA	150
Trichlorofluoromethane (CFC-11)	µg/L	4.1 J	NA	1.3 J
Vinyl acetate	µg/L	20 U	NA	10 U
Vinyl chloride	µg/L	88	NA	18
Xylenes (total)	µg/L	1300	NA	480

Table 4.3

2021 Quarterly Leachate Feed APL Sampling
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:		**PMPTKOUTLET**	**PMPTKOUTLET**	**PMPTKOUTLET**
Sample ID:		**HP 32321 INF**	**HP 123121 INF**	**HP 123121 INF**
Sample Date:		**03/23/2021**	**12/31/2021**	**01/12/2022**
Parameters	**Units**			
Semi-volatile Organic Compounds				
2,4,6-Trichlorophenol	µg/L	2.8 J	2.7	NA
2,4-Dichlorophenol	µg/L	140 J	1.3	NA
2,4-Dimethylphenol	µg/L	2.0 J	2.4	NA
Semi-volatile Organic Compounds (Continued)				
2,4-Dinitrophenol	µg/L	45 UJ	8.3	NA
2-Chlorobenzoic acid	µg/L	2800	4500 U	NA
2-Chloronaphthalene	µg/L	9.1 UJ	4.1	NA
2-Chlorophenol	µg/L	6.1 J	1.6 J	NA
2-Nitrophenol	µg/L	9.1 UJ	97	NA
3-Chlorobenzoic acid	µg/L	1400	45000 U	NA
4,6-Dinitro-2-methylphenol	µg/L	45 UJ	2.4 J	NA
4-Chloro-3-methylphenol	µg/L	9.1 UJ	45 U	NA
4-Chlorobenzoic acid	µg/L	2800	9100 U	NA
4-Nitrophenol	µg/L	45 UJ	9.1 U	NA
Acenaphthene	µg/L	9.1 UJ	6.0 J	NA
Acenaphthylene	µg/L	9.1 UJ	9.1 U	NA
Anthracene	µg/L	9.1 UJ	45 U	NA
Benzo(a)anthracene	µg/L	9.1 UJ	2.4 J	NA
Benzo(a)pyrene	µg/L	9.1 UJ	45 U	NA
Benzo(b)fluoranthene	µg/L	9.1 UJ	9.1 U	NA
Benzo(g,h,i)perylene	µg/L	9.1 UJ	9.1 U	NA
Benzoic acid	µg/L	4900	160000	NA
bis(2-Chloroethoxy)methane	µg/L	9.1 UJ	9.1 U	NA
bis(2-Ethylhexyl)phthalate (DEHP)	µg/L	9.1 UJ	9.1 U	NA
Butyl benzylphthalate (BBP)	µg/L	9.1 UJ	9.1 U	NA
Chlorendic acid	µg/L	4300	9100 U	NA
Chrysene	µg/L	9.1 UJ	9.1 U	NA
Dibenz(a,h)anthracene	µg/L	9.1 UJ	9.1 U	NA
Diethyl phthalate	µg/L	9.1 UJ	9.1 U	NA
Dimethyl phthalate	µg/L	1.7 J	9.1 U	NA
Di-n-butylphthalate (DBP)	µg/L	9.1 UJ	9.1 U	NA
Di-n-octyl phthalate (DnOP)	µg/L	9.1 UJ	9.1 U	NA
Fluoranthene	µg/L	9.1 UJ	9.1 U	NA
Fluorene	µg/L	9.1 UJ	9.1 U	NA
Hexachlorobenzene	µg/L	6.1 J	9.1 U	NA
Hexachlorobutadiene	µg/L	21 J	9.1 U	NA
Hexachlorocyclopentadiene	µg/L	9.1 UJ	9.1 U	NA
Hexachloroethane	µg/L	10 J	9.1 U	NA
Indeno(1,2,3-cd)pyrene	µg/L	9.1 UJ	9.1 U	NA
Isophorone	µg/L	9.1 UJ	3.0 J	NA
Naphthalene	µg/L	1.5 J	12	NA
Octachlorocyclopentene	µg/L	4.5 UJ	9.1 U	NA
Pentachlorophenol	µg/L	45 UJ	2.5 J	NA
Phenanthrene	µg/L	9.1 UJ	9.1 U	NA
Phenol	µg/L	820 J	9.1 U	NA
Pyrene	µg/L	9.1 UJ	9.1 U	NA

Notes:

NA - Not analyzed
J - Estimated concentration.
U - Not detected at the associated reporting limit.
µg/L - Micrograms per liter

Table 4.4

2021 Quarterly Sac Bed Interstage APL Sampling
Hyde Park Landfill Site
Town of Niagara, New York

Sample Location:		**SAC INTERSTAGE**
Sample ID:		**HP 32321 SAC**
Sample Date:		**03/23/2021**
Parameters	**Units**	
Polychlorinated Biphenyls (PCB)		
Pentachlorobiphenyl	µg/L	0.43 J
Tetrachlorobiphenyl	µg/L	0.65 J
Trichlorobiphenyl	µg/L	0.13 J
Total PCBs	µg/L	1.21 J
Dioxin Furans		
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	pg/L	2250 J

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit
pg/L - Picograms per liter
µg/L - Micrograms per liter

Appendices

Appendix A

Institutional and Engineering Controls Certification Form

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Environmental Remediation
625 Broadway, 11th Floor, Albany, NY 12233-7020
P: (518)402-9543 | F: (518)402-9547
www.dec.ny.gov

2/15/2022

Joseph Branch
Project Manager
OXY-Glenn Springs Holdings, Inc.
7601 Old Channel Trail
Montague, MI 49437
Joseph_Branch@oxy.com

Re: Reminder Notice: Site Management Periodic Review Report and IC/EC Certification Submittal
Site Name: Hooker-Hyde Park Landfill
Site No.: 932021
Site Address: 4825 Hyde Park Boulevard
Town Of Niagara, NY 14305

Dear Joseph Branch:

This letter serves as a reminder that sites in active Site Management (SM) require the submittal of a periodic progress report. This report, referred to as the Periodic Review Report (PRR), must document the implementation of, and compliance with, site-specific SM requirements. Section 6.3(b) of DER-10 *Technical Guidance for Site Investigation and Remediation* (available online at http://www.dec.ny.gov/regulations/67386.html) provides guidance regarding the information that must be included in the PRR. Further, if the site is comprised of multiple parcels, then you as the Certifying Party must arrange to submit one PRR for all parcels that comprise the site. The PRR must be received by the Department no later than **April 30, 2022**. Guidance on the content of a PRR is enclosed.

Site Management is defined in regulation (6 NYCRR 375-1.2(at)) and in Chapter 6 of DER-10. Depending on when the remedial program for your site was completed, SM may be governed by multiple documents (e.g., Operation, Maintenance, and Monitoring Plan; Soil Management Plan) or one comprehensive Site Management Plan.

A Site Management Plan (SMP) may contain one or all of the following elements, as applicable to the site: a plan to maintain institutional controls and/or engineering controls ("IC/EC Plan"); a plan for monitoring the performance and effectiveness of the selected remedy ("Monitoring Plan"); and/or a plan for the operation and maintenance of the selected remedy ("O&M Plan"). Additionally, the technical requirements for SM are stated in the decision document (e.g., Record of Decision) and, in some cases, the legal agreement directing the remediation of the site (e.g., order on consent, voluntary agreement, etc.).

When you submit the PRR (by the due date above), include the enclosed forms documenting that all SM requirements are being met. The Institutional Controls (ICs) portion of the form (Box 6) must be signed by you or your designated representative. The Engineering Controls (ECs) portion of the form (Box 7) must be signed by a Professional Engineer (PE). If you cannot certify that all SM requirements are being met, you must submit a Corrective Measures Work Plan that identifies the actions to be taken to restore compliance. The work plan must include a schedule to be approved by the Department. The Periodic Review process will not be considered complete until all necessary corrective measures are completed and all required controls are certified. Instructions for completing the certifications are enclosed.

All site-related documents and data, including the PRR, must be submitted in electronic format to the Department of Environmental Conservation. The required format for documents is an Adobe PDF file with optical character recognition and no password protection. Data must be submitted as an electronic data deliverable (EDD) according to the instructions on the following webpage:

https://www.dec.ny.gov/chemical/62440.html

Documents may be submitted to the project manager either through electronic mail or by using the Department's file transfer service at the following webpage:

https://fts.dec.state.ny.us/fts/

The Department will not approve the PRR unless all documents and data generated in support of the PRR have been submitted using the required formats and protocols.

You may contact Andrew Zwack, the Project Manager, at 716-851-7284 or andrew.zwack@dec.ny.gov with any questions or concerns about the site. Please notify the project manager before conducting inspections or field work. You may also write to the project manager at the following address:

New York State Department of Environmental Conservation
270 Michigan Ave

Buffalo, NY 14203-2915

Enclosures

PRR General Guidance
Certification Form Instructions
Certification Forms

ec: w/ enclosures
Andrew Zwack, Project Manager
Stanley Radon, Hazardous Waste Remediation Supervisor, Region 9

GHD - John Pentilchuk - john.pentilchuk@ghd.com
GHD - Margaret Popek - margaret.popek@ghd.com

The following parcel owner did not receive an ec:
Niagara Mohawk Power Corp - Parcel Owner
Occidental Chemical Corporation - Parcel Owner

Enclosure 1

Certification Instructions

I. Verification of Site Details (Box 1 and Box 2):

Answer the three questions in the Verification of Site Details Section. The Owner and/or Qualified Environmental Professional (QEP) may include handwritten changes and/or other supporting documentation, as necessary.

II. Certification of Institutional Controls/ Engineering Controls (IC/ECs)(Boxes 3, 4, and 5)

1.1.1. Review the listed IC/ECs, confirming that all existing controls are listed, and that all existing controls are still applicable. If there is a control that is no longer applicable the Owner / Remedial Party should petition the Department separately to request approval to remove the control.

2. In Box 5, complete certifications for all Plan components, as applicable, by checking the corresponding checkbox.

3. If you cannot certify "YES" for each Control listed in Box 3 & Box 4, sign and date the form in Box 5. Attach supporting documentation that explains why the **Certification** cannot be rendered, as well as a plan of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this **Certification** form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is completed.

If the Department concurs with the explanation, the proposed corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued by the Department's Project Manager. Once the corrective measures are complete, a new Periodic Review Report (with IC/EC Certification) must be submitted within 45 days to the Department. If the Department has any questions or concerns regarding the PRR and/or completion of the IC/EC Certification, the Project Manager will contact you.

III. IC/EC Certification by Signature (Box 6 and Box 7**):**

If you certified "YES" for each Control, please complete and sign the IC/EC Certifications page as follows:

- For the Institutional Controls on the use of the property, the certification statement in Box 6 shall be completed and may be made by the property owner or designated representative.

- For the Engineering Controls, the certification statement in Box 7 must be completed by a Professional Engineer or Qualified Environmental Professional, as noted on the form.

Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. **932021**

Site Name Hooker-Hyde Park Landfill

Site Address: 4825 Hyde Park Boulevard Zip Code: 14305
City/Town: Town Of Niagara
County: Niagara
Site Acreage: ~~22.800~~ 30

Reporting Period: March 31, 2021 to March 31, 2022

	YES	NO
1. Is the information above correct?	☐	X
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	X
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	X
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	X
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	X

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Closed Landfill	X	☐
7. Are all ICs in place and functioning as designed?	X	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative Date

SITE NO. 932021 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
130.11-1-3	Occidental Chemical Corporation	Ground Water Use Restriction Landuse Restriction Monitoring Plan O&M Plan
		Surface Water Use Restriction

Same as parcel with SBL number 130.11-4.1

130.11-1-4.1	Occidental Chemical Corporation	Ground Water Use Restriction Landuse Restriction Building Use Restriction Surface Water Use Restriction Monitoring Plan O&M Plan

Occidental, the United States and State of New York:

Stipulation and Judgement Approving Settlement Agreement,January 19, 1981
Stipulation on Requisite Remedial Technology, November 1, 1985
Enforcement Decision Document for Requisite Remedial Technology; November 11, 1985
Performance Monitoring Plan, July 31, 2006
Declaration of Restrictive Covenants and Environmental Easement, August 11, 2010

Legacy Restriction: "3. Restrictions on Use: The following restrictions apply to the use of the Property, run with the land, and are binding on the Grantor: the Property shall not be used in any manner that would interfere with or adversely affect the implementation, integrity, or effectiveness of the Response Action performed at the Site, including, but not limited to, a) the extraction of on-site groundwater, b) any digging, excavation, extraction of materials, construction, or other activity outside the requirements of the Response Action that would disturb the cap placed upon the Landfill at the Site, or c) other activity that would disturb or interfere with any portion of the Response Action for the Site enumerated in the RRT Stipulation."

130.11-1-5.1	Niagara Mohawk Power Corp	
7.2 acre portion only		Monitoring Plan O&M Plan

Occidental, the United States and State of New York:

Stipulation and Judgment Approving Settlement Agreement, January 19, 1981
Stipulation on Requisite Remedial Technology; November 1, 1985
Enforcement Decision Document for Requisite Remedial Technology, November 11, 1985
Performance Monitoring Plan, July 31, 2006

Box 4

Description of Engineering Controls

Parcel	Engineering Control
130.11-1-3	Point-of-Entry Water Treatment Groundwater Treatment System Groundwater Containment Fencing/Access Control Monitoring Wells

Granular activated carbon treatment facility that handles aqueous phase leachate (APL) and non-aqueous phase leachate (NAPL) generated from the landfill and offsite sources.

130.11-1-4.1	Groundwater Treatment System Monitoring Wells Cover System Groundwater Containment Leachate Collection Fencing/Access Control

The below engineering controls are from the Declaration of Restrictive Covenants and Environmental Easement August 11, 2010 and other documentation that are the most applicable to the parcel and community wide remediation.

Landfill cap. Landfill cap source control wells. Landfill perimeter capping. Collection and containment of aqueous phase liquids (APL) and non-aqueous phase liquids (NAPL) in the overburden. Collection and containment of APL and NAPL in the bedrock. Industrial protection program by sealing of sumps and manholes. Bloody run excavation with new culvert installation, cleaned of existing and/or slip lined. Niagara Gorge face soil and visibly contaminated rock excavated and disposed of in the landfill. Niagara Gorge face seeps remediation by APL plume pumping wells through groundwater flow zones.

130.11-1-5.1 7.2 acre portion only	Groundwater Treatment System Cover System Groundwater Containment Leachate Collection Fencing/Access Control Monitoring Wells

The below engineering controls are from documentation that are the most applicable to the parcel and community wide remediation.

Landfill cap. Landfill cap source control wells. Landfill perimeter capping. Collection and containment of aqueous phase liquids (APL) and non-aqueous phase liquids (NAPL) in the overburden. Collection and containment of APL and NAPL in the bedrock. Industrial protection program by sealing of sumps and manholes.

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the Engineering Control certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
X	☐

2. For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:

   (a) The Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
X	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

_____ _____

Signature of Owner, Remedial Party or Designated Representative — Date

IC CERTIFICATIONS
SITE NO. 932021

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Joseph A. Branch (print name) at 7601 Old Channel Trail, Montague, MI 49437 (print business address),

am certifying as Remedial Party (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

4-28-2022
Date

EC CERTIFICATIONS

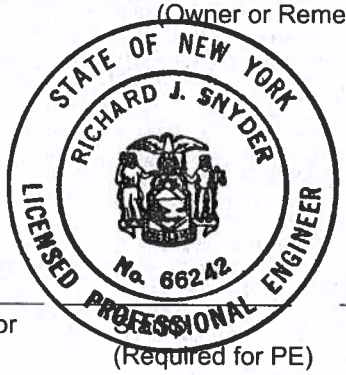
Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Richard Snyder (print name) at 2055 Niagara Falls Boulevard, Niagara Falls, NY 14304 (print business address)

am certifying as a Professional Engineer for the Remedial Party (Owner or Remedial Party)



Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification

(Required for PE)

April 29, 2022
Date

Enclosure 3
Periodic Review Report (PRR) General Guidance

I. Executive Summary: (1/2-page or less)
   A. Provide a brief summary of site, nature and extent of contamination, and remedial history.
   B. Effectiveness of the Remedial Program - Provide overall conclusions regarding;
      1. progress made during the reporting period toward meeting the remedial objectives for the site
      2. the ultimate ability of the remedial program to achieve the remedial objectives for the site.
   C. Compliance
      1. Identify any areas of non-compliance regarding the major elements of the Site Management Plan (SMP, i.e., the Institutional/Engineering Control (IC/EC) Plan, the Monitoring Plan, and the Operation & Maintenance (O&M) Plan).
      2. Propose steps to be taken and a schedule to correct any areas of non-compliance.
   D. Recommendations
      1. recommend whether any changes to the SMP are needed
      2. recommend any changes to the frequency for submittal of PRRs (increase, decrease)
      3. recommend whether the requirements for discontinuing site management have been met.

II. Site Overview (one page or less)
   A. Describe the site location, boundaries (figure), significant features, surrounding area, and the nature and extent of contamination prior to site remediation.
   B. Describe the chronology of the main features of the remedial program for the site, the components of the selected remedy, cleanup goals, site closure criteria, and any significant changes to the selected remedy that have been made since remedy selection.

III. Evaluate Remedy Performance, Effectiveness, and Protectiveness
   Using tables, graphs, charts and bulleted text to the extent practicable, describe the effectiveness of the remedy in achieving the remedial goals for the site. Base findings, recommendations, and conclusions on objective data. Evaluations and should be presented simply and concisely.

IV. IC/EC Plan Compliance Report (if applicable)
   A. IC/EC Requirements and Compliance
      1. Describe each control, its objective, and how performance of the control is evaluated.
      2. Summarize the status of each goal (whether it is fully in place and its effectiveness).
      3. Corrective Measures: describe steps proposed to address any deficiencies in ICECs.
      4. Conclusions and recommendations for changes.
   B. IC/EC Certification
      1. The certification must be complete (even if there are IC/EC deficiencies), and certified by the appropriate party as set forth in a Department-approved certification form(s).

V. Monitoring Plan Compliance Report (if applicable)
   A. Components of the Monitoring Plan (tabular presentations preferred) - Describe the requirements of the monitoring plan by media (i.e., soil, groundwater, sediment, etc.) and by any remedial technologies being used at the site.
   B. Summary of Monitoring Completed During Reporting Period - Describe the monitoring tasks actually completed during this PRR reporting period. Tables and/or figures should be used to show all data.
   C. Comparisons with Remedial Objectives - Compare the results of all monitoring with the remedial objectives for the site. Include trend analyses where possible.
   D. Monitoring Deficiencies - Describe any ways in which monitoring did not fully comply with the monitoring plan.
   E. Conclusions and Recommendations for Changes - Provide overall conclusions regarding the monitoring completed and the resulting evaluations regarding remedial effectiveness.

VI. Operation & Maintenance (O&M) Plan Compliance Report (if applicable)
   A. Components of O&M Plan - Describe the requirements of the O&M plan including required activities, frequencies, recordkeeping, etc.
   B. Summary of O&M Completed During Reporting Period - Describe the O&M tasks actually completed during this PRR reporting period.
   C. Evaluation of Remedial Systems - Based upon the results of the O&M activities completed, evaluated

the ability of each component of the remedy subject to O&M requirements to perform as designed/expected.

D. O&M Deficiencies - Identify any deficiencies in complying with the O&M plan during this PRR reporting period.

E. Conclusions and Recommendations for Improvements - Provide an overall conclusion regarding O&M for the site and identify any suggested improvements requiring changes in the O&M Plan.

VII. Overall PRR Conclusions and Recommendations

A. Compliance with SMP - For each component of the SMP (i.e., IC/EC, monitoring, O&M), summarize;
   1. whether all requirements of each plan were met during the reporting period
   2. any requirements not met
   3. proposed plans and a schedule for coming into full compliance.

B. Performance and Effectiveness of the Remedy - Based upon your evaluation of the components of the SMP, form conclusions about the performance of each component and the ability of the remedy to achieve the remedial objectives for the site.

C. Future PRR Submittals
   1. Recommend, with supporting justification, whether the frequency of the submittal of PRRs should be changed (either increased or decreased).
   2. If the requirements for site closure have been achieved, contact the Departments Project Manager for the site to determine what, if any, additional documentation is needed to support a decision to discontinue site management.

VIII. Additional Guidance

Additional guidance regarding the preparation and submittal of an acceptable PRR can be obtained from the Departments Project Manager for the site.

Appendix B

Well G6-05 Organic Compound Concentrations

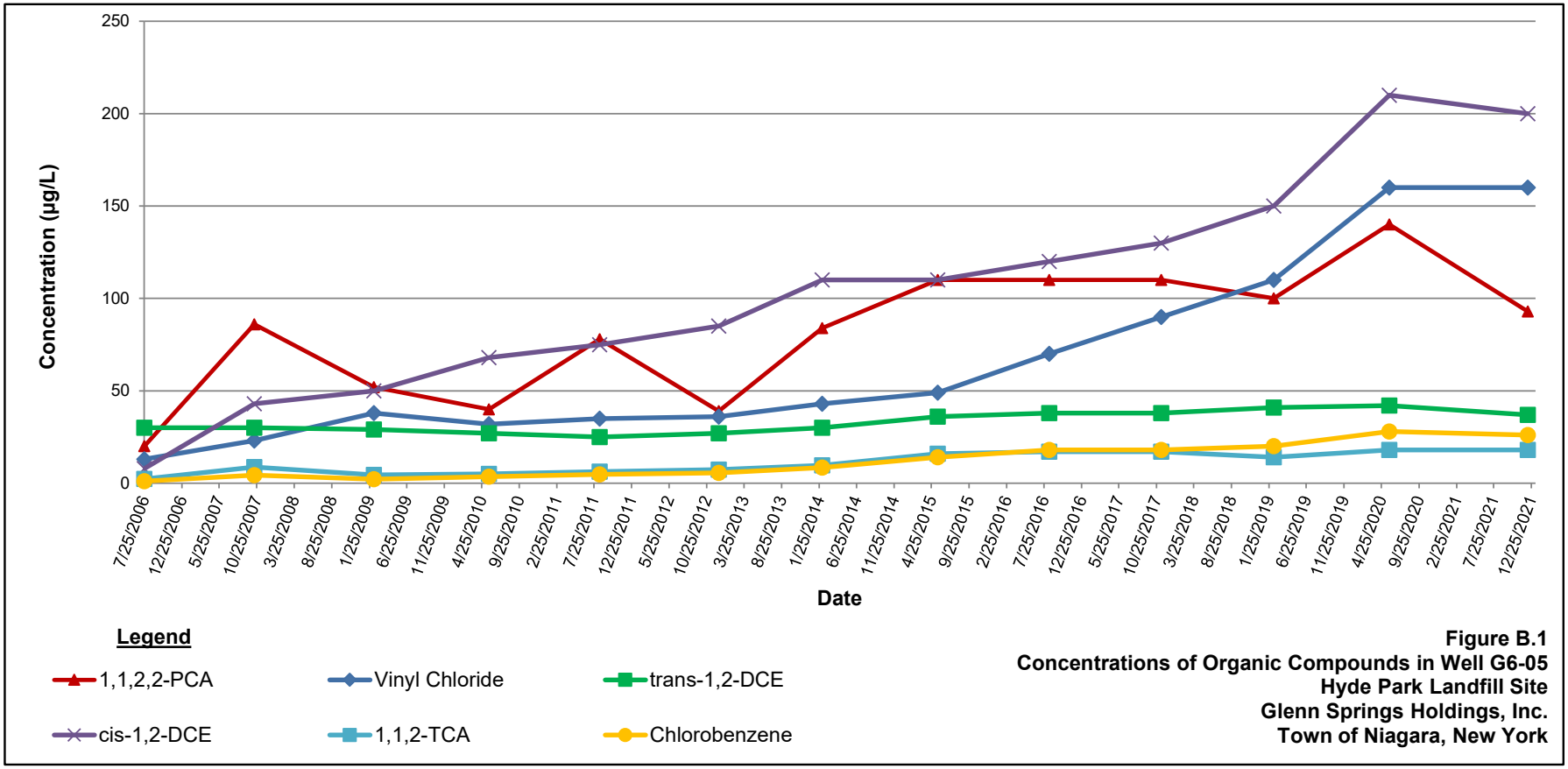


Figure B.1
Concentrations of Organic Compounds in Well G6-05
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Town of Niagara, New York

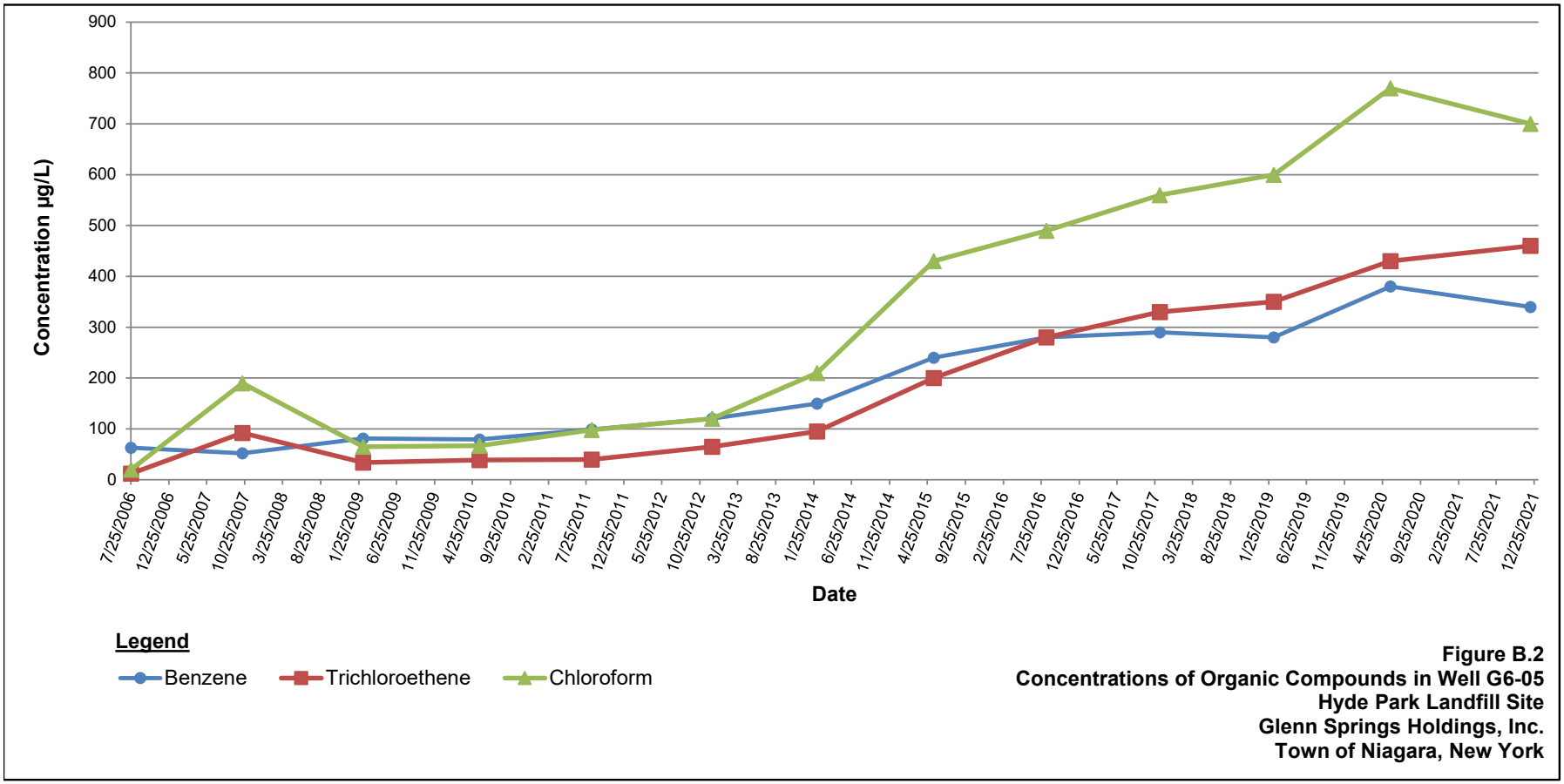


Figure B.2
Concentrations of Organic Compounds in Well G6-05
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Town of Niagara, New York

Appendix C

Bloody Run Analytical Results Validation Memo

Technical Memorandum

March 22, 2022

To	Joe Branch (joseph_branch@oxy.com)	**Tel**	715.205.1977
Copy to	Joel Spring	**Email**	Joel.Spring@ghd.com
Copy to	John Pentilchuk	**Email**	John.Pentilchuk@ghd.com
Copy to	Maggie Popek	**Email**	Maggie.Popek@ghd.com
From	Sheri Finn/ro/12-NF	**Ref. No.**	11223908
Subject	Analytical Results and Reduced Validation Annual Bloody Run Sampling Glenn Springs Holdings, Inc. Hyde Park Landfill Niagara Falls, New York October 2021		

1. Introduction

This document details a reduced validation of analytical results for water samples collected in support of the annual bloody run sampling program at the Hyde Park Landfill site during October 2021. The samples were submitted to ALS Labs located in Rochester, New York. A summary of the analytical methodology is presented in Table 1. The validated analytical results are summarized in Table 2.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody form, finished report form, method blank data, and recovery data from surrogate spikes/laboratory control sample (LCS), LCS/laboratory control sample duplicate (LCS/LCSD), and field QA/QC.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 1 and applicable guidance from the documents entitled:

i) " January 2017 Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002)

ii) "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", United States Environmental Protection Agency (USEPA) 540-R-2017-001)

Items i) and ii) 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 1. The sample chain of custody document and analytical report were used to determine sample holding times. The samples were prepared and analyzed within the required holding times.

The samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method 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.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

4. Surrogate Spike Recoveries

In accordance with the methods employed, all samples, blanks, and QA/QC samples analyzed for volatile organic compounds (VOC) are spiked with surrogate compounds prior to sample analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for VOC determinations were spiked with the appropriate number of surrogate compounds prior to sample analysis.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries met the laboratory criteria.

5. Laboratory Control Sample Analyses

LCS or LCS/LCSD are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

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.

The LCS or LCS/LCSD contained all compounds of interest. All LCS recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision where applicable.

6. Field QA/QC Samples

The field QA/QC consisted of one trip blank sample.

To evaluate contamination from sample collection, transportation, storage, and analytical activities, one trip blank was submitted to the laboratory for VOC analysis. All results were non-detect for the compounds of interest.

7. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each compound. Positive detections less than the reporting limit (RL) but greater than the MDL were reported 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.

8. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable without qualification.

Regards

Sheri Finn
Analyst

Table 1

Summary of Analytical Methods
Annual Bloody Run Sampling
Glenn Springs Holdings, Inc.
Hyde Park Landfill
Niagara Falls, New York
October 2021

Parameter	Method	Matrix	Holding Time
TCL VOC	SW-846 8260[1]	Water	- 14 days from sample collection to completion of analysis
Organic Acids*	OxyChem/HPLC	Water	- 28 days from sample collection to completion of analysis
Sulfate	EPA 300	Water	- 28 days from sample collection to completion of analysis

Notes:

TCL - Target Compound List
VOC - Volatile Organic Compounds
HPLC - High Performance Liquid Chromatography
* - Benzoic, m/p/o-chlorobenzoic acid, and chlorendic acid

Method Reference:

SW-846 [1] - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 3rd Edition, and Promulgated updates, November 1986
EPA - Methods for Chemical Analysis of Water and Waste, EPA-600/4-79-020, revised March 1983, with subsequent revisions

Table 2

Analytical Results Summary
Annual Bloody Run Sampling
Glenn Springs Holdings, Inc.
Hyde Park Landfill
Niagara Falls, New York
October 2021

Location ID:		**BR-1**	**BR-2**	**BR-3**	**BR-4**
Sample Name:		**BR-1-1021**	**BR-2-1021**	**BR-3-1021**	**BR-4-1021**
Sample Date:		**10/27/2021**	**10/27/2021**	**10/27/2021**	**10/27/2021**
Depth:		**--**	**--**	**--**	**--**
Parameters	**Unit**				
Volatile Organic Compounds					
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	100	0.29 J	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	1.0 U	0.22 J	1.0 U	1.0 U
3-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	1.0 U	4.8	1.0 U	1.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	0.61 J
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	0.68 J	0.90 J	1.0 U	1.7
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorofluoromethane	µg/L	1.0 U	0.25 J	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
m-Monochlorobenzotrifluoride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
o-Monochlorobenzotrifluoride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
p-Monochlorobenzotrifluoride	µg/L	1.0 U	0.24 J	1.0 U	1.0 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	1.0 U	0.25 J	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl acetate	µg/L	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	µg/L	0.34 J	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	3.0 U	3.0 U	3.0 U	3.0 U
Semivolatile Organic Compounds					
2-Chlorobenzoic acid	mg/L	0.030 U	0.030 U	0.030 U	0.030 U
3-Chlorobenzoic acid	mg/L	0.030 U	0.030 U	0.030 U	0.030 U
4-Chlorobenzoic acid	mg/L	0.030 U	0.030 U	0.030 U	0.030 U
Benzoic acid	mg/L	0.10 U	0.10 U	0.10 U	0.10 U
Chlorendic acid	mg/L	0.25 U	0.12 J	0.14 J	0.29

Table 2

Analytical Results Summary
Annual Bloody Run Sampling
Glenn Springs Holdings, Inc.
Hyde Park Landfill
Niagara Falls, New York
October 2021

Location ID:		**BR-1**	**BR-2**	**BR-3**	**BR-4**
Sample Name:		**BR-1-1021**	**BR-2-1021**	**BR-3-1021**	**BR-4-1021**
Sample Date:		**10/27/2021**	**10/27/2021**	**10/27/2021**	**10/27/2021**
Depth:		**--**	**--**	**--**	**--**
Parameters	**Unit**				
General Chemistry					
Sulfate	mg/L	224	293	278	209

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit.

Appendix D

2021 Gorge Face Seep Survey Results

D. Gorge Face Seep Survey

The 2021 Biennial Gorge Face Seep Survey of seeps and culverts located along accessible pathways along the Niagara Gorge between the New York Power Authority (NYPA) fence on the Lower Access Road and the Garfield Avenue Outfall Sewer was conducted by GHD Services Inc. (GHD), along with a representative from the New York State Department of Environmental Conservation (NYSDEC). The purpose of the survey is to monitor the status of previously identified seeps/wet areas and to identify new flowing seeps/wet areas. This was the sixth biennial survey conducted since August 2006. The team of survey members who participated on November 10, 2021 consisted of:

- Maggie Popek – GHD
- John Pentilchuk – GHD
- Joseph Branch – GSH
- Andrew Zwack – NYSDEC

The weather was moderately warm (~55°F) with sunny skies. There was no rainfall during the survey.

D.1 Seep Survey Results

During the survey, all of the accessible seep/wet areas identified during previous surveys were reexamined, with the exception of the Seep 11, Seep 12, Bloody Run outlet, and Culvert 1 locations, which were not open to the public at the time of the survey. A reevaluation of the proposed remedial action was conducted. The seep locations are presented on Figure D.1. It should be noted that NYPA added slope stability fence fabric along portions of the gorge face in the spring of 2000 to protect the access road.

A total of 22 seep locations and 7 culverts, as well as the Garfield Street Outfall Sewer, were visited and inspected for variations in flow and exposed wet areas. Descriptions of the observations from each remaining seep are listed in the following summary of survey results.

As observed during previous surveys, since vegetation and rock are covering large portions of Seep 7, this seep is no longer composed of nine distinct parts (labeled a through i). Therefore, the summary has combined areas of this seep together under common descriptions.

It should be noted that during this inspection, it was decided that odor would only be mentioned if it was present at the time of inspection. However, the inspection found no chemical odors present at any seeps or culverts.

	SEEP SURVEY RESULTS	
Seep No.	***Description***	***Notes***
1	Dry, normal vegetation, seep basin is clear and dry. No flow.	Same conditions as in 2019.
2 (Culv. 6)	Moderate flow. Minor green algae, moss, and grass on face of Rochester Shale.	Same conditions as in 2019 except for increased flow.
2 (Ditch line)	No odor, green moss, vegetation. Talus in ditch.	Same conditions as in 2019.
3 (Top)	Heavy phragmites, reeds, and other vegetation on north and south sides of Bloody Run concrete box culvert. Area too heavily vegetated to safely approach seep. Seep not visible from roadway. No audible flow.	Area fenced. Same conditions as in 2019.
3 (Bottom)	Heavy vegetation, mostly phragmites. Rocks are moist but no standing water in basin (deepest portion) at Bloody Run Culvert.	Remediated. Same conditions as in 2019.
4	Seep not visible. Rocks are dry. Very heavy vegetation. No audible flow.	Same conditions as in 2019.
5	Rock face is dry. No flow.	Remediated. Same conditions as in 2019 except rock face was slightly moist in 2019.
6	Dry rock face. No flow.	Remediated. Same conditions as in 2019.
7 a,b	Covered with local rock. Vegetation. Dry to moist.	Remediated. Same conditions as in 2019.
7 c	Dry to moist. Vegetation.	Remediated. Same conditions as in 2019.
7 d	Wet with very light flow over top of Irondequoit. Algae on face of rock.	Remediated. Same conditions as in 2019 except flow was heavier (10 to 15 GPM) in 2019.
7 e,f,g,h,i	No audible flowing water beneath rocks. Some vegetation. No flow observed.	No action required. Same conditions as in 2019.
8	Standing water, no flow observed. Some vegetation.	No action required. Same conditions as in 2019.

	SEEP SURVEY RESULTS	
Seep No.	***Description***	***Notes***
11a	No access to stairwell to Seep 11 location.	Not applicable – no access. Remediated.
11b	No access to stairwell to Seep 11 location.	Not applicable – no access.
12	No access to Seep 12 location due to barrier fence.	Not applicable – no access.
14	Approximately 80 feet to 100 feet south of the south fence line of Seep 3. Some localized moist areas and light dripping observed. Phragmites and moss present.	No action required. Same conditions as in 2019 except moss not visible in 2019 and phragmite coverage was heavier.
16	Not located.	No action required.
17a	North – area approximately 150 feet north of the north wall of Seep 2. Dry. Sparse vegetation.	No action required. Same conditions as in 2019.
17b	South – dry. Sparse vegentation.	No action required. Same conditions as in 2019.
18	Seep is 0 to 75 feet north of the north wall of Seep 3. Seep not visible. Vegetation on dry rock face (Upper Grimsby). Heavily vegetated. No audible flow.	No action required. Same conditions as in 2019.
19	Not observed due to presence of drums.	No action required. Same conditions as in 2019.
20	Moderate flow audible (not visible due to heavy vegetation). Rocks are moist. Heavily vegetated.	No action required. Same conditions as in 2019, except flow (audible only) was light in 2019.
21	Area 375 feet south of Seep 7 (Devil's Hole Stairs) by the river. Dry.	Same conditions as in 2019.
Bloody Run	Fenced-in area by the river shoreline at Seep 11. No access to stairwell to Seep 11/Bloody Run location.	Not applicable – no access.

During the seep survey, the following culverts were also inspected and the observed conditions were as follows:

	CULVERT SURVEY RESULTS	
Culvert No.	***Description***	***Notes***
1	No access to Culvert 1 location due to barrier fence.	Not applicable – no access.
2	Steady flow observed at outlet (~1 GPM). Outlet reconstructed by NYPA, significant vegetation.	No action required. Same conditions as in 2019.
3	Outlet is dry.	No action required. Could not locate outlet in 2019. Inlet was dry in 2019.
4	Outlet is dry.	No action required. Could not locate outlet in 2019.
5	Moderate flow at outlet, some phragmites.	No action required. Could not locate outlet in 2019. Inlet was dry in 2019.
6	Moist.	No action required. Same conditions as in 2019.
7	Dry.	No action required. Same conditions as in 2019.
8	Dry. Well vegetated.	No action required. Same conditions as in 2019.
Garfield Avenue Sewer	Limited access due to rock fall. No moisture observed in ceiling as viewed from outside the archway. Trickling water heard. Strong sewer odor.	No action required. Same conditions as in 2019.

Figure D.1 shows the general locations of all the seep/wet areas and culverts discussed in this report. Specific details of Seeps 5 and 6 are shown on Figure D.2, and details of Seeps 7 and 8 are outlined on Figure D.3.

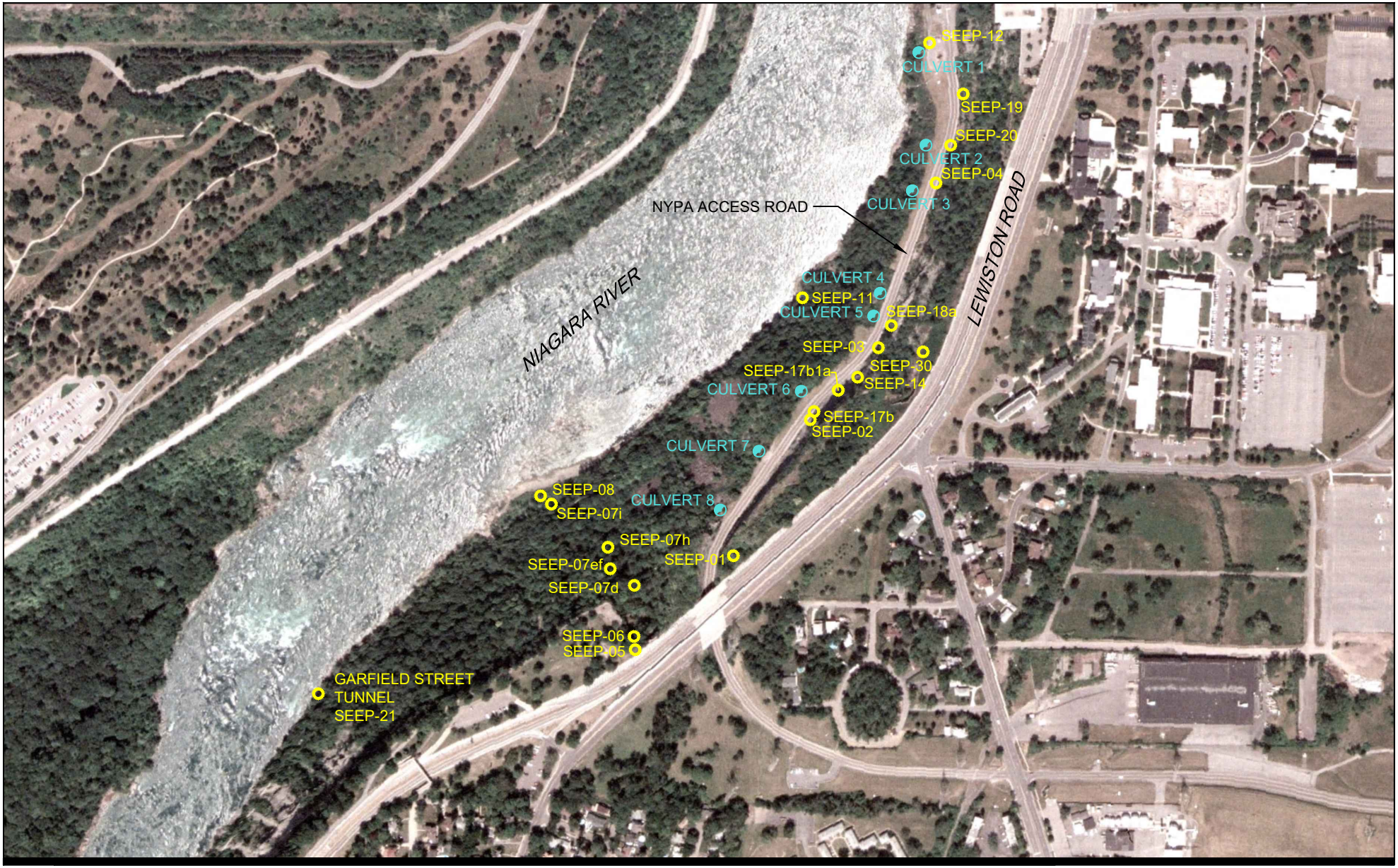
D.2 Seep Sampling

No visual or olfactory evidence of impact was observed at the seep and culvert locations visited. However, at the request of the United States Environmental Protection Agency (USEPA), water samples were collected from Seeps 2 and 7d in accordance with industry-accepted field sampling techniques and submitted to ALS Environmental (ALS) in Rochester, New York for analysis of parameters specified by EPA. The NYSDEC was present for the sampling activities. One blind field duplicate sample was collected from Seep 2 for analysis of all parameters, and one trip blank that accompanied the sample bottles in the field and to the laboratory was submitted for volatile organic compound (VOC) analysis.

The laboratory report for the seep sampling was submitted to the NYSDEC and USEPA under separate cover. A summary of the analytical data is presented in Table D.1. No parameters, other than organic carbon and total organic halides, were detected at concentrations above the laboratory's method detection limits in any of the samples submitted. A GHD chemist performed a reduced validation on the sample results and determined the results to be acceptable with the qualifications noted. The data validation memo was also submitted to the NYSDEC and USEPA under separate cover.

D.3 Recommendations

Based upon the results of the 2021 Biennial Gorge Face Seep Survey, no remedial actions are recommended at this time. The next inspection will be scheduled for fall 2023, unless a change in the frequency of the survey is approved.



LEGEND

SEEP-02 SEEP LOCATION

CULVERT 8 CULVERT LOCATION

0 250 500 ft

1" = 500 ft

N

GHD

GLENN SPRINGS HOLDINGS, INC.
HYDE PARK LANDFILL SITE
NIAGARA FALLS, NEW YORK

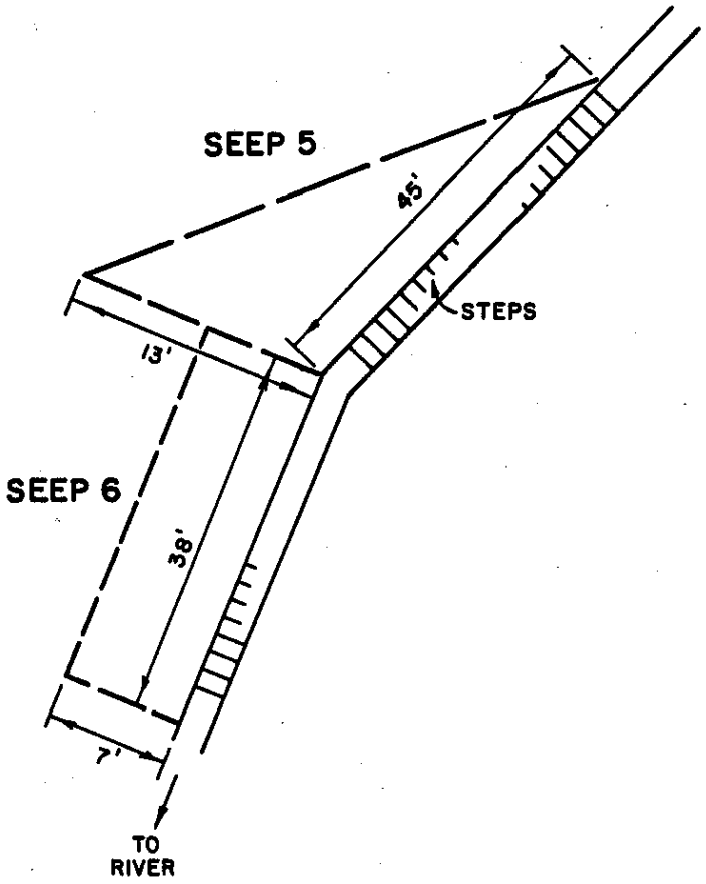
Project No. **11230216**
Date **April 2022**

SEEP LOCATIONS - OVERVIEW

FIGURE D.1

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\RPT002\11230216-GHD-00-00-RPT-EN-D110_WA-002.DWG
Plot Date: 18 April 2022 9:57 AM

Data Source:2006 AERIAL IMAGE FOR NIAGARA COUNTY, NEW YORK; STATE PLANE NEW YORK WEST, NAD83. IMAGE PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) AS PART OF THE NORTH AMERICAN IMAGE PROGRAM (NAIP).



GLENN SPRINGS HOLDINGS, INC.
HYDE PARK LANDFILL SITE
NIAGARA FALLS, NEW YORK

Project No. **11230216**
Date **April 2022**

SEEP LOCATIONS - UPPER DEVIL'S HOLE

FIGURE D.2

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\RPT002\11230216-GHD-00-00-RPT-EN-D111_WA-002.DWG
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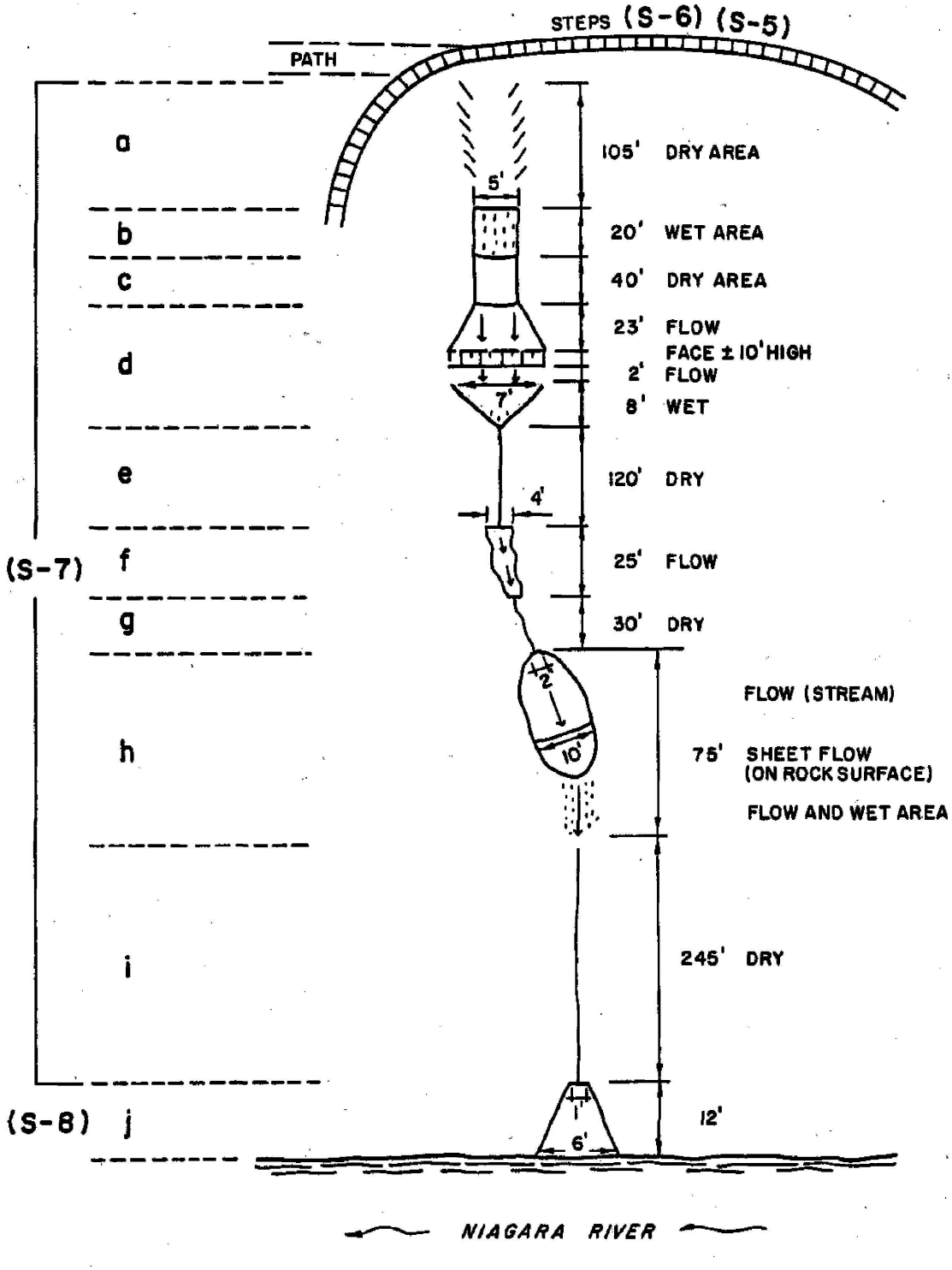

NOT TO SCALE

N

GHD

GLENN SPRINGS HOLDINGS, INC.
HYDE PARK LANDFILL SITE
NIAGARA FALLS, NEW YORK

SEEP LOCATIONS - LOWER DEVIL'S HOLE

Project No. **11230216**
Date **April 2022**

FIGURE D.3

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\RPT002\11230216-GHD-00-00-RPT-EN-D112_WA-002.DWG
Plot Date: 18 April 2022 10:02 AM

Table D.1

Analytical Results Summary
Gorge Seep Survey
Glenn Springs Holdings, Inc.
Hyde Park Landfill
Niagara Falls, New York
November 2021

Location ID:		Seep-02	Seep-02	Seep-07d	Trip Blank
Sample Name:		Seep-11230216-111021-MAP-001	Seep-11230216-111021-MAP-002	Seep-11230216-111021-MAP-003	Trip Blank
Sample Date:		11/10/2021	11/10/2021 Duplicate	11/10/2021	11/10/2021
Parameters	**Unit**				
Volatile Organic Compounds					
1,2,3-Trichlorobenzene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
1,2,4-Trichlorobenzene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
1,3,5-Trichlorobenzene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
2-Chlorotoluene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
3-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
Chlorobenzene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
m-Monochlorobenzotrifluoride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
o-Monochlorobenzotrifluoride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
p-Monochlorobenzotrifluoride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds					
1,2,3,4-Tetrachlorobenzene	µg/L	5.0 U	5.0 U	5.0 U	--
1,2,4,5-Tetrachlorobenzene	µg/L	10 U	10 U	10 U	--
2,4,5-Trichlorophenol	µg/L	10 U	10 U	10 U	--
Octachlorocyclopentene	µg/L	5.0 U	5.0 U	5.0 U	--
Pesticides					
alpha-BHC	µg/L	0.045 UJ	0.045 UJ	0.045 UJ	--
beta-BHC	µg/L	0.045 UJ	0.045 UJ	0.045 UJ	--
delta-BHC	µg/L	0.045 UJ	0.045 UJ	0.045 UJ	--
gamma-BHC (lindane)	µg/L	0.045 UJ	0.045 UJ	0.045 UJ	--
General Chemistry					
Phenolics (total)	mg/L	0.0050 U	0.0050 U	0.0050 U	--
Total organic carbon (TOC)	mg/L	3.3	3.2	3.7	--
Total organic halides (TOX)	µg/L	180	171	97.90	--

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit

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